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Relationship Between Animal-Assisted Therapy and Hopelessness in Adolescents

Nicole Denzler
Walden University

Walden University

College of Social and Behavioral Health

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Nicole Denzler

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Review Committee
Dr. Shelli Friess, Committee Chairperson, Counselor Education and Supervision Faculty
Dr. Sidney Shaw, Committee Member, Counselor Education and Supervision Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2023

Abstract

Relationship Between Animal-Assisted Therapy and Hopelessness in Adolescents

by

Nicole Denzler

MA, University of Colorado, 2015

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Counseling Education and Supervision

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Abstract

This study involved determining if there was a statistically significant relationship between level of hopelessness among adolescents in the United States (U.S.) and animal-assisted therapy (AAT). The dependent variable was level of hopelessness, and the independent variables were age of participants, number of sessions, and time since last session. Participants for this study were adolescents between age 13 and 19 who had at least one AAT session. The sample size used for this study was 77 participants calculated through G* power. Erik Erikson's developmental theory and the human animal relation theory were used as theoretical frameworks for this study. The research question for this study was to answer if the number of AAT sessions, time since last session, and the participants age has a significant relationship with the level of hopelessness of the participant. The data were sent out in the form of a survey with a link and a QR code to open the survey. Participants answered the demographic questions along with Beck's Hopelessness Scale questions. The responses were then collected through Survey Monkey and uploaded to an Excel spreadsheet. The data was then upload to SPSS for analysis of responses. Results from this study support there is a significant relationship between level of hopelessness among adolescents and AAT. There was a statistically significant relationship with a p-value of .016 for number of AAP sessions. R-value indicated a negative correlation. The statistically significant value for number of sessions was $p = .017$. This quantitative study adds knowledge about mental health supports for adolescents in the U.S., and this information is important to both adolescents and their families, as well as the communities where they live.

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Chapter 1: Introduction to the Study

In this study, I examined relationships between number of animal-assisted therapy (AAT) sessions, time since last AAT session, and age with hopelessness among adolescents. Hopelessness is a key emotion and state of mind for adolescents struggling with mental health disorders such as depression, anxiety, and posttraumatic stress disorder (PTSD), as well as reducing severe symptoms such as suicide ideation. Results of this study could inform clinicians, schools, and families about effective treatments for adolescents with hopelessness. AAT may be a treatment that can reduce suicidality because hopelessness is commonly experienced with suicidality. In this chapter, I share background information, the problem statement, purpose of the study, research question, hypotheses, theoretical and conceptual framework, nature of the study, definitions, assumptions, scope and delimitations, limitations, and significance.

Background

Within the U.S., youth populations struggle to become healthy functioning adults, and the number of youths who do not make it to adulthood is increasing (American Academy of Children and Adolescent Psychiatry [AACAP], 2018). Not only is suicide the second most leading cause of death for children and adolescents between 15 and 24, those who attempt suicide also have mental health disorders such as depression (AACAP, 2018). While there are many modalities and techniques that support the mental health of children and adolescents, suicide rates continue to increase. The AACAP (2018) stated specific factors or indicators that are associated with suicidality in addition to depression include family history of suicide, exposure to violence, impulsivity, aggressive or

disruptive behavior, access to firearms, bullying, feelings of hopelessness or helplessness, and acute loss or rejection.

In my review of literature, there is no information regarding influence of AAT on hopelessness among adolescents. AAT is related to improvements regarding depression, anxiety, PTSD, and behavior struggles (Altschuler, 2018; Firmin et al., 2016; Hoagwood et al., 2017; Jones et al., 2019; Nimer & Lundal, 2007; & Signal et al., 2017). There are no quantitative studies that examine use of AAT and hopelessness with adolescents.

Problem Statement

Mental health of adolescents is important for a functioning society. The AACAP (2021) suggested the more stable mental health is for adolescents, the more stable the mental health of adults in U.S. society. Okwori (2022) estimated the mental health of adolescents falls between 13% and 20% of the U.S. burden of mental health struggles. Within the U.S., approximately one in five children and adolescents experience a mental disorder each year; approximately two in five children and adolescents meet criteria for a mental disorder by 18, and 50% of mental disorders have an onset before 14 (Bitsco et al., 2022). Moreover, suicide is the second leading cause of death for children, adolescents, and young adults in the U.S. (AACAP, 2018). Chandler (2018) created the human-animal relational theory (HART) to support use of AAT as a modality to support mental health. The development of this theory shares rules and guidelines for clinicians that use AAT. There are also studies regarding suicide ideation in the U.S. adolescent population. I aim to fill a gap in literature by examining whether number of AAT

sessions, time since last AAT session, and age have a significant relationship with hopelessness among U.S. adolescents.

Purpose of the Study

The purpose of this quantitative study is to determine if number of AAT sessions, time since last AAT session, and age have a significant relationship with level of hopelessness in adolescents.

Research Question and Hypotheses

RQ: Does number of AAT sessions, time since last session, and age have a significant relationship with hopelessness among adolescents?

H_0: Number of AAT sessions, time since last AAT session, and age do not have a significant relationship with hopelessness among adolescents.

H_a: Number of AAT sessions, time since last AAT session, and age do have a significant relationship with hopelessness among adolescents.

Theoretical Framework

There were two theories used as the foundation for this study: Erik Erikson's psychosocial development theory and HART. Brisko et al. (2022) found 36.7% of U.S. adolescents between the ages of 12 and 17 reported persistent feelings of sadness and hopelessness. The developmental stage, from Erik Erikson's theory, the participants in this study were in the identity versus role confusion stage. Each adolescent develops on their own timeline and the stage of development they are in has influence in terms of how they may respond to life events during their adolescent years, such as feeling hopeless. There are fundamental connections between humans and animals that are important to

understand when AAT is used. The HART allows clinicians, clients, and researchers to remain cognizant of this connection between humans and animals. The HART theory provides guidelines and support to how best use AAT among the different stages of development.

The first theory is Erikson's psychosocial development theory. Erik Erickson's theory provides eight different stages of development for humans and how we view and interact with ourselves and others in each stage. The developmental stage that applies to this study is identity versus role confusion. Identity versus role confusion happens between ages 13 and 19 and involves merging of sensory, logical, and aesthetic perceptions (McLeod, 2018). This is the stage during which adolescents are trying to figure out who they are and how they fit among their peers.

The second theory is the HART developed by Cynthia Chandler. Chandler (2018) stated "[the] HART is a theory that explains how AAT in counseling is effective and serves to guide for practice and supervision" (p. 1). HART theory breaks down the different stages of treatment and the different types of interactions between humans and animals. The goal is to have many relational moments (RMs) between the animal, the clinician, and the client. The HART not only provides guidelines for counselor and client interactions but also interactions between counselors and animals and clients and animals.

Understanding adolescents' life developmental stage helps provide a foundation in terms of how they process and understand the world. This understanding helps ground research involving how adolescents process and develop hopelessness. As human emotions are absorbed and understood differently in each stage of life. The HART helps

ground research in ethical and moral foundations when using AAT. HART gives ethical guidelines and suggestions on how to run a session with humans and animals. With use of animals, safety for clients, therapists, and animals are all important. The HART helps guide and support importance of ethical behaviors and techniques for AAT. Techniques about how to help the client interact with the animal, how the animal interacts with the client, and how both the client and animal interact with the clinician.

Nature of Study

I used the quantitative survey design to examine relationships between number of sessions of AAT, time since last session, and age (independent variables) and hopelessness (dependent variable) as measured using Beck's Hopelessness Scale and a demographic questionnaire. Beck's Hopelessness Scale is an academically and data supported assessment that helps determine the level of hopelessness. It consists of 20 scored questions to determine level of hopelessness.

I used a quantitative research design with multiple regression analysis to measure three independent variables. The survey research design is an efficient way to collect answers from participants. Multiple regression analysis involves testing relationships between multiple variables. Multiple regression with more than two independent variables can determine outcomes of the dependent variable (Warner, 2013). In this study, the dependent variable was hopelessness, and independent variables were number of AAT sessions, time since last session, and age. Multiple regression can be used to determine if independent variables have a statistically significant relationship with hopelessness.

