A qualitative secondary data analysis: Through the lens of the transactional model of stress and coping, effects of massage therapy as a complementary medicine alternative for individuals living with HIV/AIDS in Las Vegas, Nevada

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Abstract
Individuals living with HIV/AIDS experience increased physical and mental health challenges. Living with this chronic disease can result in stress and negatively impact mental health. Complementary and alternative medicine modalities may offer individuals living with HIV/AIDS added physical and mental health benefits. A qualitative secondary analysis research study using a data set from a Dr. Anne Weiseman dissertation research was conducted using the Transactional Model of Stress and Coping as a theoretical framework. This study framed the relationship between massage therapy, a complementary medicine treatment, and an individual's ability to cope with stress. Ten narratives originally transcribed from interviews conducted by Dr. Anne E. Wiseman: *Human touch: Perception of self-efficacy from a non-pharmacology treatment for individuals living with HIV/AIDS*, were utilized for this secondary data analysis. These previously collected interviews were analyzed based upon the Transactional Model of Stress and Coping. Participant narratives revealed a shared expression of positive change in emotional well-being and functional status after the massage treatment. The results suggest that massage therapy may have beneficial health outcomes as an alternative treatment for individuals living with HIV/AIDS.

Keywords: Qualitative, HIV/AIDS, Massage therapy, Complementary and Alternative Medicine

Introduction
People living with the Human Immunodeficiency Virus or Acquired Immunodeficiency Syndrome (PLWHA) may face many challenges in life that can adversely affect their health and quality of life. According to the World Health Organization (WHO) at the end of 2015, 36.7 million people were living with HIV and there were 1.1 million AIDS-related deaths across the globe (WHO, 2017). In the United States at the end of 2014, 1.1 million people above the age of 13 were living with HIV (Centers for Disease Control and Prevention [CDC], 2017) leading to detrimental health outcomes for millions of people. However, this incidence is not evenly distributed among the entire population (CDC, 2017); as with many diseases, there is a significant health disparity with HIV/AIDS in the U.S.

Nevada had a notably high rate of HIV diagnoses in 2015, with a prevalence rate of 20.1 per 100,000 people (CDC, 2017). The most recent data show that in 2014, 8,405 people were living with HIV in Nevada (AIDSVu, 2017). As with National trends, those who identify as Black/African American have the highest burden with diagnosis rates at 2.8 and 8.7 times that of white males and females, respectively (AIDSVu, 2017). Within Nevada, Clark County has the highest prevalence rate. In 2014, 407 per 100,000 people were living with HIV in Clark County, while Elko County had 57 per 100,000 (AIDSVu, 2017).

PWLHA's are predisposed to a weakened immune system because the mechanism for the virus is to destroy healthy immune cells leaving the host open to opportunistic infections (OI), such as pneumonia, tuberculosis, invasive cervical cancer, and lymphoma (CDC, 2017). Although OI are less common among people

living with HIV/AIDS (PLWHA) than when the condition was first observed, physical and mental health issues still persist and specialized needs among this population need to be considered (CDC, 2017). The National Institutes of Health (NIH) noted that people living with HIV/AIDS have higher rates of mental and physiological health conditions due to the added stress and treatment side effects (NIH, 2016).

While, PLWHA's are on antiretroviral therapies (ART) to manage the HIV infection, this form of treatment, frequently, has numerous physical side effects that can lead to or worsen mental and physical health challenges (Chen et al., 2013). This may include at an increased risk for insomnia, stress, anxiety, depression, and post-traumatic stress disorder that contributes to a decline in their quality of life (NIH, 2016). Additionally, impacts to mental health often are compounded by the diagnosis of a stigmatized chronic condition (Asch et al., 2003). Chronic pain is another factor that is linked to increased rates of depression in PLWHA (Uebelacker, Weisberg, Herman, Bailey, Pinkston, & Stein, 2015).

Since, Complementary and Alternative Medicine (CAM) is the incorporation of alternative treatments with Western medical therapies; which may include prayer, deep breathing, meditation, chiropractic adjustments, and massage (Ritter, 2010). In some cases, these CAM practices are known to replace Western medicine treatments and modalities (National Centers for Complementary and Integrative Health [NCCIH], 2016). According to the National Center for Complementary and Integrated Health (NCCIH), more than 30% of adults use a form of complementary medicine (NCCIH, 2016). National studies have estimated that 55% of PLWHA have a lifetime use of Complementary and Alternative Medicines (Lorenc, 2013). Caucasians, men who have sex with men, and individuals with higher income among PLWHA are the most likely to use a form of CAM (Littlewood & Vanable, 2008). Among PLWHA's, CAM has often been used to mitigate issues that arise from the use of ART (Lorenc, 2013).

