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The Differences in Mental Well-Being for Individuals With and Without Service Dogs

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Abstract

Trained service dogs can be used for many tasks, but the growing literature focuses on the benefits of the psychosocial health and well-being of individuals experiencing depression or anxiety. This study analyzes the effects of service dogs on the mental well-being of individuals with a diagnosed disability who have depression or anxiety. This quasi-experimental design assesses the mental well-being of individuals who have a service dog compared to those who do not have a service dog. Mental well-being was measured using the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) and focused on individuals with a service dog and diagnosed depression or anxiety compared to individuals without a service dog who had diagnosed depression or anxiety and a disability. This study's key findings showed no statistically significant difference in the mental well-being of individuals with a service dog with diagnosed depression or anxiety compared to those without a service dog who had a disability and diagnosed depression or anxiety. The results showed that both groups had a below-average well-being score.

Chapter 1 – Introduction

This study examines the differences in the mental well-being of individuals with a service dog and diagnosed depression or anxiety compared to individuals without a service dog who had diagnosed depression or anxiety and a disability. There are many service dogs, such as hearing, mobility, medical alert, and psychiatric service dogs. The tasks of a service dog depend on an individual's diagnosed disability. These tasks can range from mobility dogs who assist individuals with balance issues, alert dogs who help alert their handlers to a medical problem before it arises, and psychiatric service dogs who support individuals with a diagnosed mental disorder navigating day-to-day life. The size of a service dog matters based on what task the service dog is trained to perform, and breeds can range from Great Danes, Saint Bernards, and Bernese Mountain Dogs, who possess the ability to provide mobility assistance. Whereas Retrievers, German Shepherds, and Poodles are the most common breeds to perform service dog tasks (Karetnick, 2019).

Under the Americans with Disabilities Act of 1990 (ADA), an assistance dog, also known as a service dog, must do work or perform tasks for the benefit of an individual with a physical, sensory, psychiatric, intellectual, or other mental disability to receive public access rights (Rodriguez et al., 2020). The ADA considers service dogs to be working animals that are not pets primarily; therefore, they are protected from any laws prohibiting pets. Federal regulations provide special accommodations to those with disabilities and limits the number of questions an individual can be asked regarding their disability and their service dog tasks (Karetnick, 2019). The ADA makes a distinction between service dogs and emotional support animals (ESAs) since ESAs are animals that provide comfort just by being with a person and are not equipped to do a specific task, such as therapy dogs or pet dogs. Therapy dogs and pet dogs

are different from service dogs because they are solely for emotional reasons and do not have any legal rights, whereas the ADA protects service dogs.

Individuals can qualify for a service dog if they have a diagnosed disability, including a physical, psychiatric, intellectual, or other mental disability, that prevents them from living day-to-day life. A service dog will help alleviate stress from performing a task. To qualify for a service dog, a person's disability must first fall under the ADA definition of a mental or physical disability, but this will not necessarily be enough evidence for an individual to qualify for a service animal (US Service Animals, 2021). The individual must also provide documentation from a medical professional that their disability could be improved or supported by a service animal.

Significance

The significance of this study comes from the literature that shows that service dogs improve mental well-being in individuals experiencing any mental illness. The Centers for Disease Control (Centers for Disease Control, 2019) estimates that there are 61 million individuals with disabilities in the United States, and it is estimated that there are 500,000 service dogs (Cosgrove, 2022); therefore, less than 1% of individuals with a disability have a service dog. Before the COVID-19 pandemic, the prevalence of mental illness among adults was increasing. The pandemic and the economic shutdown created barriers for those accessing mental health services (Galea et al., 2020). A report released in 2020 showed an increase in the prevalence of mental illness from previous years, with 19% of adults experiencing mental illness, which is equivalent to over 47 million Americans (Mental Health America, 2020). The need for mental health resources is increasing, including improving access to service dogs for individuals with mental disorders.

Service dogs have many benefits for individuals with depression or anxiety, including beneficial impacts on their physical, psychosocial, and social well-being (Lindsay and Thiagarajah, 2021). Individuals with depression or anxiety who have a service dog can have a drastically different life than individuals who do not have a service dog since there are many benefits. This study benefits the service dog community and researchers assessing the differences between service dogs and individuals with depression or anxiety. Finding the differences in the mental well-being of individuals with depression or anxiety with and without a service dog might make insurance companies more likely to implement a policy that covers the cost of a service dog for individuals living with depression or anxiety.