For this research, the Beck Hopelessness Scale and a demographic survey were used. Via SurveyMonkey, I provided parent consent forms, adolescent assent forms, demographic questionnaires, and the Beck Hopelessness Scale. Participants completed all sections of the survey and submitted information directly to me. Data were then collected in a password-protected Excel spreadsheet that was uploaded into the Statistical Package for the Social Sciences (SPSS) statistical software package to run and analyze the multiple regression tests.

Definitions

Animal-Assisted Therapy (AAT): "Facilitation of human-animal interaction for the purpose of providing opportunity for therapeutic relational moments to occur between therapy animals, counseling participants, including client and counselor" (Chandler, 2018, p. 431).

Hopelessness: "The feeling that one will not experience positive emotions or an improvement in one's condition. Hopelessness is common in severe major depressive episodes and other depressive disorders and is often implicated in suicides and attempted suicides" (American Psychological Association [APA], 2020, p. 1).

HART: Human-animal relational theory. Provides a framework for recognizing and valuing the contribution of a therapy animal to the social dynamics of counseling and enhancing potential therapeutic impact of human-animal interactions (Chandler 2018, p. 432).

RM: Relational moment. Any moment when an animal is interacting with or having an effect on a person in a session (Chandler 2018, p. 432).

SHARM: Significant human-animal relational moment. Any significant moment when an animal is interacting with or having an effect on a person in a session. This moment stands out as potentially having a significant impact on a person in a session (Chandler 2018, p. 432).

HARP: Human-animal relational processing. Internal and/or external processing of a SHARM by a counselor and/or client. Processing involves consideration of the meaning of a significant relational moment with an animal and how the moment may impact a person in a session (Chandler 2018, p. 432).

Assumptions

An assumption of this study was that participants were treated by licensed and certified clinicians as well as capable of implementing AAT in the correct ethical manner. As the researcher, I also assumed participants answered questions truthfully. Additionally, I assumed participants understood questions on Beck's Hopelessness scale and demographic questionnaire.

Scope and Delimitation

Adolescents participating in this study were between 13 and 19. Participants completed at least one session of AAT. I link and QR code to the survey was provided via email and on AAT social media cites. Participants lived within the U.S. There was no personal information shared in surveys, and all responses were anonymous. A $10 gift card to Amazon was offered to participants via email. I am the only individual who has access to surveys as well as the only individual who entered and processed data. All participants were adolescents who have worked with an AAT therapist.

Limitations

Often in social sciences, it is difficult to obtain a truly random sample because there are existing limitations to the study and ability to have access to the entire population (Rudestam & Newton, 2015). The most reliable and valid type of sampling is random sampling, and if a random sample cannot be attained, then a systemic sample would be the convenience sample (Creswell & Creswell, 2018). For this study, I used convenience sampling. The participant pool for this research was restricted to adolescents who have already participated in AAT and were willing to participate in the study. There was the potential for selection bias as those individuals who did not have access to the Internet would not be aware of the study. Often when working with high-risk populations such as adolescents, it can be more challenging to attain enough participants. Guardian permission is required for these participants, and this could have restricted the number of adolescents who participated. Participants did not complete the same number of sessions. This is a variable that was tracked to determine if there is influence between the variables. Another limitation is that participants only reported one point in time, so I did not have the ability to determine any causality or predictability between AAT and hopelessness, only if there was a relationship. This study is also susceptible to nonresponse bias and recall bias because the participants may not recall all their sessions and treatment 100% accurately. For this study, a G*Power calculation was done, and the minimum number of participants needed for this study was 77.

Significance

There are many qualitative and quantitative studies supporting use of AAT for many behavior and mental health challenges, such as anxiety, depression, PTSD, and behavior challenges among adolescents. There are multiple randomized controlled studies providing support that there are positive affects for AAT in terms of behavioral and mental health conditions such as attention deficit hyperactive disorder (ADHD), autism spectrum disorder (ASD), PTSD, and behavioral struggles. There are currently no studies about use of AAT with hopelessness and adolescents.

This study involved determining if number of AAT sessions, time since last session, and age had a relationship with hopelessness among U.S. adolescents. This study could potentially lead to increased knowledge within the mental health field about relationships between AAT and hopelessness and inform treatment for adolescents experiencing hopelessness. Schools, hospitals, clinics, and homes will have another supporting tool that can hopefully contribute to reductions in the number of suicides and mental health challenges within this population. When they are struggling, they need the mental health support to maintain their physical, mental, and behavioral health.

This study provided new information regarding number of AAT sessions, time since last session, and age as it relates to hopelessness. The World Health Organization (2021) claimed depression is one of the leading mental illnesses, and suicide is one of the leading causes of death in adolescents between the ages of 15 and 19. One of the major contributing symptoms of suicide and depression is hopelessness. This study contributed to the mental health field knowledge base regarding the relationship between hopelessness among adolescents and age, number of sessions, and time since last session

of AAT. This study helped bridge a gap between AAT and hopelessness to allow more studies to occur and determine if the study can be generalized to the larger population, not only the United States but other countries as well.

Summary

In this chapter, I reviewed contextual and key factors. I analyzed if number of AAT sessions, time from last session, and age may have a relationship with level of hopelessness among adolescents in the U.S. The U.S. adolescent population is struggling with mental health, and they need more effective and useful supports to help them improve their mental health and lives. In Chapter 2, I review the history of AAT and how animals became a partner in the mental health field. I also discuss the current state of mental health struggles for adolescents and break down how number of AAT sessions, time since last session, and age influences adolescents' mental health.

Chapter 2: Literature Review

The purpose of this study was to gather and assess the relationship between number of AAT sessions, time since last session, and age and hopelessness within the U.S. adolescent population. In this chapter, I address theoretical frameworks for the study. I then address the literature search and terms. Then I address variables of the study.

Within the U.S., among high school students in 2019, 36.7% reported persistently feeling sad or hopeless in the past year, and 18.8% had seriously considered attempting suicide (Bitsko et al., 2022). According to the AACAP (2021), suicide has become the second leading cause of death for children, adolescents, and young adults. Jones et al. (2022) shared possible factors that may contribute to the increase of mental health challenges and suicide ideation include the economic recession of 2008, climate change, fear of school shootings, prohibitive costs of college, struggling to imagine the future, inadequate mental health screenings, poor access to mental health, social media, and stigma in terms of seeking out mental health support. Jones et al. (2022) shared the COVID pandemic is also a contributing factor. There is not enough research to support a definitive reason, but there are many factors that have potentially contributed to this increase in suicide and mental health disorders for adolescents. One of the most consistent feelings associated with suicide ideation, depression, anxiety, and ADHD is hopelessness. The APA (2020) defined hopelessness as, “the feeling that one will not experience positive emotions or an improvement in one’s condition. Hopelessness is common in severe major depressive episodes and other depressive disorders and is often implicated in suicides and attempted suicides” (p. 1).

Literature Search

For this study, searches for both social science and counseling databases were done. I used the following databases: PsycINFO, SAGE Journals, SocINDEX with full text, Taylor and Francis Online, and Academic Search Complete. I used the following search terms: *animal, dog, canine, nonhuman, pet, human-animal, animal-assisted, animal intervention, counselling, counseling, intervention, learning, psychotherapy, therap*, mental*, emotion*, behavior*, behaviour*, hopelessness*, affect*, empath*, trauma*, youth, young person, teen, adolesc*, child*, single time point, mental health, mental illness, mental disorder, psychiatric illness, human animal relationships, mental health,* and *physical health*. All sources were published between 2000 and 2022.

Theoretical Foundation

Psychosocial Development Theory

There are two theories I used as the foundation for this study. The first theory is Erikson's psychosocial development theory. There are eight stages from infancy to adulthood. The stage that was most important for this study was identity versus role confusion.