Several studies have noted CAM use by individuals living with HIV have resulted in fewer depressive symptoms (Littlewood & Vanable, 2008). Researchers of one study found that users of CAM viewed living with HIV as more controllable (Littlewood & Vanable, 2008). Often the individuals who are living with HIV turn to CAM to gain control over their health in ways that may align with their personal views (Littlewood & Vanable, 2008). In addition, feeling as they have a perceived sense of control with regard to their health and stressors.

One widely used form of CAM is massage therapy. Massage is the manipulation of soft tissue of the body using pressure and traction (Ernst, 2008). The U.S. Department of Veterans Affairs defines massage therapy as a complementary therapy for PLWHA as a treatment where a "trained therapist moves and rubs [the participant's] body tissues." Research has shown that it can be useful for a variety of health issues, notably depression and immune conditions (Field, 2008).

A prospective cohort study analyzing the effects of rhythmic massage therapy among people with a chronic disease found that disease symptoms and quality of life were improved at six months and maintained to the end of the study (Hamre, Witt, Glockmann, Ziegler, Willich, & Kiene, 2007). In patients suffering from multiple sclerosis, massage therapy showed significant improvements to quality of life up to four weeks post-treatment but diminished shortly thereafter reinforcing the notion that massage therapy can be a continuously CAM strategy. Similar results were shown among patients treated for brain tumors, yet there was no follow-up in this study (Keir, 2011).

This secondary analysis study sought to identify how massage therapy influenced their coping mechanisms in regards to health benefits that improve PWLHA's quality of life. The purpose of this secondary data analysis was to utilize the Transactional Model of Stress and Coping framework to evaluate the process of enduring a stressful event (Glanz, Rimer, & Viswanath, 2008), such as living with HIV/AIDS, by

analyzing the shared experiences of PLWHA after receiving a massage therapy treatment.

The Transactional Model of Stress and Coping contends that when a person experiences a stressful event, an initial evaluation of the stress is conducted, the primary appraisal, followed by a self-evaluation of how one can alter the situation or manage negative emotional reactions, known as the secondary appraisal (Glanz et al., 2008). The actual coping efforts that one makes when trying to control the problem results in the outcomes of the coping process. These coping efforts can run along two different dimensions; problem management or emotional regulation (Glanz et al., 2008). Individuals that are dealing with chronic diseases, like HIV or cancer, most often use emotional focused coping strategies; these strategies tend to be directed at how one perceives the situation and manages emotions (Glanz et al., 2008).

Qualitative research may be a helpful to further understand the emotional and physical responses to stress within the context of living with HIV/AIDS. Qualitative research is an interpretive means of understanding lived experiences (Marshall & Rossman, 1999). Specifically, phenomenology method was used to capture the essence in which the phenomena, such as living with HIV/AIDS, shapes the people experiencing of wellbeing (Creswell, 2013). This was achieved by gathering primary interview data from several individuals that have a shared experience and then describing the essence of such said experiences (Creswell, 2013).

A phenomenological study conducted in Iran attempted to understand the experiences of Iranian citizens as they coped with living with HIV (Mohammadpour, Yekta, Nikbakht Nasrabadi, & Mohraz, 2009). Another phenomenological study explored the experiences of nurses that treat patients with HIV/AIDS in South Africa (Orban et al., 2010). Additional qualitative studies that utilized a phenomenological approach have provided insight into how individuals may experience day-to-day life when addressing a HIV diagnosis. Less is known about CAM's effect on coping mechanisms in those living with HIV/AIDS, therefore examining a CAM treatment of massage therapy may provide insight on stress coping mechanisms of individuals living with HIV/AIDS. The purpose of this secondary qualitative study was to identify how coping mechanisms based upon the Transactional Model of Stress and Coping interplayed with a massage therapy treatment for PLWHA's.

