

A grounded theory of weight lifting as a healing strategy for trauma

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ABSTRACT

Research has found significant benefits in using exercise as an adjunct treatment for PTSD, depression, and anxiety. Weight lifting as an adjunct treatment for trauma is an emerging research area with very few empirically based studies. This study used a qualitative grounded theory approach to explore how weight lifting contributes to healing for persons with a trauma history. Forty-six persons (26 = women, 8 = men, 6 = nonbinary, 5 = transgender man, 1 = agender), recruited from a national sample of individuals, who identified as having experienced trauma and who engage in weight lifting, were individually interviewed. Data were analyzed using Charmaz's (2006) constructivist grounded theory strategies. Central themes revealed that past and current trauma experiences created relational and bodily disconnection fueled by hyper- or hypo-vigilance, impulsivity, and dysregulation. Weight lifting healed trauma through the felt sense of the mind-body connection, which created a healthier, more empowered, and connected trauma survivor. Study findings offer important insights to inform the development of trauma-informed gym spaces as well as the integration of weight lifting into trauma recovery programs.

Being physically active has overall health benefits. Exercise increases cardiorespiratory fitness (Kodama et al., 2009) which decreases the risk for cardiovascular disease (Sarzynski et al., 2016), type 2 Diabetes (Tuomilehto et al., 2001), and increases brain function (Cotman & Berchtold, 2002), all directly correlated with an increased life span. In addition to the physical benefits, exercise improves mood and relaxation (Ekkekakis et al., 2017). Research has found significant benefits in using exercise as an adjunct treatment modality for depression (Powers et al., 2015; Stathopoulou et al., 2006), anxiety (Asmundson et al., 2013; Wipfli et al., 2008), post-traumatic stress disorder (PTSD) (Fetzner & Asmundson, 2015) and substance-related disorders (Strohle et al., 2007).

A variety of reactions are often reported after trauma that span multiple domains (physical, emotional, cognitive, behavioral, social, and developmental). These reactions are often normal responses to trauma but can be distressing to experience (SAMSHA, 2014) and could include symptoms of depression, anxiety, and PTSD. Bessel van der Kolk (2014) argued that after trauma, a different nervous system experiences the world. van der Kolk (2006) reported that memory of the trauma is encoded in the viscera and argued that the most successful treatment

incorporates top-down approaches (those that activate social engagement) with bottom-up methods (those that calm physical tensions in the body) (van der Kolk, 2014). The concept of body movement as a bottom-up intervention for trauma is not new. To address physiological dysregulation and somatic symptoms in trauma, practitioners have explored mind-body practices such as yoga. Research has demonstrated the efficacy of trauma-informed yoga as an adjunct treatment for trauma (Emerson et al., 2009; Kelly, Haywood, Segell, & Higgins, 2021; Nolan, 2016; van der Kolk, 2014).

A more recent discovery in body movement interventions for trauma is weight lifting. Resistance training/lifting weights has a positive effect on well-being and can be an effective healing strategy for trauma. Whitworth et al. (2017) found that strenuous intense exercise improved PTSD symptoms. In a meta-analysis of thirty-three clinical trials, including 1877 participants, resistance exercise training was associated with a significant reduction in depressive symptoms (Gordon et al., 2018). Additionally, a meta-analysis of sixteen studies, including 922 participants, showed resistance exercise training improved anxiety symptoms among both healthy participants and participants with a physical or mental illness (Gordon et al., 2017). Herring et al. (2011)

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found that lifting weights just twice a week led to a remission rate among participants diagnosed with generalized anxiety disorder that was on par with antidepressants. Resistance training improved self-esteem in healthy younger and older adults as well in cancer, cardiac rehabilitation, and depression patient populations (O'Connor, Herring, & Carvalho, 2010). Weight lifting is a feasible, low-risk treatment that can potentially reduce depressive and anxiety symptoms, increase feelings of self-worth, and may be an effective adjunctive treatment for people experiencing trauma-related symptoms (Whitworth et al., 2019).