Erikson's psychosocial developmental theory emphasizes the importance of going through each stage successfully to produce a person who is healthy and develops a positive sense of self. When people get stuck in a specific stage this can cause struggles in their psychosocial development. The stage in particular that I focused on was identity versus role confusion. This stage lasts between ages 13 and 19, and it is the stage during which adolescents search for a sense of self through exploration of personal values,

beliefs, and goals (McLeod, 2018). Inferiority versus role confusion is the stage during which they learn who they are and where they fit in society (McLeod, 2018). Bitsko et al. (2022) found U.S. adolescents between 12 and 17 have a one in four chance of mental health struggles. An estimated seven in 100,000 adolescents between the age of 10 and 19 died by suicide in 2018 and 2019 (Bitsko et al., 2022). During adolescent years, trauma, and resiliency to overcome struggles varies regarding age because their understanding of mental health is affected by environment and personal exposures in life (Chung et al., 2015, Lahad & Leykin, 2010, Bottche et al., 2012).

HART

The theory developed by Cynthia Chandler is the HART. Chandler (2018) said "I developed HART to guide the practice and supervision of AAT-C in the counseling field" (p. 432). The HART not only lists out guidelines for counselor and client interactions but also interactions between counselors and animals, and clients and animals.

There are two biological systems at work when humans and animals (specifically dogs) interact: the social response system and stress response system (Olmert, 2009; Odendaal & Meintjes, 2003). The social response system triggers hormones that promote connections between animals and humans such as dopamine, endorphins, and oxytocin (Odendaal & Meintjes, 2003). The stress response system has a similar biological response, and stress hormones are produced such as aldosterone, cortisol, and adrenaline when animals or humans feel distressed or threatened (Panksepp, 2004, 2005). In addition to biological aspects of human and animal relationships, there are other bonds

that are important to mention. Humans and dogs have a particular shared ability to bond as they are both species that encourage and need social systems and interactions (Chandler, 2018).

Counselors are responsible for recognizing and then processing these experiences with clients. As they assess and progress through the steps outlined in HART, they identify if hopelessness is an area of struggle for clients. Significant therapeutic moments result when clinicians can start to assess clients for depression, anxiety, PTSD, or suicidal ideation. The HART is a guide for counselors to use to facilitate and process human-animal interactions which results in therapeutic impact and improvement (Chandler, 2018).

Otting and Chandler (2021) found the HART has four key components that supports and guides the counselor, client, and animal interaction. RMs, SHARMs, and HARPs are present during sessions that are initiated by clinicians, clients, and the animals (Otting & Chandler, 2021). When these interactions occur, this is activating and carrying out AAT.

Variables and Concepts

Number of AAT Sessions

Zhao et al. (2021) indicated AAT improved communication and behavior changes ($p < .05$). Pendry et al. (2014) also showed a moderate improvement ($p = .02$) on social and behavior skills with the use of AAT. Schuck et al. (2015) had significant results from a 12-week study ($p < .001$) with ADHD, anger, and self-regulation behaviors (Schuck et al., 2015). Overall, the number of sessions is determined by the trained mental health

worker while balancing the health and wellbeing of what the animal can handle (Chandler, 2018).

The International Association of Human-Animal Interaction Organization (IAHAIO) is an international group that provides guidance and recommendations for care, treatment, and welfare of animals. One of the variables I will track is the number of sessions of AAT. To maintain safety of the animal and the client the number of sessions and time spent with animals is an important factor. IAHAIO (2021) does not have a specific number of sessions recommended however they do recommend a specific time:

> We suggest 45 minutes as the maximum length of a session, no more than three sessions per day and the dog should be given a minimum of 10 minutes break after each session with a duration of 20 minutes or more. We recommend that no more than nine sessions per week should be scheduled. Duration will depend on the intensity of the visit, and the capacity of the animal. Animals should not be forced to work a minimum amount of time (p. 5).

This is information to consider when the clinician is planning AAT sessions with the client. The wellbeing of the animal is an important influence over scheduling sessions.

Time Since Last AAT Sessions

The second independent variable for this study is how long it has been since their last AAT session. Schuck et al. (2015) found that use of AAT was significant improvement in behaviors for the experiment group that received AAT, $F(1, 19) = 18.44$, $p < .001$. This study also included a 6-week follow-up assessment with no significant difference between post-treatment and follow-up treatment. Indicating that the

adolescents-maintained durability effect after 6-weeks (Schuck et al., 2015). Gabriels et al. (2018) completed a study with horseback riding and youths with Autism Spectrum Disorder (ASD) where they included a six month follow up measure. The two variables measured by two-sample t-test or chi square test were irritability and social/communication improvements, the outcome analysis used a linear mixed effects model (LMM) where irritability showed improvement, but was not significant (effect size = .32, p = .07) social/communication skills also showed improvement but not at a statistical level (Gabriels et al., 2018). The importance of how long after AAT is complete the effects last is an important area to gather data.

Age

Mental health challenges and struggles are important to recognize and treat as early as possible, symptoms are often present during childhood and adolescents but are not addressed (National Institute of Mental Health [NIMH], 2019). Different stressors experienced in childhood and adolescents such as divorce, poverty, school transitions, community and world disasters, and unstable home are all chronic contributors that impact adolescents inversely at different ages (Bluth et al., 2017). Bluth et al. (2017) shared that during middle school and high school stages emotional well-being continues to evolve. As children and adolescents increase in age and enter different developmental stages, they may start to develop identity confusion which impacts self-esteem and can be connected to depression, substance use and risky sexual behaviors (Foto-Ozdemir et al., 2016). Childhood and teenage years are when most mental health struggles start, and it is important to pay attention and address these early on when the first signs happen (APA,

2021). The interest in hopelessness and adolescents has been an ongoing interest for all ages of adolescents. Umlauf at el. (2015) completed a study that showed a statistically significant relationship between levels of hopelessness ($p < .05$) and age in a study done with adolescents in impoverished communities.

Hopelessness and Connection to Other Mental Health Disorders

The Centers for Disease Control and Prevention (CDC, 2021) stated "that mental disorders are described as serious changes in the way children typically learn, behave, or handle their emotions, which cause distress and problems getting through the day" (p. 1). Additionally, anxiety, depression, oppositional defiant disorder (ODD), conduct disorder (CD), attention-deficit/hyperactivity disorder (ADHD), and post-traumatic stress disorder (PTSD) are among the most common mental health disorders that children and adolescents struggle with (APA, 2019; Bitsko, 2022; Bluth et al., 2017; Foto-Ozdemir, 2016; Russel & Odgers, 2019; Van Droogenbroeck et al., 2018; Vitztum, 2016).

Foto-Ozdemir at el. (2016) shared that there are many internal and external factors such as gender, age, academic problems, interpersonal relationship problems, stressful life events, socio-economic level, chaotic environment, loss of parent, divorce, low self-esteem, inability to problem solve, hopelessness, and psychiatric disorders. Within the United States these statistical facts are larger than the world numbers. According to the Substance Abuse and Mental Health Services Administration (2020), 49.5% of adolescents show symptoms of a mental disorder, of those 22.2% were considered to have a severe mental disorder according to the DSM-5 criteria. Researchers support that if these mental health issues are not addressed during teen years, preferably

when they start, they will potentially carry over into adulthood, if they live to adulthood (APA, 2019; Van Droogenbroeck et al., 2018). Bitsko et al. (2022) shared that depression and anxiety has continually increased since 2003.

As the mental health of adolescents continues to increase so too does the suicide rate among this population. The suicide rate for adolescents and young adults from age 10 – 14 has increased since 2007 by 57.4% (Curtin, 2021). One of the top leading causes of death worldwide and within the United States for adolescents is suicide (WHO, 2021; CDC, 2021). A consistent symptom among adolescents struggling with mental health and suicide is hopelessness (AACAP, 2018; Foto-Ozdemir, 2016). Wolfe et al. (2019) conducted a study that revealed hopelessness and suicide ideation to have a positive statistically significant relationship ($p = .0027$). Another study revealed that suicide ideation was significantly associated with depression ($p = .00$) and hopelessness ($p = .00$) (Hewitt et al., 2014).