Study Question

The question being evaluated: Is there a difference in the mental well-being of individuals with diagnosed depression or anxiety who have a service dog compared to those who have diagnosed depression or anxiety who do not have a service dog?

Chapter 2 – Background and Literature Review

Scientific background

There has been an increase in service dogs among individuals experiencing depression or anxiety (Rodriguez et al., 2020). I conducted a literature search through Google Scholar, Scopus, and PubMed with keywords such as mental health, mental disorders, service dogs, service animals, mobility dogs, and psychiatric dogs, and excluded searches focusing on PTSD and veterans. Veterans were excluded from the literature search since this study did not ask individuals on their veteran status. A search across three databases with the keywords listed above, with a date range between 2017 and 2022, yielded 2,503 results. The results included clinical trials, meta-analyses, randomized controlled trials, and systematic reviews.

A systematic review study suggested significant effects of having an assistance dog on psychological well-being, emotional functioning, self-esteem, and vitality. "Assistance dog" is an umbrella term that includes guide dogs, hearing dogs, and service dogs, where service dogs can be divided into subgroups of physical service dogs, diabetes alert dogs, and seizure alert dogs (Lundqvist, 2019). Another systematic review study was performed across seven databases and screened 1,830 records (Rodriguez et al., 2020). The assessed studies focused on the effects of mobility (18 studies), hearing (7 studies), guide (4 studies), and medical (2 studies) assistance dog partnerships, and studies had an average sample size of $N = 83$. An analysis of 147 statistical comparisons across psychological health, quality of life, social health, and vitality found that 68% of comparisons were null, 30% were positive in the hypothesized direction, and 2% were negative (Rodriguez et al., 2020). Positive outcomes included significant effects of having an assistance dog on psychological well-being, emotional functioning, self-esteem, and vitality. Methodological weaknesses in the review included inadequate reporting, failure to account for moderating or confounding variables, and studies that focused on psychiatric service dogs, ESAs, and pet dogs were excluded (Rodriguez et al., 2020).

Individuals with mobility issues widely reported that service dogs benefit them. Still, it is unclear whether this is true for individuals with depression or anxiety and if service dogs offer those same benefits (Yamamoto & Hart, 2019a). One study investigated the self-reported experience of service dog partners to understand whether three different factors influenced the benefits and drawbacks of partnering an individual with a service dog (Yamamoto & Hart, 2019a). The first factor focused on different methods of training service dogs, the second factor focused on the severity of the handler's disabilities, and the third factor focused on the different roles of service dogs. The data collection method included partnering with handlers of service

dogs through service dog agencies and networking groups and recruiting through a web survey. The sample included 19 men and 147 women, and about 91.8% lived in the United States (Yamamoto & Hart, 2019a). Participants in the study experienced increased independence, social relationships, self-esteem, life satisfaction, and decreased anxiety, stress, and loneliness. The primary benefits of service dogs were consistent across the different types of disabilities. However, the degrees of the benefits, concerns, and burdens slightly differed among groups depending on the disability. Participation in this study was voluntary, and individuals with a positive experience with their service dog were more likely to participate. Limitations to this study included not focusing on a specific population, one disability, and not having a particular age range. Still, more research must be done depending on the handler's disability and the dog's training history. A study based on an individual's specific disability and situation is required to better understand the benefits of having a service dog and minimize the burdens and concerns of living with a service dog (Yamamoto & Hart, 2019a).

The literature has well established the benefits of human-animal interactions, particularly with dogs, across diverse medical and psychiatric settings (Sikstrom et al., 2020). There is growing evidence of the positive impact of human-animal interactions, and these can prevent certain conditions or lower stress levels, decrease pain, improve mood, reduce cortisol, and decrease fear or anxiety, as well as promote a more positive mental well-being (Sikstrom et al., 2020). The tasks that traditional service dogs perform can provide physiological, psychological, and social benefits and increase the independence of a handler's disability. These tasks also come with many psychosocial benefits such as improved quality of life, increased self-esteem, self-awareness, feeling of safety, relaxation, social interaction, and confidence, decreased

anxiety, stress, depression, reduced feeling of loneliness, and providing companionship (Yamamoto & Hart, 2019b).