Neuropsychiatric research insights and the results of recent clinical studies suggest that weight lifting may be both a powerful protective factor and a valuable intervention for negative outcomes associated with trauma. However, weight lifting with trauma survivors remains an emerging research area with very few empirically based studies. Much of this work involves the assessment of aerobic exercise as an adjunctive treatment to be used in combination with psychotherapy and/or antidepressants. In 2019, the first randomized control trial to explore high-intensity resistance exercise's [weight lifting] effect on PTSD found it to be a feasible intervention for post-traumatic stress symptom reduction among adults with PTSD and anxiety (Whitworth et al., 2019). A growing number of studies have investigated additional forms of exercise, a diversity of mental health conditions, and the possibility of exercise as a stand-alone, initial intervention in a variety of clinical situations. Canada, the United Kingdom, the Netherlands, Australia, and New Zealand have adopted clinical guidelines for the treatment of major depression that include exercise/physical activity, often as a stand-alone intervention in the initial presentation of mild depression. Notably, the United States is not among these countries. We need to generate a better understanding of the specific elements associated with weight lifting that contribute to healing and create a clear and coherent theory of practice for its use for individuals with a trauma history. To date, no research has explored weight lifting as a healing strategy for persons with a trauma history. To address these gaps in the literature and explain the effects of exercise programming on psychological well-being and quality of life, the primary aim of the current study was to understand why and how weight lifting was healing for those with a trauma history. Because of the benefits of exercise and weight training, it is important to gain a more in-depth and nuanced understanding of how weight lifting could be a useful strategy to treat symptoms of trauma.

1. Methods

The purpose of this study was to explore the role of weight lifting in healing from trauma. Given the exploratory nature of the study's purpose, the researchers collected and analyzed qualitative interviews utilizing Charmaz's constructivist grounded theory approach. When using constructivism as a guiding theory of practice, the researcher becomes a partner in the reconstruction of the participants' shared experiences. Charmaz (2014) has positioned the researcher as co-producer, encouraging them to "add ... a description of the situation, the interaction, the person's affect and [their] perception of how the interview went" (p. 33). It is through the newly formed shared meaning of participant experiences that theory is developed.

1.1. Data collection

The sample is a non-probability purposive sample that included lifters with a self-identified trauma history. The researchers have a collaborative relationship with The Justice Resource Institute (JRI), which is the parent organization to the Center for Trauma and Embodiment, home to programs such as Trauma Informed Weight Lifting and Trauma Sensitive Yoga. Following Institutional Review Board approval by the primary author's institution and the JRI, the JRI sent emails detailing the study to their email list and posted a study flyer on their social media platforms. Interested participants contacted the

researchers to schedule a Zoom interview. The qualifying criteria for participation in the study were that individuals must be 18 years of age or older and have a self-reported trauma history. Participants were asked to qualify their trauma history on a demographics survey that asked participants to select all that apply: interpersonal trauma (examples offered to participants of interpersonal trauma included abuse, neglect, and assault), intrapersonal trauma (examples offered to participants of intrapersonal trauma included car accident, natural disaster, or invasive medical procedure), or systemic trauma (examples offered to participants of systemic trauma included oppression and discrimination). The final inclusion criteria were participants be engaged in weight lifting for at least 3 months currently or in the past. This was captured in the demographics survey by asking respondents to write in length of time lifting. Interested participants were excluded (N = 3) if they reached out past the data collection deadline.

Participants completed informed consent via email prior to participation in the study. The informed consent advised participants as to the purpose of the study, the possible risks of participation, and the capacity of Zoom's privacy features and their limitations. Interviews ranged from 45 to 90 min. Interviews were recorded and transcribed verbatim immediately following the interview. It was within this time that researchers were able to write memos concerning thoughts and feelings with the transcribed content. Participants received a \$20 gift card as a token of appreciation for their participation.

1.2. Measures

The interview collected both demographic and open-ended questions; however, the researchers remained open and responsive if the participant led the conversation to additional questions, typical of grounded theory. The open-ended questions included.