AAT

The use of AAT has been a modality to help support the mental health of children and adolescents (Chandler, 2018). According to the World Health Organization (2021), "half of all mental health conditions start at age 14 but most go undetected…the consequences of not addressing adolescent mental health conditions extend into adulthood, impairing both physical and mental health" (p. 1). The youth in society are struggling to become healthy functioning adults, the number of youths that do not make it to adulthood is increasing. Not only is suicide the second most leading cause of death for children and adolescents ages 15 – 24, but typically those who attempt suicide experience

depression and hopelessness (AACAP, 2018). While there are many modalities and techniques that support the mental health of children and adolescents, the suicide rates continue to increase. Specific factors or indicators that are associated with suicide in addition to depression are: family history of suicide, exposure to violence, impulsivity, aggressive or disruptive behavior, access to firearms, bullying, feelings of hopelessness or helplessness, and acute loss or rejection (AACAP, 2018).

AAT began with Levinson (1997) when he brought his dog with him to work with clients. Since Levinson, there have been many studies done to further enhance the support of AAT (Altschuler, 2018; Firmin et al., 2016; Hoagwood et al, 2017; Jones et al, 2019; Laux et al, 2014; Nimer & Lundal, 2007; & Signal et al., 2017). There are many different modalities and techniques that counselors use to help support the mental health of children and adolescents. Solution Focused Therapy, Cognitive Behavioral Therapy, Dialectical Behavioral Therapy, Play Therapy, Art Therapy, are all examples of modalities that have data to support that they help improve the mental health for children and adolescents (APA, 2021). AAT can be used with any theoretical approach. Jenkins et al (2014) support that AAT shows the three main factors of Rogerian Theory, congruence, empathy, and unconditional positive regard. Animals in AAT work as a therapeutic agent for the counselor to help develop a human-animal bond with specific intentions and care plan (Stewart et al., 2013). Many researchers recommend that AAT is a modality that involves a credentialed or licensed counselor who guides the interactions between a patient and an animal to attain treatment goals (Chandler, 2018; Hoagwood, et al., 2017; Hartwig & Smelser, 2018; Nimer & Lundahl, 2007).

Hartwig and Smelser (2018) indicate that practitioners and clients encourage the use of AAT, and provide support that AAT is a useful tool or modality. Counselors that use AAT show that AAT improves positive behavior patterns, trust, caring for others, empathy, cooperation, and responsibility (Altschuler, 2018; Chandler, 2012; Firmin et al., 2016; Hartwig & Smelser, 2017; Hoagwood et al., 2017; Jenkins et al., 2014; Nimer & Lundahl, 2007). Hartwig and Smelser (2018) found that clinicians support that AAT is beneficial with reduction of symptoms and improvement of symptoms for clients ages 4 – 66, especially in areas of depression, anxiety, trauma, grief and loss, and abuse. Many studies have also shown the positive effects of AAT with at risk children and adolescents. AAT has not only been hypothesized to help with mental disorders but also children with behavior challenges ($F (1, 19) = 18.44$, $p < .001$), ADHD ($F (1, 112) = 22.248$, $p < .001$), and autism ($F = 38.874$, $p < 0.05$) (Schuck et al., 2015; Pendry et al., 2014; Zhao et al., 2021 & Altschuler, 2018). Maoz et al. (2021) share AAT not only helped improve symptoms with a group of 53 adolescents ($F (1, 58) = 125.2$, $p < .0001$) of PTSD but also provided data supporting the improved symptoms maintained 12 months post treatment. Moaz et al. (2021) found that there is statistically significant improvement ($p < .026$) 12 months following the treatment. In my review of the literature there are no studies with information regarding the use of AAT and hopelessness. Feng et al. (2021) conducted a meta-analysis in regard to the effects of AAT on children and teenagers in hospitals and determined that there is a statistically significant relationship between AAT with pain reduction ($p < .001$), anxiety ($p = .02$), and depression ($p = .03$) there was no statistical significant relationship between AAT and stress ($p = .74$), blood pressure ($p = .10$),

diastolic blood pressure (p = .97), and heart rate (p = .11). The intent of this study is to help determine if there is a statistically significant relationship between the number of AAT sessions, time since last session, and age with hopelessness in adolescents. To help measure and determine the data of this study a quantitative survey research design will be done with the use of multiple regression measurement to process the data. In chapter three I will address these areas.

Human-Animal Relationships

Human-animal relationships have been around as long as humans and animals have been on earth. Moreover, since the late 1970's scientific evidence supports a positive effect on both physical and mental wellbeing (Wells, 2019). There are millions of people around the world that own animals that have reported that their relationships with their animals improves their physical health, relationships and social interactions, stress reduction, companionship, tactile gratification, comfort and safety, and feelings of purpose and importance (Hui Gan et al., 2020; Shoesmith et al., 2021; & Wells, 2019). Shoesmith et al. (2021) discovered animal at home helped them improve their mood, reduce stress, and encouraged a continuation of purpose and routine. All ages of human beings from young babies and children (Wells, 2019) through older adults (Genieve et al., 2020) make connections and benefit from positive hormonal reaction and tactile and visual stimulus that helps improve mental and physical wellbeing.

Summary

In this chapter I explained the details about the history of hopelessness among adolescents in the U.S. This chapter also provides the terms for the literature search. The

details about the theoretical foundations of Erik Erikson's development theory and HART theory used for the study. This chapter also reviews all the variables and the literature about hopelessness and mental disorders, AAT, and human-animal relationships. The next chapter is about the methodology of the study.

Chapter 3: Research Method

The purpose of this quantitative study was to determine if number of AAT sessions, time since last AAT session, and age have a relationship with hopelessness among U.S. adolescents. These are all variables that have the potential to impact hopelessness. In this chapter, I provide an explanation of the research design and rationale, methodology, data analysis plan, threats to validity, and a summary.

Research Design and Rationale

The dependent variable for this study was hopelessness. The independent variables were number of AAT sessions, time since last AAT session, and age. The research design for this study was a single point in time research design which included a 20-question online assessment and seven questions to collect demographic information. Single point in time studies allow for low risk of ethical difficulties and help create additional in-depth research studies (Wang & Chang, 2020). I sent a QR code and a link for the survey that began with informed consent forms to participants via email and social media. I collected and entered data into SPSS. I used multiple regression to determine if number of AAT sessions, time since last AAT session, and age had a relationship with level of hopelessness. I ran a multivariate analysis. Time and resource constraints are directly related to number of participants that are needed to make sure the study is valid. How much time it will take for the participant to complete the study and if they have resources to access the study. I conducted a G*Power sample size calculation for this study, and 77 was the minimum sample size to maintain adequate power. I contacted numerous clinicians and facilities that already used AAT and sent out recruitment emails

with links to surveys to forward to possible participants. I also reached out to universities that use and train counselors in AAT for possible participants. There are also AAT support social media sites where I posted invitations to participate in the study. I then provided recruitment emails with links to surveys for any adolescents who wanted to participate. The amount of time it took for participants to respond was another time constraint. The participant needed enough time to complete the full survey. This study will contribute to and enhance clinicians and clients knowledge of AAT in that there is a limited statistical data supporting use of AAT with adolescents. There are no quantitative studies that examined number of AAT sessions, time since last session, and age in relation to hopelessness. This study presents an opportunity to determine if there is statistical support to show that number of AAT sessions, time since last session, and age have relationships with hopelessness among adolescents.

Methodology

Population

The population for this study is adolescents between the ages of 13 and 19. They all participated in at least one AAT session within the U.S. The minimum number of participants for this study was 77.

Sampling Procedures

I used a nonprobability sampling technique with voluntary response sampling. I reached out to AAT clinics and facilities and requested that they post or forward the study invitation to possible participants. I also reached out to AAT groups on social media sites to invite them to participate in the study. A strength of voluntary response

sampling is that data are easy and convenient to gather. I sent out an invitation to participate in the study via a SurveyMonkey link. I used SurveyMonkey to include a consent form for parents or guardians to sign, as well as a second assent page for adolescents to sign. This was followed by seven demographic questions and then the Beck Hopelessness Scale with 20 questions. If they wanted the $10 gift card for participation, they had to provide an email at the end of the survey. A disadvantage of voluntary response sampling is that the researcher does not have any control over who will respond or how many. Therefore, data could have any number of unknown outcomes. For this study, clinics and facilities that already use AAT were included in the sampling group. Parents and guardians completed their consent forms, then participants completed their assent forms, and then continued to complete demographic questions and then finally the survey. Parent consent and participant assent forms were included at the beginning of the survey so they could read about study and give consent before starting the survey.