Research shows that service dogs are one of the main human-dog interactions, but psychiatric service dogs can also help individuals living with a mental illness. A qualitative study aimed to co-create pet therapy activities with patients admitted for severe and complex mental illness to a large urban mental health and addiction hospital (Sikstrom et al., 2020). The study indicated that the presence of a therapy dog during research activities increased the motivation of individuals to participate in the study in the hospital setting and allowed researchers to build rapport with the participants. The inclusion criteria for this study included men and women, individuals with a diagnosed mental disorder, and individuals who were also struggling with addiction; the exclusion criteria included outpatient individuals, individuals having difficulties related to their illness such as hallucinations or violent outbursts, and individuals with dementia (Sikstrom et al., 2020). It is crucial to remember that trained therapy dogs are not characterized as service dogs but must demonstrate calm manners around others (Sosa, 2022).

A recent systematic review suggests that the COVID-19 pandemic has significant psychological effects on the general populations of many countries, including the USA, China, Italy, and Spain (Bowen et al., 2021). During the pandemic, social support networks were disrupted and access to regular face-to-face medical services, such as counseling and psychological support to individuals who experienced a loss. One study suggested that dogs' role as household pets during the pandemic allowed individuals to receive the emotional support they needed since face-to-face interaction was limited and allowed individuals to have companionship in times of hardship (Bowen et al., 2021).

Animals tend to play a visible role in human society, such as acting as a companion or working for their handler. A systematic review aimed to identify several significant gaps in the literature and stated that there are currently no existing systematic reviews on the role of service dogs for children and youth (Lindsay & Thiyagarajah, 2021). One systematic review focused on service dogs for children and primarily on children's brief interactions with dogs or companion animals, but not service dogs (Lindsay & Thiyagarajah, 2021). Most research on service dogs has focused on adults, so it is crucial to explore service dogs' impact on children since they could play an essential role in their development. Still, it is also vital to understand their effect on a psychosocial level since it could assist clinicians in deciding whether to refer individuals to a service dog agency (Rodriguez et al., 2020).

Service dogs, emotional support animals (ESA), and psychiatric assistance dogs (PAD) provide support through companionship and can help ease anxiety, depression, and specific phobias within individuals experiencing a mental illness. However, ESAs are not service dogs, so individuals with ESAs do not receive the same accommodations as service dog users (Gibeault, 2021). An ESA needs to be prescribed by a licensed mental health professional, such as a therapist, psychologist, or psychiatrist, to a person with a disabling mental illness, who then must determine that the animal's presence is needed for the mental health of the patient. A longitudinal mixed-method research design study explored the potential ESA impact on mental wellbeing (Hoy-Gerlach et al., 2021). Results showed significant reductions in anxiety levels, depression levels, and loneliness scale scores via the Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI), and the UCLA Loneliness Scale (UCLA). Although these findings were significant, there is still a need for continued research on ESA companionship as a mental health recovery support.

A PAD is a service dog trained to assist its handler diagnosed with a mental health condition such as depression or anxiety. There is growing research on PADs, including the demographics of their handlers, the origin and type of dogs used, and the dogs' functions. Research shows that PADs can be all shapes and sizes and perform roles that provide substantial benefits to a broad range of people (Lloyd et al., 2019).

Many studies suggest that service dogs, therapy dogs, and animal-assisted therapy (AAT) help individuals battle many diseases and disorders. However, insurance fails to cover the cost even though it is less expensive than other treatments. Medical insurance in the United States has a level of standardization due to the Affordable Care Act, which states that all medical insurance policies are required to cover many "essential health benefits" which are emergency services, hospitalization, laboratory tests, mental health and substance-abuse treatment, outpatient care, prescription drugs, preventive services, and management of chronic diseases, and rehabilitation services (Jolie, 2022). The reasoning is a combination of misunderstanding what animal therapy does and the cost and medical necessity of the treatment, so it is important for individuals to understand the stigma against mental illness and how it affects individuals living with this depression and anxiety (Jolie, 2022).