- Tell me a little about yourself and how you came to experience weightlifting? *Prior to your engagement in weight lifting, what were your early thoughts about it? Who/What influenced those messages?*
- *How has COVID impacted your lifting experience? Have there been other things going on in your life that have affected your ability to lift?*
- What sorts of things do you think individuals who have experienced trauma (like you) might need for their health? What about their mental health? What about just lifestyle and well-being?
- What has been most helpful in your healing?
- What are your beliefs about exercise and weight lifting benefitting overall health? What are your beliefs about mind-body connection? Ask only if they note a positive connection: How has weight lifting impacted your healing from past trauma?
- What is your perception of any changes (positive, negative, or both/neither) through participation in weight lifting? What is different? How are you different? In what ways is your life different because of weight lifting? *Has weightlifting had an impact on your identity, either as an individual or as a member of a community?"*
- What concerns/barriers did you have prior to joining a gym? Have you had any experiences in your gym/a gym that led you to consider not returning?
- What might prevent a trauma survivor from joining a gym?
- Is there anything we should have talked about, but did not?

As data analysis began, the researchers theoretically sought out additional questions based on early emerging themes, as represented by the questions in italics above. For example, early participants identified how the pandemic influenced their participation in weight lifting and any subsequent trauma response. To draw richer, more meaningful data specific to this theme, participants offered details about their lifting experience with COVID restrictions.

1.3. Data analysis

Data analysis, using constructivist grounded theory strategies (Charmaz, 2014), began with becoming familiar with the transcribed data by reading each interview script multiple times. Meaning is constructed through the qualitative researcher’s interpretive understandings, an emic perspective that assumes a relativist and reflexive stance toward the data (Charmaz, 2014). This interactive and reflexive process allows the theory to emerge from the participants’ lived experiences by way of a coding procedure. In the first step, the research team independently performed line-by-line open coding to identify individual segments of meaning within the data. We met regularly to discuss and resolve differences in interpretations of the codes. We started with eighty-nine codes, eliminated duplicates, and settled on 57 early codes. Examples of early codes included: Living with a monkey mind, creating a space for the present, ending up in disassociation. Researchers then categorized open codes into higher-level categories. By grounding the analyses in the data, selective coding enabled the researcher to discover emergent codes and categories (Charmaz, 2014). In this stage the researchers focused on renaming the most significant and frequently occurring codes, which resulted in twelve categories. Examples of categories included: disembodiment, social isolation, and empowerment/posttraumatic growth. From the categories, two major themes developed: Trauma fuels disconnection and weight lifting heals trauma through the mind-body connection, which created a healthier, more empowered, and connected trauma survivor. The researchers then constructed a grounded theory from the analysis of the inter-relationships among the themes. The twelve categories are embedded in the themes and presented in the figure of a grounded theory of weight lifting as a healing strategy for trauma.

Multiple steps ensured the rigor of the study. Charmaz’s Grounded theory (2006) is an explicitly emergent method due to the comparative and interactive nature of data collection and analysis. Memos during all levels of coding directed the analysis process and helped produce an evolving theory. Memos deepened theoretical sensitivity, as writing focused on exploring data within the context of the research team’s understanding of the mind-body trauma treatment literature, as well as practice experiences with clients experiencing trauma and using weight lifting as a healing strategy. To enhance credibility, member checking allowed participants to verify the meanings and concepts of the core categories and analyzed data. To add to the dependability of the data, two members of the team peer reviewed each other’s emerging categories and all contributed towards the grounded theory. Finally, two persons with trauma history who engage in weight lifting and were not participants in the study were asked to review the analysis to establish confirmability.

1.4. Researcher positionality/reflexivity

Despite the authors’ positive intentions and collective commitment to ensuring findings remain rooted in participant experiences, we acknowledge the potential impact of identity and experience-based factors among individual members of the research team, including those factors that shared with study participants. All members of the research team engaged in ongoing discussion, reflection, and analysis of emerging themes. These processes helped the researchers distinguish between preexisting views and ideas and findings emanating directly from participant accounts, leading to the co-construction of meaning through the team’s engagement with participant narratives (Charmaz, 2014).

2. Results

The study included forty-six participants that ranged in age from 23 to 68 years old; the average age was 36 years old. Table 1 provides an overview of participant demographics. A majority of the sample were

Table 1
Participant demographics.