Methods

Study Design & Setting

The objective of this study is to understand the relationship between massage therapy for people living with HIV/AIDS and the ability of participants to cope with stressors that accompany living with a chronic disease. This study encompasses a secondary qualitative data analysis that utilized data originally gathered from the study, "*Human touch: Perception of self-efficacy from a non-pharmacology treatment for individuals living with HIV/AIDS,"* originally conducted by Dr. Anne E. Wiseman. A complimentary (no cost), one-hour massage therapy session was performed on all 14 participants. However, only 10 participants were interviewed by Dr. Anne E. Weiseman as 4 dropped out of the study. She is a licensed massage therapist, who conducted the massage session and collected original data at the Aid for Aids Nevada (AFAN) site. Research protocols for Dr. Anne Weisman were approved by the University of Las Vegas, Nevada Institutional Review Board (IRB # 804375-2); and informed consent was collected prior to massage and interview administration. The secondary analysis also obtained IRB approval through the University of Nevada, Las Vegas Institutional Review Board IRB # 1072294-1).

Participants

The secondary analysis used Dr. Weisman's original study transcripts which was comprised of seven male and seven female participants between the ages of 30 and 67. Since only 10 interviews occurred under the original study, the same transcripts were utilized for the secondary analysis. The coding constructs used to synthesize the data followed a thematic

sequence that reflected the Transactional Model of Stress and Coping in which to create thematic categories.

Data and Instrumentation

The research question that guided this study was: *How does massage therapy affect the stress coping mechanisms of people living with HIV/AIDS based upon the Transactional Model of Stress and Coping?* Questions posed to the participants in the original study, "*Human touch: Perception of self-efficacy from a non-pharmacology treatment for individuals living with HIV/AIDS,"* conducted by Dr. Anne E. Wiseman, were: (1) Have you ever had a massage? (2) If so, how was your experience? (3) If not, why not? (4) How did you feel while receiving the massage? (5) Did you notice any differences in your body following the treatment? (6) Did you notice any differences mentally following the treatment? (7) Did you notice any differences emotionally following the treatment? (8) Did you notice any differences spiritually following the treatment? (9) Did you experience any changes in sleep? (10) Did you experience any changes in appetite? (11) Did you experience any changes in other areas? (12) How do you think massage therapy could change the plans of care for individuals living with chronic diseases such as HIV/AIDS? Interviews were semi-structured and questions had additional probing questions to glean additional information contained in the transcripts. Based upon the original transcripts participant's volunteered in-depth narrative and the use of follow-up questions provided rich descriptive description.

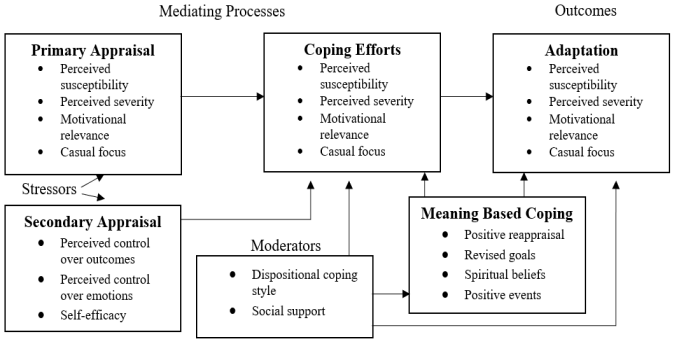
The interviews were transcribed from these questions in the original study underwent a secondary data analysis based upon the Transactional Model for the purpose of this study. To ensure reliability with the secondary data analysis for this research, utilized an intercoder to verify data analysis accuracy of codes and themes.

Transcribed interviews have been kept in a locked file cabinet at the University of Nevada Las Vegas (UNLV). Each transcription was given a pseudonym and numbered by the original researcher. All interview data has been kept confidential in accordance with UNLV IRB protocol.

Data Analysis

Data was coded for themes that emerged throughout the interviews in relation to the Transactional Model of Stress and Coping. Four themes from the model were identified and coded. Each stage of the model was used to identify themes in the narratives. Each coder developed codes and themes, and were then compared between the two coders. The Transactional Model of Stress and Coping was the guideline in identifying codes and themes from the interview transcriptions (Figure 1). The model frames stressors as a person to environment transaction. When an individual experiences a stressor they first undergo primary appraisal and then secondary appraisal. These were the first two themes identified in coding of the transcripts. The two appraisals provided a foundation towards coping efforts and outcomes.

FIGURE 1.