In one study, an anonymous online survey was distributed to examine the perceptions of United States adults who did not own any assistance animal (ESA, service dogs, and therapy dogs) and a total of 505 individuals responded to the survey, which yielded 284 usable responses (Schoenfeld-Tacher et al., 2017). The results suggested widespread misconceptions about assistance dogs' definitions, rules, regulations, and rights. They showed that service dogs were more likely to be perceived as helping with a legitimate need, whereas there were some concerns about the legitimacy and necessary access rights for emotional support dogs. The overall

responses of participants showed that most people felt that individuals were not taking advantage of assistance animal laws and regulations (Schoenfeld-Tacher et al., 2017).

In adults, effective treatments for depression and anxiety are understudied in relation to autism spectrum disorder (ASD) (Wijker et al., 2019). A randomized controlled trial on people with ASD was performed and evaluated at baseline, post-intervention, and 10-week follow-ups and explored the effects of animal-assisted therapy (AAT). There were 53 participants in the study, all of whom were diagnosed with autism. The perceived stress of the individuals was measured using the Perceived Stress Scale, which contains ten items rated on a five-point Likert scale ranging from 0 'never' to 4 'very often', with a higher score corresponding to a higher level of self-perceived stress. The study results indicated that AAT with dogs could be used to reduce perceived stress and symptoms of agoraphobia and improve social awareness and communication in adults with ASD. While research on AAT is relatively limited and exploratory, AAT has been shown to potentially benefit people with mental illness, including an increase in verbal and nonverbal social behavior, and continues to be explored in regards to mental illness in adults and the use of dogs in AAT (Rothschild et al., 2019).

This study will contribute to the sparse literature on the benefit of service dogs and individuals diagnosed with a mental health disability relating to depression and anxiety by evaluating the mental well-being of individuals who are accessing service dogs who have diagnosed depression or anxiety, as well as individuals who have a disability and diagnosed depression or anxiety.

Chapter 3 – Data and Methods

Setting and study population

The population for this study was individuals with a qualifying disability for a service dog who either had a service dog or were on a waiting list to receive a service dog and who have previously documented a depression or anxiety diagnosis. The setting for the study was the Service Dog Connection (SDC), an organization founded in 2019 that specializes in pairing service dogs with an individual diagnosed with a disability. Additional inclusion criteria for this study were being at least 17 years of age and not having a pet dog.

Study design

This study used a quasi-experimental design with an independent post-test sample since it focused on the differences between mental well-being and service dogs. Using a cross-sectional study, I measured mental well-being at one point in time for individuals with a disability and who had diagnosed depression or anxiety using the WEMWBS (Warwick Medical School, 2021).

Data collection

SDC sent a recruitment email, with a link to the WEMWBS, to all individuals accessing services through their organization who were in the study's population and met the inclusion criteria. Participants were assigned to a treatment group based on their existing status of having or not having a service dog. I collected the age and gender of the participants as well as the Warwick–Edinburgh Mental Well-Being Scale (WEMWBS) responses. See Appendix C for the recruitment email. I collected data via Google Forms and the data collected was anonymous and no identifying information was collected. There was no incentive for individuals to participate, but those who participated hoped to provide insight into the mental well-being of individuals with depression or anxiety.

The ethical concerns during this evaluation consisted of parental consent for individuals under 18 years of age, voluntary participation, and confidentiality. Parental consent was vital since some participants were under 18 years of age. The SDC sent out an initial email to parents of those under 18 years of age, and if consent was given, the WEMWBS was filled out anonymously. Voluntary participation was essential, and individuals participating in the evaluation were free from coercion. Participants were free to withdraw their involvement without negatively impacting their participation in future services at SDC or future service dog placement. All information collected was confidential. Per the Office of Regulatory Affairs (ORA), this study did not constitute human subject research as defined at 45CFR46.102 and, therefore, did not require IRB approval.

Measurement

Mental well-being was measured by a mental well-being scale called the Warwick–Edinburgh Mental Well-Being Scale (WEMWBS) (Warwick Medical School, 2021). The WEMWBS measures mental well-being in the general population and evaluates projects, programs, and policies that aim to improve mental well-being. The 14-item scale WEMWBS has five response categories, summed to provide a single score. Participants completed the scale and checked the box that best described their experience of each statement over the past two weeks. A 5-point Likert scale was used (none of the time, rarely, some of the time, often, all of the time). The Likert scale represents a score for each item from 1 to 5, respectively, giving a minimum score of 14 and a maximum score of 70. All items are scored positively. The overall score for the WEMWBS was calculated by totaling the scores for each item with equal weights. A higher WEMWBS score indicated a higher level of mental well-being. Please see Appendix A for all 14 items from the WEMWBS scale.