Demographic Characteristic	Response	Percentage
Gender Identity (N = 42)	Woman	55%
	Man	19%
	Nonbinary	10%
	Transgender man	13%
	Agender	2%
Race (N = 37)	White	65%
	Black	3%
	Hispanic/Latinx	14%
	Asian/Pacific Islander	5%
	Mixed	13%
Sexual Orientation (N = 39)	Straight	51%
	Queer	18%
	Lesbian	5%
	Bisexual	13%
	Questioning	3%
	Asexual	3%
Education (N = 37)	Some college	14%
	College degree	51%
	Graduate degree	35%
Employment (N = 42)	Full time	65%
	Part time	21%
	Not working	14%
Where lift weights (N = 42)	Gym	50%
	Home	18%
	Both	32%

white women with college degrees or higher. The participants had lifted weights an average of 9 years (range 2–40 years). Ninety-three percent of participants collaborated with a coach, mostly in the gym. However, COVID restrictions forced participants to lift weights at home. Ninety-seven percent of the sample reported interpersonal trauma, forty-six percent reported intrapersonal trauma, thirty-five percent reported systemic trauma. Thirty-three percent of the sample reported experiencing one trauma type, 52% reported experiencing two trauma types, and 15% reported experiencing all three trauma types. Only 5% reported the trauma to be an isolated incident (acute), whereas 55% reported the trauma experiences repeated over time (chronic), and 40% of the sample reported both an isolated incident and additional trauma experiences that were repeated over time.

Nearly all participants agreed that having a mental health professional who understood trauma and offered trauma-informed interventions contributed to their healing. Additional elements, such as having a routine, healthy habits (eating, sleep, exercise), and social connection also contributed towards healing. Some participants came from a sports background, whereas others had no prior experience with exercise or sports. Many also spoke of coping mechanisms to deal with their trauma such as substance use, self-harm, and disordered eating patterns.

This study developed a grounded theory of weight lifting’s impact on healing from trauma. The theory revealed two themes: that past and current trauma experiences created relational and bodily disconnection and PTSD symptoms fueled by social isolation and sensory dysregulation. The second theme highlighted how the embodied experience of lifting weight, alongside a trustworthy coach/trainer, offered improved health (physical and mental health), a sense of empowerment, post-traumatic growth, and community connection to participants [Insert Fig. 1 here].

Trauma Fuels Disconnection In the current study, participants coped with overwhelming feelings secondary to trauma reminders through a disconnection from their bodies and the present moment.

“My coach asks me every time I pick something up, how does that feel? And I spent, like, years being like ..., I’ve no idea how that feels. I don’t know, like, I pick it up, it hurts. He’s like, where does it hurt? I’m like, well, I don’t know, back here or something. And I realized at

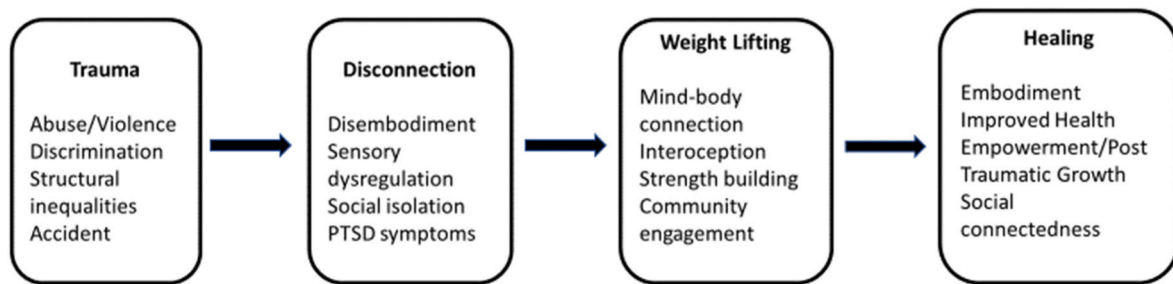


Fig. 1. Grounded theory of weight lifting as a healing strategy for trauma.

some point I'd completely disembodied myself. That I couldn't listen to where the specific pains were."

"I've heard a lot of people talk about, you're not in your own body anymore, you're not feeling that your jaw is clenching, and your throat is closing ... it is [disassociation] happening and it is absolutely painful when you realize it."

A repeated and chronic pattern of the dissociative response resulted in both physical injury and an exacerbation of mental health challenges. This was true for participants who struggled with exercising to the point of physical injury or exhaustion without awareness.