As this is an online study, the act of moving forward in the survey was the consent necessary to collect their responses. If participants had questions or needed support after completing assessments and questionnaires, my email was provided along with the name and phone number of Walden University's Institutional Review Board (IRB) representative. All participants were adolescents between 13 and 19 and completed at least one AAT session. If the survey was not fully completed, it could not be included. If participants decided at any time that they no longer wanted to participate, then their survey would also not be included. For this study, a G*Power analysis was completed to

determine minimum number of participants that was needed for this study. G*Power was calculated with a medium effect size of 0.15 and an alpha error of 0.05. The number of independent variables for this study is three. The power beta error problem is 0.80 with a sample size of 77. Therefore, for this study to have validity, I required at minimum 77 participants.

Procedures for Recruitment, Participation, and Data Collection

The recruitment process for participants started with an email and posting recruitment information to clinicians, instructors, and social media sites sharing information about the study. Within the recruitment email was the link to the survey so that any participants who wanted to participate could click on the link. A QR code was also included with the link to the survey in the email. There are two consent forms and a total of seven demographic questions and 20 assessment questions participants needed to complete. When surveys were completed, I gathered data from SurveyMonkey. I then compiled data on a password-protected spreadsheet to upload data into SPSS for data analysis.

Instrumentation

The first data instrument was a demographics survey. This survey consisted of seven questions asking about AAT, number of sessions, age, gender, and race. These questions were multiple choice or fill in the blank.

Beck Hopelessness Scale

The other instrument that I used was the Beck Hopelessness Scale. Beck's Hopelessness scale is a 20-item scale that measures the extent of negative attitudes about

the future as perceived by adolescents and adults (Beck & Steel, 1988). This assessment instrument has data to support the use for adolescents starting at age 13 (Beck & Steel, 1988). The reliability for this tool supports all correlations were significant beyond the .01 level for the one tailed test with the majority greater than .50. The validity scores reported that the BHS is statistically significant with $p < .001$ on all studies (Beck & Steel, 1988). The test-retest reliability for this instrument for a group of 21 participants is $r = .69$ ($p < .001$) and the test-retest reliability for a second sample of 99 participants was $r = .66$ ($p < .001$) (Beck & Steel, 1988). The Kuder-Richardson (KR-20) was used for internal consistency for suicide ideators, suicide attempters, alcoholics, heroin addicts, single episode major depression disorder, recurrent major depression disorder, and dysthymic disorders were .92, .93, .91, .82, .92, .92, and .87, respectively (Beck & Steel, 1988). For concurrent validity they found the clinical ratings of hopelessness were .74 ($p < .001$) in a general practice study of 23 participants and .62 ($p < .005$) in the attempted suicide sample (Beck & Steel, 1988). To minimize risk for adolescents it is written in the parent consent for them to check in with their adolescent after the survey is complete. A support hotline is also provided for the parents and adolescents. Also, at any time during the study the participant can stop and choose to no longer participate and withdrawal.

Data Analysis Plan

Once participants submit the SurveyMonkey assessment, I compiled all the data into a password protected spreadsheet in Excel. I screened the data and made sure there was no duplicate or incomplete data. I also removed and did not include any incorrect or incomplete data and made sure all data was labeled correctly. For this study, 77 responses

needed to be met. Once the minimum number required for the study was attained, I uploaded the data into SPSS to run the multiple regression test. I entered the dependent variable of hopelessness into SPSS and the independent variables of number of AAT sessions, time since last session and age were also entered into SPSS. I ran the multiple regression test in SPSS and attained the model summary with the *R*, R^2, adjusted R^2. I also interpreted statistical significance from the ANOVA table if value was < .05. The final table of use to determine statistical significance is the coefficients table to determine how much the dependent variable varies with the independent variables.

Threats to Validity

External Validity

The external factors that influence validity are the participants and their reactions to the surveys, parental consent, and the clinicians. This study is dependent on participation of adolescents that have already received at least one session of AAT. I addressed this in the screening process when I received the surveys and review the answers in the demographic survey. If parameters are not met, then survey was not included in study. Guardians also need to provide consent to allow the adolescents to participate in the completion of the assessments. The guardians can ask questions about the study with the researcher via email to address any concerns of participation. The adolescent must then provide their assent. Participants may skip questions and not answer all the necessary assessment questions. These assessments were not included in the study. The researcher then attained more than the minimum of 77 assessments to compensate for any that cannot be included. Another outside factor is the clinicians that use AAT

sending the study to the adolescents that fit the parameters of the study. It is likely that the clinicians used another modality with AAT, and there is no way to determine what other modalities or techniques were used in addition to AAT. This study is a single point in time study so there is no base line and no ability to determine predictability. This study only has the ability to determine if there is a relationship between AAT and time since last of session, number of AAT sessions, and the age of the participant in the single time point that the participant completes the study. As a single point in time cross-sectional study there is susceptibility to both nonresponse bias and recall bias.

Internal Validity

The testing instrument is Beck's Hopelessness scale, there is also a demographic survey to gather pertinent participant information. Both of which were included in a Survey Monkey platform for the participants to complete anonymously. This tool has been tested and utilized with adolescents since 1988. The participants needed to fully complete the surveys and answer questions honestly. The participants also needed to have full understanding of what the survey and questionnaire were asking. There is the potential for a gap in reading comprehension and understanding of the assessment questions between the ages of 13 – 19. This instrument can be self-administered or can be read to the participant if they need support. There is also the potential that participants have varying time frames from when they last participated in an AAT session. This is one of the variables I will track. The possibility of selection bias is present in that there is no way to reach out to every clinic and facility that provides AAT. Also, there is selection bias that any adolescent that meets the criteria but does not have access to the internet or

a computer. There is also a treat to statistical conclusion validity since I am only collecting data from a single time point so causality cannot be inferred. In addition, the participants are asked to share number of sessions and time since last session from memory and this is highly susceptible to error in recall.

Ethical Considerations

This study is working with adolescents and consent was attained from both the participant and the legal parent or guardian of the adolescent. When the information was returned the data was kept in a locked electronic file that only the researcher has access to. The participants need to have access to support after completing the assessments to make sure they are not affected negatively by the study. The participants and parents need to have full disclosure of the study and what information and education is helpful to them regarding the study.

Ethical Procedures

The researcher began the ethical procedure by disclosing the purpose of the study and reassuring participants that it is a voluntary basis and not a requirement. Before the adolescent participates the parent or guardian received the information and provided consent if they were comfortable with their child participating in the study. The adolescent then provided their assent before they move forward to the survey. All information and data were password protected and only accessible by the researcher. The survey information is all anonymous and there is no identifiable information provided. As this study is anonymous there is no access to information that would harm participants. Participants have the option to provide an email address at the end of the survey if they

would like to receive a $10 Amazon gift card. All emails will remain on a password protected laptop. As this study involves adolescents all members of the IRB committee provided approval of the study. At the end of the study, I provided a one to three-page summary of the results in layperson terms to provide to the clinics the invitation was sent to and post on the social media platforms used.

Summary

This quantitative study involved determining if number of AAT sessions, time since last session, and age had a relationship with hopelessness among U.S. adolescents. Participants resided within the U.S. and were between 13 and 19 and completed at least one AAT session. Data collected for this study allowed me to determine if there were statistical relationships between number of AAT sessions, time since last session, and age of adolescents with hopelessness.

Chapter 4: Results

The purpose of this quantitative study was to determine if there was a statistically significant relationship between level of hopelessness among U.S. adolescents and number of AAT sessions, time since last session, and age. This study does not determine predictability but will help determine if there is a relationship between dependent and independent variables. This study will help contribute data and information regarding level of hopelessness among U.S. adolescents as this is one of the conditions that contributes to suicide ideation and other mental health struggles. The research question for this study was:

RQ: Does number of AAT sessions, time since last session, and age have a significant relationship with hopelessness among adolescents?