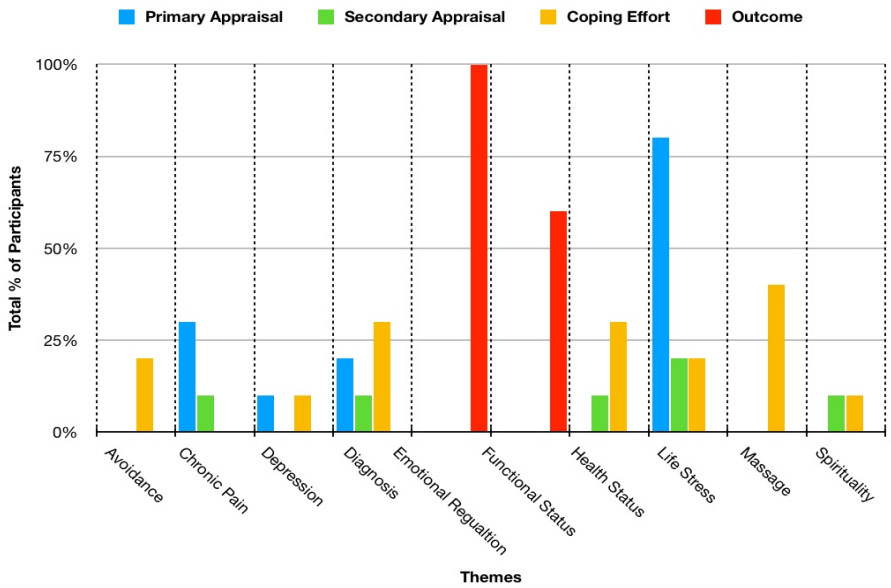


Note. Figure of the transactional model of stress and coping. Adapted from *Health Behavior and Health Education* (p. 216) by K. Glanz et al, 2008, San Francisco, CA: Jossey-Bass. Copyright 2008 by John Wiley & Sons, Inc.

Results

Four concepts of the Transactional Model of Stress and Coping were identified in each participant's narrative. These concepts included; primary appraisal, secondary appraisal, coping efforts, and outcomes. From these concepts ten unifying themes were identified. Figure 2 illustrates all themes identified under the four concepts of the Transactional Model of Stress and Coping. The most significant experiences described in the narratives of the participants were in the functional status with regard to outcomes. Participants described a shared experience of changes in emotional well-being after receiving one treatment of massage therapy. Participants described a change in functional status, with regard to chronic pain or improved health status post treatment. They also described various shared experiences in relation to general life stressors. Most participants expressed primary appraisals to general life stressors, some even describing coping efforts.

Figure 2.



Primary Appraisals

Eighty percent of participants discussed a form of primary appraisal in their narrative. The two most notable applications of these were perceived susceptibility and severity. In participant's stories, 60% described a form of primary appraisal about general life stressors, like health, finances, housing, and interpersonal instabilities. The stress of a living environment for Participant 1 stated:

> *It is really bad like I said, I live in a place where there is a lot of cut-throat people, and I am tired of it, (Participant 1).*

This participant described a level of coping effort here as an attempt to deal with a stressful living environment by moving away. Participant 5 recalled the action of primary appraisal in relating to general life stress and living with HIV.

> *But getting sick is on our minds 24/7 or passing it on to someone else but being able to experience something on an emotional level makes me feel good about myself. When being HIV and homeless and the way the world treats both, it was refreshing to feel something positive from the massage experience. (Participant 5).*

Participant 5 discusses how living with HIV creates a constant form of stress, the ability to stop worrying about sickness or exposing someone else to HIV day to day and moment to moment. Author Keir (2011), notes in past research how the parallels of massage among other chronic or terminal diseases is an intervention for improving quality of life. NIH brings to light that continuous constant stress for

individuals living with HIV (NIH, 2016) and high levels of stress can lead to the increased rates of depression and mental health problems.

General life stress described by the participants accounted for 30% of the primary appraisal stressors with regard to chronic pain. Participant 2 described the onset of chronic pain that comes and goes.

> *… I feel it coming, and it comes in a couple of days… I cannot even walk when it is like that. (Participant 2).*

Participant 1 added a description of chronic pain when asked about muscle tightness and feelings.

> *Some days more than others, some days I notice it, some days I do not. (Participant 1).*

The experiences described here relates back to the study of Uebelacker (et al., 2015), which included how a majority of participants expressed some level of chronic pain have shown a significant relationship in contributing to depression and a reduction in quality of life. Participants here may also be experiencing the same reduction in quality of life and increased rates of depression due to their chronic pain.