As a rule of thumb, the WEMWBS needs to include at least 30 people with data at two points in time or 30 people in each group to be compared. The WEMWBS (Tennant et al., 2007) demonstrated reliability in a population of college students and the general population in the UK. The scale showed good validity with confirmatory factor analysis supporting a single factor hypothesis. A Cronbach's alpha score of 0.89 (student sample) and 0.91 (general population sample) suggested high reliability. The WEMWBS's strong psychometric performance suggests that it is suitable for measuring mental well-being at a population level (Tennant et al., 2007).

Data analysis

The data collected through Google Forms were tested for group differences. The scale results were input into an Excel sheet, and an independent t-test was performed and evaluated each of the 14- question responses to the WEMWBS and the scale as a whole. A 2-tailed t-test was used to evaluate differences in the mean, standard deviation, and p-value of each 14 WEMWBS question. The p-values of each question showed the differences in the responses and the mental being of individuals in each group.

Chapter 4 – Results

Descriptive data

A total of n=64 individuals completed the scale but only n=60 qualified for the study. There were n=31 individuals who had a service dog, but n=1 was excluded due to the individual also having a pet dog. There were n=33 who did not have a service dog, n=2 were excluded due to individuals not having a disability, and n=1 was excluded for having a pet dog. Please see Appendix B for the descriptive data of the individuals who qualified for the study.

Outcome data

The WEMWBS is very simple to score. The total score is obtained by summing

the score for each of the 14 items. The latter ranges from 1 – 5 and the total score from 14-70. A mental well-being score of 0-32 points indicates a very low mental well-being, 32-40 points is a below average mental well-being, 40-59 points is average mental well-being, and 59-70 points is an above average mental well-being. Most people have a score between 41 and 59. However, depending on if an individual has stressors in their life at the time, their score could be different than if they had no stressors. Since the study population has depression or anxiety, it was expected that mental well-being scores would be below average or average. Table 1 outlines what mental well-being category the participants fell into after summing the WEMWBS scores.

Table 1

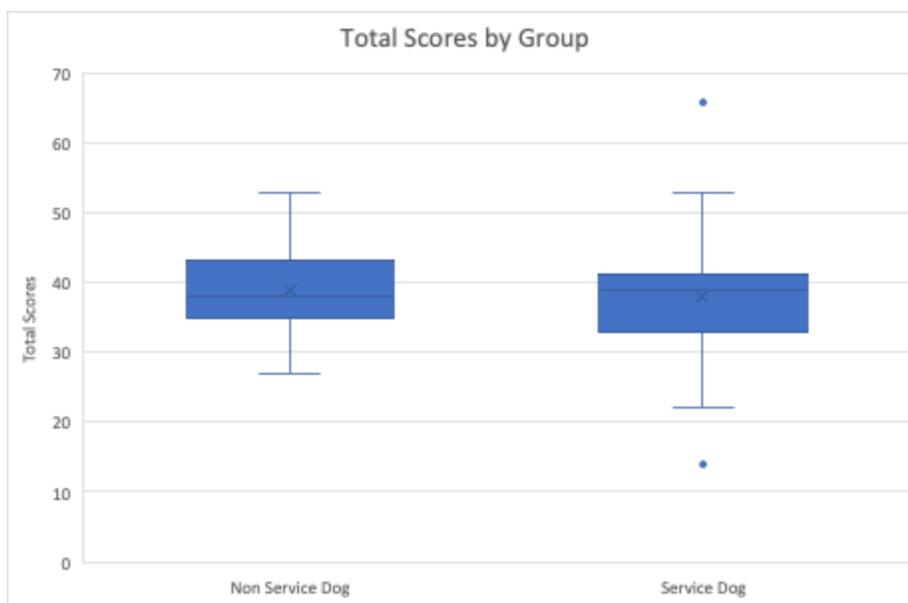
Mental wellbeing categories of the WEMWBS

WEMWBS Score Ranges	Non-Service Dog	Service Dog
Very Low (0-32)	2	4
Below Average (32-40)	19	15
Average (40-59)	9	10
Above Average (59-70)	0	1

The outliers in the service dog group have a high score of 66, above average mental well-being score, and a low score of 14, which is a very low mental well-being score. Figure 1 shows a box and whisker plot which displays the variation of data sets.