H_0: Number of AAT sessions, time since last AAT session, and age do not have a significant relationship with hopelessness among adolescents.

H_a: Number of AAT sessions, time since last AAT session, and age do have a significant relationship with hopelessness among adolescents.

There were three independent variables: number of AAT sessions, time since last AAT session, and age. The dependent variable was level of hopelessness as measured using the Beck Hopelessness Scale.

This chapter includes a discussion of the data collection process and results of the study.

Data Collection

Data collection started January 4 and ended April 5, 2023. The recruitment process for participants started with sending out surveys to AAT clinics and facilities. The survey was then posted on social media sites in groups and pages associated with AAT. The process 5 five months to send to AAT clinics and facilities, and I received five responses. I went through all 50 states and completed a Google search for counseling clinics and facilities that use AAT. I sent the study to 96 clinics across the U.S. I collected clinic names, addresses, phone numbers, web addresses, and emails. I sent information to each clinic's email. I also posted on AAT social media sites. After the survey was posted on these sites, over 4,000 responses came through in one day. This is common when using social media and the Internet to collect data. Due to this outcome, I developed a data cleaning and sorting process to clean the large data set. A data cleaning approach is necessary when working with quantitative data which contains outliers, missing or incomplete responses, and patterns of duplicate responses (Berti-Equille et al., 2011). One of the largest issues to overcome with data cleaning was bot responses. Responses from bots or fake participants that are programmed to respond and complete multiple answers in seconds or minutes is a prevalent challenge with online platforms (Simone, 2023). Simone (2023) shared suggestions to help minimize or eliminate bot responses: "include open-ended questions, look for unusual answers, track time stamps for impossible dates and times, flag responses that happen too fast, and look for bundles of participants that begin and end at the same time" (p. 3).

The sample for the population of interest had a favorable distribution in terms of participants' ages. Age is one of my independent variables. There was only one participant who was 13. All other ages had proportionate representation within the participation group.

Table 1

Demographic Data of Participants

Age	%	Gender	%	Race	%	State	%
13	1	Male	71	American Indian	6	AK	1
14	10	Female	29	or Alaska Native		AL	1
15	8	Other	0	Black/African	2	AZ	5
				American		CA	23
16	18			Hispanic or	3	CO	1
17	11			Latino		FL	5
						GA.	1
18	30			Native Hawaiian	3	IL	7
19	22			or Pacific		IN	4
				Islander		KY	1
						MA	5
				White/Caucasian	84	MD	3
				Other	2	NJ	3
						NY	13
						OH	3
						OK	3
						PA	5
						SC.	3
						TN	1
						TX	8
						VA	3
						WI	1

The other two independent variables were number of AAT sessions and time since last session. These two variables both had outliers. Outliers can cause data to be unbalanced. One of the ways to balance outliers is Winsorizing. This technique is often chosen over other methods as it still allows all participants' data to be included, rather

than eliminating them from the study. Sullivan et al. (2021) shared Winsorizing transforms outliers to a less extreme number so that responses can still be included in data but with a more balanced number, typically by 90% Winsorization set values, which means no outliers more than 5% or 95%. For the number of AAT sessions variable, there were four outliers that were Winsorized. The lowest value of the number of sessions was one, and the highest value was 33. The lowest Winsorized value for number of sessions was two, and the highest Winsorized value was 10. For number of sessions, there was one response of one that was Winsorized to two. There were three values above the highest Winsorized value of 10 which were 18, 24, and 33, and all three values were Winsorized to 10. Time since last AAT session variable had five outliers that were Winsorized. The lowest Winsorized value was two and the highest Winsorized value was 17. There was one value lower than the Winsorized value of two, and that one value was Winsorized from one to two. There were four values above the highest Winsorized value of 17, 18, 20, and 20. These four values were Winsorized to the highest value limit of 17.

Other demographic information that was collected about the population included gender, race, and what state they lived in. Participants in this study were 71% female and 29% male. Breakdown of race for the participants was: 5% American Indian or Alaska Native, 1% Black/African American, 2% Hispanic/Latino, 2% Native Hawaiian or other Pacific Islander, 1% other race, and 65% White/Caucasian. Regarding states where participants lived, there were 22 states: 1% Alaska, 1% Alabama, 5% Arizona, 23% California, 1% Colorado, 5% Florida, 1% Georgia, 7% Illinois, 4% Indiana, 1% Kentucky, 5% Massachusetts, 3% Maryland, 3% New Jersey, 13% New York, 3% Ohio,

3% Oklahoma, 5% Pennsylvania, 3% South Carolina, 1% Tennessee, 8% Texas, 3% Virginia, and 1% Wisconsin. The sample population was adolescents within the U.S. between 13 and 19 who had at least one AAT session. Given limitations of the population sizes, participants were representative as there were responses from each age.

Results

The first review of the data was to make sure that the data met the assumptions for multiple regression. The first test conducted for this data was the Durbin-Watson test to determine if there is 1st-order autocorrelation. There was independence of residuals, as assessed by the Durbin-Watson statistic of 1.442. According to Field (2005) the recommended cutoffs are not lower than one or higher than three, therefore 1.422 is within the recommended range and not in violation. I also ran a multicollinearity test to determine the tolerance and variant inflation factor (VIF). Gignac (2019) states that tolerance should be .10 or greater and VIF should not be greater than 10. The independent variables number of sessions, time since last session, and age are .965, .631, and .648 respectively for tolerance and 1.036, 1.584, and 1.543 for VIF. Indicating the independent variables in the study meet the multicollinearity test. I then ran a scatterplot to determine linearity. The residuals formed a horizontal type of band on the scatterplot indicating that the relationship between the dependent variable and the independent variables is likely linear. With the use of the same scatterplot, I was also able to determine homoscedasticity as assessed by the visual inspection of the plot of studentized residuals versus unstandardized predicted values. In addition to the visual test of the scatter plot I also conducted a Pearson and Spearman Correlations test. To meet

homoscedasticity Gignac (2019) states that there should not be a statistically significant correlation within these tests. For the Pearson Correlation the data resulted in a .05 which is equal to the alpha level of statistical significance. With the Spearman test the statistically significant amount is .09 which is above the alpha measurement. Indicating that homoscedasticity is met. I also check for multicollinearity to verify that no two independent variables were highly correlated to each other. The correlations table shows that there are no values over 0.7 so this assumption was met. In the coefficients table it shows that all the Tolerance values are greater than 0.1 with the lowest being 0.631. As mentioned in the previous section there are no outliers after I conducted the Winsorization method to transform the outliers that were present in the number of AAT sessions variable and time since last AAT session variable. Both the Histogram and the P-P Plot support that the data is normally distributed. The overall model had a p-value of .016 indicating the model is statistically significant overall and the adjusted R^2 was .096 indicating that 9.6% of the variance in the level of hopelessness is attributed to number of AAT sessions, time since last session, and age, a small size effect. R value indicating a negative correlation. Participants number of AAT sessions has a statistically significant relationship with hopelessness F (3, 73) = 3.696, p < .016. The breakdown by independent variable reported on the coefficients table shows that the statistically significant value for number of sessions was p = .017, time since last session p = .664, and participants age p = .084. Indicating that the only independent variable with statistically significant value is number of sessions.