"One thing that's uniquely hard for people that have had a lot of traumas is that you kind of lose this ability of listening to your body ... tuning out messages ... I'm too tired, or I hurt too much to do this, or this feels good ... And sometimes that makes it hard to take care of yourself because you might exercise too much, you may exercise too little, because you're not feeling those cues yourself."

It was devastating to have gyms inaccessible during COVID-19. Participants spoke of feeling disconnection from their bodies, from others, and themselves. Losing access to a gym space (and often the community connection within a gym space) during COVID-19 created a disempowered loss of "strength" they had found in the gym. During this time and without the benefit of lifting weights, participants suppressed emotion and lost touch with their bodies.

"During COVID, I basically worked out in my house for three months, and I really hated it. And I was very afraid of losing strength. I think that was the biggest fear, like, more than anything else ... I just didn't want to lose strength because that was so much, like, what I felt like I gained."

"It is hard because ... I don't think I realized that it [the gym] was so important to my recovery until I stopped having access to it."

Additional barriers such as limited access to affirmative and inclusive gym spaces and the financial burden of gym membership prevented participants from lifting weights, and these experiences functioned as triggers for trauma responses and related symptomatology.

"I think about the toxic masculinity and the incredible fat and weight stigma that exists in weight lifting spaces as something that was incredibly hard on my body and really impeded healing."

"But I think one of my biggest roadblocks was cost; cost to join. You get what you pay for, and the gym is worth every penny, but it is also like a car payment. Like, EMDR is also one hundred fifty dollars a session. So, do I pay for the programming or is it a week of therapy? Like, how do I pick?"

Weight lifting Heals Trauma through Connection to Body, Self, & Community.

Weight lifting Heals trauma through ... the Embodied Experience.

As participants lifted weight, they spoke of feeling internal sensations as they moved against the resistance of the weight. Feeling the

weight and consciously paying attention to the contraction of muscles in connection with the breath allowed participants an embodied pathway to healing from trauma.

"I didn't realize how dissociated I was from my body. And a couple months into lifting, I started just noticing different muscles I have and understanding that my posture used to be dismal, but thanks to lifting, I'm upright and more confident."

"It [weightlifting] helps me be present and come in my body...when you're doing something challenging to your body, like lifting something so heavy ... the mind can just wander like crazy, but when you are doing it, you're like ... I have this weight that's so heavy, you just feel it."

Weight Lifting Heals Trauma through ... Improved Health.

Weight lifting contributed to improved physical, mental, and emotional health. Resistance training helped participants learn about their bodies due to focused awareness on form and breath. This was helpful as they were able to learn their abilities and physical limits, and this knowledge contributed to overall improved physical health.

"I've seen how much my mind has grown in terms of being able to tolerate that stress and being able to know, OK, today is a day where I feel really good and maybe I can push my body a little bit more. Or to, you know, know that I need rest, and that I need to lift a little bit lighter today. It feels like I have a much better ability to sense that and to feel that in my own body and to know when to push and when not to push."

"They [people with trauma histories] need to know that their body can be a safe space. And how to really take care of a body, I think so, from movement to, you know, nutrition to water to rest. I think that that those things all get mixed up in trauma in different ways. And so, that becomes important to learn how to connect with a body and how to take care of it."

The connection between the physical aspects of weight lifting and focused awareness reduced participants' symptoms of depression and anxiety. This enabled participants to use weight lifting as an effective coping skill and improved mental health.

"I've had dysthymia throughout my late adolescence and adulthood. This was really the first intervention that I felt like, wow, this actually creates a difference in my mood and my energy level."

"I don't have negative cognition going on when I'm weightlifting, so if I'm feeling not worthy or embarrassed or those sorts of things, that kind of goes away. And I'm focused on this part of my body, and this is what I'm doing, and I'm feeling good, and I'm recognizing those cues."

When the participants were able to make the connection between sensations experienced in the body and emotions, they were able to recognize things within themselves that they had not before.

“And for me it still really is the mental benefits, you know. I love lifting. And it is fun. And yeah, I’m strong, but that’s not, like, the full stop– getting strong. It shaped my personality and how I feel about life, and I’m happy most of the time. Which is great. I feel peaceful and happy, and I enjoy being alive. What more can you ask for?”

Weight lifting Heals Trauma ... through Empowerment.