Figure 1

Box and Whisker Plot of total WEMWBS scores



The most significant difference between the survey responses was the item which asked participants to rate how they felt on a scale of 1-5 regarding having the energy to spare.

Participants in both groups felt like they rarely had energy to spare, even though only one group had to take care of a service dog.

Main results

Participants in the non-service dog group had a mean average of 38.97 on the scale with a standard deviation of 6.21, whereas participants in the service dog group had a mean average of 38.23 on the scale with a standard deviation of 9.87. A 2-tailed t-test of the mean total score of both groups was 0.73, which was not statistically significant; thus, there is no group difference in the total mental well-being scores for participants with a service dog and participants without a service dog. Table 2 outlines each question's mean, standard deviation (SD), p-value, and total score in the WEMWBS and how it relates to the non-service dog group and the service dog group.

Table 2

T test values of WEMWBS responses

WEMWBS Questions	Non Service Dog Mean (SD)	Service Dog Mean (SD)	p-value
I've had energy to spare.	2.77 (0.82)	2.20 (0.61)	0.004*
I've been feeling loved.	2.67 (0.88)	3.03 (1.22)	0.19
I've been able to make up my own mind about things.	2.93 (0.87)	3.27 (1.14)	0.21
I've been feeling interested in other people.	3.00 (0.79)	2.77 (1.01)	0.32
I've been thinking clearly.	2.83 (0.87)	2.67 (0.92)	0.48
I've been feeling relaxed.	2.48 (0.91)	2.33 (0.76)	0.50
I've been feeling close to other people.	2.63 (0.76)	2.80 (1.24)	0.53
I've been feeling cheerful.	2.73 (0.74)	2.60 (1.04)	0.57
I've been interested in new things.	2.90 (0.80)	2.77 (1.10)	0.59
I've been feeling optimistic about the future.	2.77 (1.41)	2.63 (1.13)	0.69
I've been feeling useful.	2.87 (1.11)	2.77 (1.04)	0.72
I've been dealing with problems well.	2.87 (0.78)	2.08 (0.89)	0.76
I've been feeling good about myself.	2.67 (0.80)	2.70 (1.09)	0.89
I've been feeling confident.	2.93 (0.83)	2.90 (1.12)	0.90
Total Score	38.97 (6.21)	38.23 (9.87)	0.73

* p < .05

Chapter 5 – Discussion

Key results

This study's key findings showed no statistically significant difference in the mental well-being of individuals with a service dog with diagnosed depression or anxiety compared to

those without a service dog who had a disability and diagnosed depression or anxiety. The results showed that both groups had a below-average well-being score. Since the sample size of this study might have been too small to detect a significant difference given the effect size of having a service dog, further research with a larger sample size would confirm if there is a significant difference with a small effect size.

All individuals in the study were diagnosed with depression or anxiety, so mental well-being scores were expected to be lower than the general population. This study showed no significant difference in individuals' mental well-being regarding feeling good about themselves, feeling confident, feeling useful, and dealing with problems well.

Interpretation

The interpretation of the results was as follows: Is there a difference in the mental well-being of individuals with diagnosed depression or anxiety who have a service dog compared to those who have diagnosed depression or anxiety who do not have a service dog? This question was answered and showed no correlation between the variables; therefore, individuals with diagnosed depression or anxiety who have a service dog have a similar mental well-being compared to individuals with diagnosed depression or anxiety who do not have a service dog. These results are helpful for individuals wanting to understand the relationship between mental well-being and service dogs for individuals with depression or anxiety. A significant difference was that the service dog group had less energy to spare than the non-service dog group, which was expected for the service dog group since they should have less energy to spare since they owned a service dog. Perhaps the reason why individuals in the non-service dog group had more energy to spare was because they do not have a service dog to worry about and care for, whereas the service dog group had less energy to spare because they

may have to take energy out of their mental well-being to feed and exercise their service dog. It is clear though that future research is needed to know for sure why service dog owners have less energy to spare than individuals without service dogs.