Table 2

Multiple Regression Results for Level of Hopelessness

Level of Hopelessness	B	Sig.	LL	UL	R^2	$Adj.R^2$
Model					.132	.096
Constant	3.698	.406	-5.124	12.520		
Number of Sessions	-.362	.017	-.658	-.066		
Time Since Last Session	-.035	.664	-.194	.124		
Participants Age	.413	.084	-.057	.883		

Note. Model = "Enter" method in SPSS Statistics; B = unstandardized regression coefficient; Confidence Interval LL = lower limit; UL = upper limit; R^2 = *coefficient determination* *Adjusted*R^2

Figure 1

Histogram

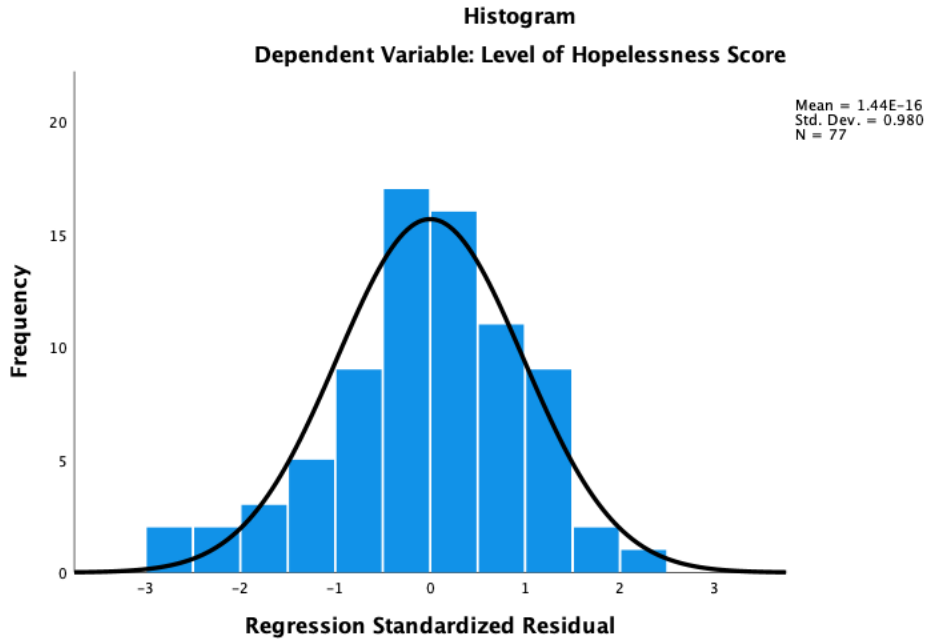


Figure 2

P-P Plot

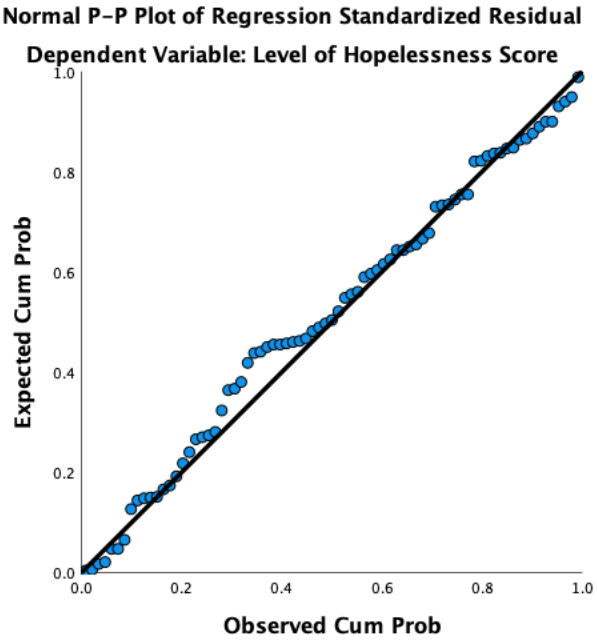
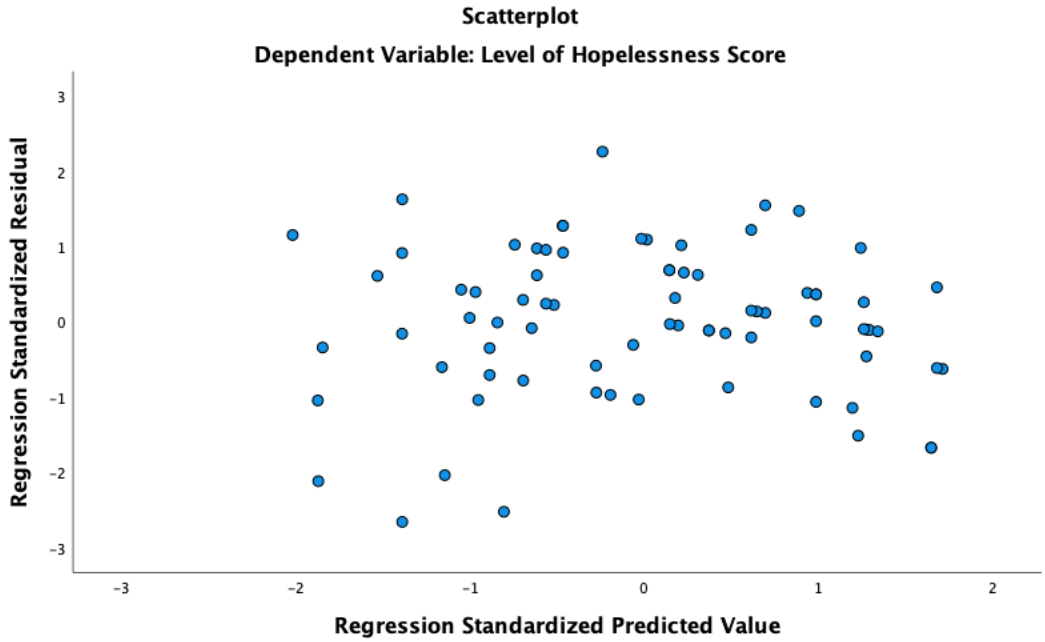


Figure 3

Scatter Plot



Summary

Results of this study indicate there is a statistically significant relationship between level of hopelessness in adolescents and number of AAT sessions. The overall p-value for the data was .016, showing an overall statistical significance. Therefore, I rejected the null hypothesis that number of AAT sessions, time since last AAT session, and age do not have a significant relationship with hopelessness among adolescents. Regarding demographics of this study, more than 50% of participants are 18, White/Caucasian, female, and living in California. The independent variable with statistical significance is number of AAT sessions. As this was a single occurrence study, there is no ability to predict the relationship between the variables as is sometimes

possible with multiple regression, but results support there is a statistically significant relationship between level of hopelessness among U.S. adolescents and the number of AAT sessions.

Chapter 5 includes interpretations of findings. I share limitations, recommendations, and implications of this study.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative study was to discover information about the relationship between hopelessness among U.S. adolescents and AAT. I conducted a multiple regression analysis to collect data from participants at a single point in time. There have not been any quantitative studies regarding this topic. The overall results for this study were statistically significant. The breakdown by each independent variable was a statistically significant relationship between number of AAT sessions and level of hopelessness for U.S. adolescents. Data did not support a statistically significant relationship between time since last AAT session or age with level of hopelessness.

Interpretation of Findings

Within the U.S., among high school students in 2019, 36.7% reported persistently feeling sad or hopeless in the past year, and 18.8% had seriously considered attempting suicide (Bitsko et al., 2022). Findings of this study support there is a significant relationship between level of hopelessness among U.S. adolescents and number of AAT sessions they attended. More research is needed to understand more about what causes such high feelings of hopelessness among this population group. This study does support AAT helps decrease levels of hopelessness. Participants of this study were in the identity versus role confusion developmental stage of Erik Erikson's psychosocial development theory. According to the APA (2019), adolescence is a critical stage to help early detection, prevention, and interventions to support mental and behavioral health. There is a statistically significant relationship between age and level of hopelessness (Umlauf, 2015). Data indicates I did not find a relationship between age of U.S. adolescents and

level of hopelessness. Additional research may be needed regarding AAT and age of participants. The last independent variable in this study was time since last session, attempting to show a relationship with the durability of the AAT. Previous studies of durability with AAT showed that it was maintained (Schuck et al., 2015; Gabriels et al., 2018). There was not a significant relationship between time since last AAT session and level of hopelessness. Regarding durability, my study does not support that durability and AAT have a significant relationship. This study adds to knowledge about AAT and mental health. One of the top leading causes of death worldwide and within the U.S. for adolescents is suicide (WHO, 2021; CDC, 2021). A consistent symptom among adolescents struggling with mental health and suicide is hopelessness (AACAP, 2018; Foto-Ozdemir, 2016). As such, this study has added to the knowledge that on a quantitative level there is a significant relationship between the use of AAT and the level of hopelessness, the more AAT sessions the lower the level of hopelessness. This study supports that additional quantitative research is beneficial to help understand relationships between AAT and level of hopelessness.