In the current study, participants reported feeling increasingly empowered in their identities and in the expression of those identities. A common theme was how participants felt more empowered to resist cultural pressures to conform to normative gender stereotypes, particularly those related to the physical presentations of masculinity and femininity. Additionally, many participants reported becoming more proactive in making positive changes because of weight lifting.

“It is really absorbing. So, that’s great if you’re stressed out. And it helps you, it does, it helps feeling strong from the inside. It gives you this feeling of power. You do feel powerful and competent and capable, which is great. And you have belief in yourself because you’ve done things that are hard. You’ve done them, and you’re like, wow look at that.”

“And it just kind of carries over into your everyday life, like gosh, I’m so strong, like, in that moment. And then, I don’t know– it empowers you to feel strong in other moments, hard times in your life.”

Participants spoke of their ability to transform physical and mental challenges in their lives outside of the gym.

“When everything else could be falling around you, crumbling, or it might feel that way, lifting can be quite still– not that is always like a trajectory of a straight line, it is not, and you have setbacks and stuff– but you can see my strength is going up, you know. Everything is coming together ...”

“It feels like the resiliency that I feel in my body kind of carries over into the resiliency I feel in my mind. Knowing that I can do these really challenging things, and that I can use that same mindset to find my limits elsewhere ...”

Weightlifting Heals Trauma through Community.

Trauma survivors need support from friends, family, and the people around them. Participants spoke to how the gym community offered such support through social connection.

“I’ve made more friends, and I have friends who, like, really do check up on me. In the past, it is something in my depressive episodes, I’m like, nobody is checking up on me. Nobody cares. You know, there are all these thoughts of like, I’m a piece of shit, and that’s why nobody’s checking up and checking in on me. And it is like, no, it is having this little community. You know, the seven, eight friends that I have at the gym who are like, hey, dude, I haven’t seen you in a while. I haven’t heard from you, you know? So that it is, like, also improved my mental health.”

“It gives me social tools that I take elsewhere, but it is also really given me a safe haven where I feel really welcomed and wanted and included. And even if I don’t feel that way in other aspects of my life, I always feel that that sense of belonging when it comes to the gym.”

3. Discussion

This study uses Charmaz’s grounded theory to generate a theory that explains the processes and elements inherent in the weight lifting experience that facilitate healing from trauma. Findings revealed two themes: trauma experiences created relational and bodily disconnection fueled by social isolation and sensory dysregulation; and weight lifting provided opportunities for trauma survivors to safely explore the felt sensation in their bodies with the help of a coach/trainer, and thereby begin to construct a more coherent and contiguous sense of self, where

the impacts of traumatic experiences integrated into the self rather than denied or shunted aside. This in turn created opportunities for survivors to experience themselves as capable of healing and change in new ways.

Participants highlighted experiences of dissociation or disconnection from self as an outcome of trauma. According to physician-researcher and trauma theorist Judith Herman (2015), the core experiences of trauma are disempowerment and disconnection. During trauma, the body unconsciously moves towards survival and creates distance from experiencing overwhelming sensations and emotions. Over time, an automatic and often unconscious dissociative response developed. Although dissociation may be a helpful survival skill during and following experiences of trauma, it can have significant negative impacts on the quality of one’s life (Whitworth et al., 2019). This was true of participants who shared that trauma fueled disconnection with their bodies, particularly when their bodies had been directly involved in their traumatic experiences. Participants referenced experiencing significant challenges early in weight lifting and other movement practices and becoming dissociative because of both internal and external trauma reminders/triggers.

Barriers to lifting, such as limited access to affirmative gym spaces and cost also fueled disconnection. Cited examples included not feeling welcome or safe in certain gym spaces, feeling like an “outsider,” or someone who does not fit the normative typology of a weight lifter. Participants also shared how the experience of COVID-19 further exacerbated disconnection through isolation. The inability to be in a gym space furthered disconnection as they were separated from other lifters who were sources of support and connection. Community was cited as of vital importance to many lifters, both as a means of relational connection, encouragement, and support.