These findings were dissimilar to the literature that demonstrate that having a service dog does positively affect psychosocial health and well-being (Rodriguez et al., 2020). The Rodriguez study focused on the effects of assistance dogs on psychosocial health and mental well-being, which was similar to this study. It is important to recognize that the changes to an individual's life following receiving a service dog are not the same for all ages, gender identities, backgrounds, and disabilities. Therefore, detailed descriptions of a study's population is important in understanding the psychosocial benefits of a service dog (Rodriguez et al., 2020). It is likely that this study did not have an adequate sample size and did not properly measure mental well-being since it was not known how long each individual had a service dog. It is important to keep in mind that mental well-being could be different for an individual who has a service dog for a longer period of time compared to an individual who just got a service dog. A study based on an individual's specific disability and situation would help to better understand the benefits of having a service dog (Yamamoto & Hart, 2019a).

There are not many studies that focus solely on depression or anxiety and encompass mental illness as a whole, so by focusing on certain mental illnesses, individuals with depression or anxiety will be able to learn about their specific illness and how a service dog could alleviate some of their symptoms. A study showed that psychiatric assistance dog owners have differing mental health diagnoses, and their dogs perform different tasks to support them in daily life, which was true in this study as well. It is important to remember that a better understanding of the service dog community and the person-dog relationship will help inform individuals living

with mental illness on the appropriate choice, training, and use of a service dog (Lloyd et al., 2019). The Lloyd study focused primarily on psychiatric assistance dogs whereas this study focused on all service dogs, so there could be a difference in the mental well-being of individuals accessing psychiatric assistance dogs compared to service dogs trained for other tasks. The tasks that traditional service dogs perform can provide physiological, psychological, and social benefits and increase the independence of a handler's disability (Yamamoto & Hart, 2019b) while also lowering stress levels, decreasing pain, and improving mood (Sikstrom et al., 2020).

Implications

The implications of this study's findings to the field of public health are important. This study expanded the knowledge base surrounding service dogs by looking into the mental well-being of individuals with depression or anxiety and how a service dog could improve the mental well-being of individuals. This study demonstrated that the WEMWBS can be used to assess mental wellbeing in the service dog community. These findings are helpful moving forward because they give researchers information to further explore the benefits of pairing individuals with service dogs because insurance companies do not cover the cost of obtaining a service dog, as it is not seen as a necessity. This study helps facilitate conversations regarding how to change the policies regarding service dogs in government spaces or how insurance companies can cover the cost of service dogs for individuals with a diagnosed disability. Medical insurance companies' previous reasons for not covering certain medical services have been either that it is too expensive and not cost-effective for the company or that the service is not supported by current medical research (Jolie, 2022). Therefore, research needs to be continued regarding service dogs and their effect on mental well-being so that down the line, insurance companies may be more willing to cover the costs of a service dog. The results of this study may contribute

to researchers' general understanding of the service dog community and can allow individuals to understand the psychosocial benefits of a service dog for someone with a disability.

Strengths and limitations

The strengths of this study included the WEMWBS being one of the few positive single scales for measuring mental well-being and has been fully validated for use in this age group and demographic. This study only assessed the differences in mental well-being for individuals with diagnosed depression and anxiety, whereas most research focused on all mental illnesses. This study was cost effective since an online survey tool was utilized so data was gathered promptly, and the results were immediate.

The limitations of this study included:

1. The sample size was small and may not have been sufficient to detect a significant difference in mental well-being when using a WEMWBS. A rule of thumb when using the WEMWBS is that studies need to include at least 30 people with data at two points in time or 30 people in each group to be compared. Although this study included 30 people in each group, more individuals might be needed to detect significant differences.
2. The WEMWBS is self-administered, which can be ineffective if the individual did not accurately report on their mental well-being.
3. The participants of this study do not represent all people with disabilities.
4. This study did not collect key demographic information, such as what type of disability participants had that qualified them for having a service dog, veteran's status, or how long they had a service dog.

Future directions

There is a need for more research regarding service dogs and their impact on mental well-being in the disability community. Future studies should have a larger sample size, so it was likely that it was too small to show a significant difference, if a significant difference does exist, between mental well-being and individuals with and without service dogs. Future studies focusing on the service dog community and mental well-being should focus on individuals with all mental illnesses since this study solely focused on individuals with diagnosed depression or anxiety. There are not many studies that focus solely on depression or anxiety and encompass mental illness as a whole, so by focusing on certain mental illnesses, individuals with depression or anxiety will be able to learn about their specific illness and how a service dog could alleviate some of their symptoms. A study showed that psychiatric assistance dog owners have differing mental health diagnoses, and their dogs perform different tasks to support them in daily life, which was true in this study as well. It is important to remember that a better understanding of the service dog community and the person-dog relationship will help inform individuals living with mental illness on the appropriate choice, training, and use of a service dog (Lloyd et al., 2019). The Lloyd study focused primarily on psychiatric assistance dogs whereas this study focused on all service dogs, so there could be a difference in the mental well-being of individuals accessing psychiatric assistance dogs compared to service dogs trained for other tasks.