Limitations of the Study

The sampling strategy that was used for this study was convenience sampling. Only adolescents who participated in AAT sessions could participate. A true random sample was not an option. Only participants who had access to the Internet and a computer, phone, or tablet could participate. During the data collection stage, I also ran into limitations involving bots and duplicate responses from participants. There was a large range of number of sessions among participants starting at one session and went up

to 33. Winsorizing was necessary to include all participant data and balance outliers. This was also a single point in time study. Therefore, I could only determine if there was a relationship between number of AAT sessions, time since last session, and age with hopelessness at the one point in time. I could not determine if there was causality or predictability between variables.

This study also had internal and external factors that affected its validity. Participants for this study were a high-risk population, so parental consent was required for participants under 18. There were participants who skipped questions and had to be eliminated during the data cleaning process. Finally, clinicians for these participants also likely used other modalities of therapy in conjunction with AAT, and there was no way to determine what other counseling modalities participants had with AAT. Participants' reading comprehension and understanding of questions varied. Time since their last session varied from one to 20 weeks. For this variable, Winsorizing was used again to balance outliers. Participants who were calculated as outliers were adjusted. Another limitation for this study is that there was no baseline I did not collect data before and after treatment. There was no way to determine the effectiveness of AAT because a single point in time response cannot provide information about whether level of hopelessness was maintained, improved, or declined, as there is only one set of data points.

Recommendations

The first recommendation for further research is to do a quantitative experimental study. If an experimental study can be done where participants complete assessments before treatment and then there are two groups (one group with AAT and another with

other therapeutic modalities used) and then given the assessment again after treatments, causality and predictability would be able to be determined. There is research supporting use of animals in counseling with humans. There is also research supporting struggles of mental health with adolescents. There is research starting there is a relationship between AAT and mental health through qualitative studies (Altschuler, 2018; Firmin et al., 2016; Hoagwood et al, 2017; Jones et al, 2019; Laux et al, 2014; Nimer & Lundal, 2007; & Signal et al., 2017). Determining relationships and causality between AAT and mental health would lead to more knowledge regarding this area of mental health. Another recommendation is to help determine what other modalities are used with AAT. Also, if there is a relationship between the use of AAT and the use of any other therapeutic modalities used with AAT during sessions. This would be research that can be done with practitioners rather than adolescents. Finally, the last recommendation is to do further research to help determine if there is a particular recommended number of AAT sessions that is necessary to improve hopelessness and mental health.

Implications

This study has several positive implications for social change. From an individual standpoint, this study shows that there is a relationship between hopelessness and AAT. This is a modality that can help support mental health improvement for adolescents. Most mental health challenges start during adolescence, and this study helps support the importance of being proactive and active with adolescents. Adolescents are not alone, and there are many peers struggling and improving their mental health using AAT. This impacts the family and community because when the individual's mental health is more

stable, they can contribute and function more consistently within the family. Adolescents are at an age where there is a lot of chaos and change. AAT is one support that can bring balance to families when adolescents are more at peace and do not feel hopeless and alone. This carries over into their environment at school and communities. Knowing how and where to go to get support is beneficial for their environment and society to help bring balance and peace. When adolescents struggle with their mental health and hopelessness, this can carry over into adulthood if not addressed during adolescence when challenges and struggles begin.

The results and data from this study help contribute to the field of counseling and mental health. The quantitative data helps support the use of AAT with adolescents and their level of hopelessness. Supporting that both Erik Erikson's developmental theory and HART theory are supporting and influencing adolescents and their level of hopelessness and mental health. The results did not show a significant relationship between age and the level of hopelessness; however, all the participants were in the same developmental stage and showed that AAT was helpful in the level of hopelessness.

Conclusions

The data supports the results from this study contribute quantitative data that supports a relationship between AAT and the level of hopelessness for adolescents. This study is the start of possible additional research that will help determine more details and specifics about AAT and hopelessness. Among the adolescent population mental health and suicide are a prominent struggle and the more we know and understand the relationships, causes, and predictable aspects of the mental health for this population the

better prepared to help and support the counseling field will be. This study was the first step to determine that there is a relationship. The next steps are to figure out the type of relationships and what outside influences impact the level of metal health and hopelessness.

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Appendix A: Study Assessment

1. How many sessions of Animal Assisted Therapy have you completed (type in number)?

   _____

2. How long has it been since your last session (type in how many weeks)?

   _____

3. What is your age?

   a. 13

   b. 14

   c. 15

   d. 16

   e. 17

   f. 18

   g. 19

4. What is your gender that you identify as?

   a. Female

   b. Male

   c. Other (please specify) _____

5. What race do you identify with (one or more may be selected)?

   a. White or Caucasian

   b. Black or African American

   c. Hispanic or Latino

d. Asian or Asian American

e. American Indian or Alaska Native

f. Native Hawaiian or Other Pacific Islander

g. Another Race

6. What State do you live in?

_____

Beck's Hopelessness Scale (BHS)

1. I look forward to the future with hope and enthusiasm.
    a. True
    b. False
2. I might as well give up because there is nothing, I can do about making things better for myself.
    a. True
    b. False
3. When things are going badly, I am helped by knowing that they cannot stay that way forever.
    a. True
    b. False
4. I can't imagine what my life would be like in ten years.
    a. True
    b. False
5. I have enough time to accomplish the things I want to do.
    a. True
    b. False
6. In the future, I expect to succeed in what concerns me most.
    a. True
    b. False
7. My future seems dark to me.

a. True

b. False

8. I happen to be particularly lucky, and I expect to get more of the good things in life than the average person.

a. True

b. False

9. I just can't get the breaks, and there's no reason I will in the future.

a. True

b. False

10. My past experiences have prepared me well for the future.

a. True

b. False

11. All I can see ahead of me is unpleasantness rather than pleasantness.

a. True

b. False

12. I don't expect to get what I really want.

a. True

b. False

13. When I look ahead to the future, I expect that I will be happier than I am now.

a. True

b. False

14. Things just don't work out the way I want them to.

a. True

b. False

15. I have great faith in the future.

a. True

b. False

16. I never get what I want, so it's foolish to want anything.

a. True

b. False

17. It's very unlikely that I will get any real satisfaction in the future.

a. True

b. False

18. The future seems vague and uncertain to me.

a. True

b. False

19. I can look forward to more good times than bad times.

a. True

b. False

20. There's no use in really trying to get anything I want because I probably won't get it.

a. True

b. False

Appendix B: Recruitment Email

Online survey study seeks teenage participants

receiving/or have received Animal Assisted Therapy

There is a new study looking to find adolescents outlook on life that could help care providers like social workers, psychologists and counselors better understand and help their clients. For this study, you are invited to share your experiences with Animal Assisted Therapy.

This survey is part of the doctoral study for Nicole Denzler, a Ph.D. student at Walden University.

About the study:

- One 5 to 10-minute online survey
- To protect your privacy, no names will be collected

Volunteers must meet these requirements:

- Between ages of 13 - 19
- Completed at least one session of Animal Assisted Therapy

https://www.surveymonkey.com/r/PKJLHFJ

Appendix C: Authorization for Assessment Tool

License to Use:

You understand that you have purchased a nonexclusive, nontransferable, revocable, limited license to use the copyrighted material pursuant to this limited license. The purchase of this limited license in no way transfers copyrights or other ownership interests to you. You agree that you will not (and shall not permit others to) sublicense, rent, lend, transfer, lease, sell, or provide to others the copyrighted material. Permission is hereby granted to you to share or lend the copyrighted material only with another professional who meets the publisher's qualifications for license purchase, as long as such loan or sharing does not otherwise violate this limited license.

Psych Corp

Pearson Executive Office

5601 Green Valley Drive

Bloomington, MN 55437