Weight lifting was a grounding experience that helped participants facilitate a more embodied presence. They were able to recognize the mind-body connection and use the embodied experience to positively influence their thoughts. Weight lifting is a felt experience that creates a unique way for people with past trauma to live in relationship with their own body (Whitworth et al., 2017). Interoception, or awareness of what is happening in the body, has the potential to influence the state of the mind (Khalsa et al., 2018). Participants spoke of the bodily awareness they developed through weight lifting as a mechanism that allowed them to transform physical experiences of strength into emotional and psychological experiences of empowerment. As participants improved their physical health, they were also able to improve their mental health as evidenced by the theme of improved confidence and self-efficacy. These findings support results of prior research which has shown the benefits of resistance training on mental and emotional health (Gordon et al., 2018).

The theory of weight lifting as a healing strategy highlighted specific elements of the lifting experience that created a new and successful way to heal from past trauma. Weight lifting provided participants with a sense of strength and power that they described as transformational. In fact, the theme of empowerment revealed how participants experienced themselves as stronger and more capable physically, emotionally, and spiritually; and how it inspired participants to challenge the status quo. This represents post traumatic growth (Tedeschi & Calhoun, 2004), where the individuals in the study used weight lifting as a coping strategy and the gym space as a social support to reshape the way that they perceived themselves, their lives, and their world.

The theory presented in this study affirms that people with unresolved trauma become disconnected from the felt sense of their bodies as a means of managing dysregulation and sensory experiences that can be experienced as somatic memories or trauma reminders (Bailey & Brand, 2017). Weight lifting can help persons with a trauma history learn to tolerate a physical experience by bringing greater awareness to the body in the present moment. Weight lifting requires self-control and mind-body concentration as the body is prepared, through a series of steps, for a particular lift or movement (Statler & Dubois, 2021). Weight lifting is a bodily-felt experience, meaning that it requires a degree of

interoceptive tracking as well as proprioceptive awareness to complete a lift both safely and successfully (Wallman-Jones et al., 2021). The narratives presented in this study suggest that weight lifting can guide people back into connection with their bodies by initiating interoceptive body awareness. By paying attention to thoughts, feelings, and bodily sensations as they are experienced, weight lifting created opportunities to make choices about how to respond with intention versus defaulting to more unconscious reactions. This study also supports previous findings that have demonstrated that participation in weight lifting can facilitate the development of interpersonal skills and lead to an increased interest in general health issues (Auchus & Kaslow, 1994), such as adapting healthier and more helpful coping mechanisms and decreasing the use of other coping mechanisms such as substance use or self-harm, which are often associated with trauma.

3.1. Limitations

Although this study contributes to understanding the role of weight lifting in healing from trauma, it is not without limitation. The study utilized a small sample with qualitative interviewing techniques as a single method to collect data. This suggests that the data collected and analyzed may not be generalizable to all persons who have experienced trauma and engage in weight lifting. Additionally, the study examined self-reported trauma history, rather than clinical diagnoses of PTSD. The results presented here are not intended to generalize but should be used in the development of new studies related to the themes found here, notably the experience of disassociation among trauma survivors and how the specific elements of the weight lifting experience (i.e. interoceptive body awareness, coaching, and community) can contribute towards healing and post traumatic growth. Of concern in the current study was the underrepresentation of cisgender men, transgender women, Indigenous, African American, and Asian people, and people with physical disabilities. Weightlifting programs are often compromised by unequal access, where cost prevents many from accessing its benefits. There is also concern with excessive exercise where persons in trauma recovery use rigorous exercise programs as a less desirable coping mechanism, as the competitive nature may fuel a more addictive behavioral pattern (Linke & Ussher, 2015). Further research should aim to validate the grounded theory presented here across settings, with larger sample sizes and explore the utility of the model when applied to historically underrepresented groups.

Because trauma affects every aspect of human functioning, treatment must be comprehensive. Treatment should holistically address the physical, emotional, and social components of healing. One goal of this study is to further develop a trauma-informed intervention manual for personal trainers, weight lifting coaches, and gym/fitness spaces that provide weight lifting training. Currently, training exists to support practitioners in taking a trauma-informed and anti-oppressive approach to their work with clients and athletes. This study provided rich opportunity to further expand training content and manuals influenced by exercise and trauma research, by becoming increasingly evidence-based and informed by lived experience. Future articles will further explore how this study is informing and influencing the expansion of trauma informed weight lifting training for coaches and trainers.

The data that support the findings of this study are available from the corresponding author, [ENS], upon reasonable request.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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