Secondary Appraisals

Forty percent of participants described some form of secondary appraisal. The two forms of secondary appraisal identified included perceived control over emotions and outcomes. Secondary appraisals were best described in terms of the following themes: life stress, spirituality, diagnosis of HIV, chronic pain, and overall health status. Participants described a feeling of no control over emotions or outcomes in terms of the identified themes. The most relevant theme discussed was secondary appraisal in relation to life stress. Participant 8 discussed a living situation with an abusive roommate. The participants' home environment resulted in feelings of no control over outcomes in terms of housing status. As Participant 1 explained,

> *God works in mysterious ways. Like, sometime, I Guess he will throw a curve ball at you and you just have to go through it and then things will mellow out. That's just life you know. (Participant 1).*

Having a lack of control was a significant contributor to increased stress and early death (Gonzalez-Mulé & Cockburn, 2017).

Coping Effort

Coping efforts are strategies used to mediate the primary and secondary appraisals (Glanz et al., 2008); terms of problem management or emotional regulation surfaced. The most identified theme in the narratives in terms of coping was the use of massages. Participant 6 discussed how the massages from someone was a form of emotional regulation. Plus, Participant 7 knew that massage therapy could be beneficial and actively looked for massage as a coping effort for problem management and emotional regulation once arriving at ANFAN.

> *I had inquired when I first came here, was there massage therapy because I knew massage therapy first hand, I knew the benefits of it. (Participant 7).*

These shared experienced correlate with studies like (Lorenc & Robinson, 2013) that indicated 55% of PLWHA use a form of CAM.

Outcomes

Three outcomes can occur after the primary appraisal, secondary appraisal, and coping efforts. Outcomes can be categorized by emotional well-being, functional status, or health behaviors (Glanz et al., 2008). One hundred percent of the participants discussed a form of outcome in their narratives. The two main themes identified where changes in emotional well-being and functional status. Emotional well-being as a narrative was seen in 100% of participants. Participant 9 stated, *"Oh I felt wonderful",* discussing how massage affects. Similar comments came forth by a majority of participants in relation to overall feelings of relaxation and joy. Their shared experiences were categorized as a change in emotional well-being. Participant 4 discussed how the dramatic chronic changes in post massage, *"Oh, I could walk without pain".* Similar experiences where also expressed by other participants in improvements of chronic pain or in health status. These shared experiences correlate with

previous studies conducted by Littlewood & Vanable (2008) and Uebelacker et al. (2015), which demonstrate how CAM can prove beneficial physically and mentally for PLWHA.

Discussion

The study offered a glimpse to identifying the usefulness of massage therapy to affect coping mechanisms for individuals living with HIV/AIDS through the framework of the Transactional Model of Stress and Coping. Perhaps the most interesting finding of this secondary analysis study was that one treatment of massage therapy provided participants with the experience of a shared change in emotional well-being and functional status. The implications for massage as an integrated treatment in conjunction with ART needs further research.

Providers that deliver services to people who are living with HIV/AIDS or those who are on the frontlines of first diagnosis may wish to integrate massage CAM therapy into current protocols. ARTs can prolong life but due to the severe side effects, the long term mental and health condition worsen for PLWHA (Chen et al., 2013). This study contributes to the understanding of how individuals living with HIV/AIDS may benefit from massage therapy as a CAM treatment and how long term coping with stressors from chronic disease might be elevated.

The research findings provide a brief understanding of how CAM might assist in increasing the quality of life for PLWHA's. Additional research should be conducted in an attempt to identify if outcomes for long-term and repeated treatment adds to elevating stressor associated with PLWHA. Since there was only one massage therapy session and one post-interview conducted as part of the original study, there is no way to ascertain how multiple follow-up sessions may influence stress changes and the quality of life among PLWHA based upon the Transactional Model of Stress and Coping.

Furthermore, the participants involved in the study were clients of AFAN. It may be helpful to know how these impacts translate to PLWHA who are not engaged in a support and advocacy service organization. As part of the development of this study, the original source, "*Human touch: Perception of self-efficacy from a non-pharmacology treatment for individuals living with HIV/AIDS,"* conducted by Dr. Anne E. Wiseman, was reviewed which may contribute to interpretive bias.

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