Future research should be conducted to assess the mental well-being of veterans in the service dog community since this study did not ask individuals about their veteran status and the impact a service dog had on their quality of life. Many studies now focus on veterans with PTSD and how service dogs help the mental well-being of those individuals, but little was known about service dogs and how they help the mental well-being of individuals with depression or anxiety. By narrowing the scope and focusing on depression and anxiety instead of the multitude of

mental health disorders, researchers will better understand the benefits of service dogs and how they improve mental well-being. It is important to recognize that the changes to an individual's life following receiving a service dog are not the same for all ages, gender identities, backgrounds, and disabilities. Therefore, detailed descriptions of a study's population is important in understanding the psychosocial benefits of a service dog (Rodriguez et al., 2020).

Finally, future studies should explore the type of training a service dog receives, the psychosocial impact a service dog has on an individual, how to improve service dog access for individuals with mental illness, and how long the individual had their service dog to see if it relates to their mental well-being. Further, it would be interesting to assess whether the breed or age of the service dog at placement and the length of time owning a dog influences the mental well-being of an individual. This would allow service dogs to be more widely accepted in the medical insurance field and insurance companies could possibly re-evaluate how effective service dogs are for individuals with disabilities.

References

- Bowen, J., Bulbena, A., & Fatjó, J. (2021). The Value of Companion Dogs as a Source of Social Support for Their Owners: Findings From a Pre-Pandemic Representative Sample and a Convenience Sample Obtained During the COVID-19 Lockdown in Spain. *Frontiers in Psychiatry, 12*. <https://doi.org/10.3389/fpsyt.2021.622060>
- Centers for Disease Control. (2019, March 8). *Disability Impacts All of Us Infographic* | CDC. Centers for Disease Control and Prevention. Retrieved October 4, 2022, from <https://www.cdc.gov/ncbddd/disabilityandhealth/infographic-disability-impacts-all.html#:~:text=61%20million%20adults%20in%20the,is%20highest%20in%20the%20South.>
- Collect, Score, Analyze and Interpret WEMWBS*. (2021, December 1). Warwick. Retrieved March 1, 2022, from <https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/using/howto/>
- Cosgrove, N. (2022, March 14). *10 Interesting Service Dog Statistics in 2022*. Hepper. <https://www.hepper.com/service-dog-statistics-and-facts/>
- Galea, S., Merchant, R. M., & Lurie, N. (2020). The Mental Health Consequences of COVID-19 and Physical Distancing. *JAMA Internal Medicine, 180*(6), 817. <https://doi.org/10.1001/jamainternmed.2020.1562>
- Gibeault, S. M. (2021, February 24). *Everything You Need to Know About Emotional Support Animals*. American Kennel Club. <https://www.akc.org/expert-advice/news/everything-about-emotional-support-animals/#:~:text=Support%20Dog%20vs.,Service%20Dogs,accommodations%20as%20service%20dog%20users.>
- Hoy-Gerlach, Janet & Vincent, Aviva & Scheuermann, Barry & Ojha, Mamta. (2021). Exploring

- Benefits of Emotional Support Animals (ESAs): A Longitudinal Pilot Study with Adults with Serious Mental Illness (SMI). 10. 1-19.
- Jolie, E. (2022, April 29). *The Failure of Medical Insurance to Cover Psychiatric Service Dogs*. DigitalCommons@SHU. <https://digitalcommons.sacredheart.edu/acadfest/2022/all/9/>
- Karetnick, J. (2019, October 17). *Service Dogs 101—Everything You Need to Know*. American Kennel Club. <https://www.akc.org/expert-advice/training/service-dog-training-101/>
- Lamontagne, M. E., Djossa Adoun, M., Blanchette, A., Champagne, C., Johnson, M. P., Vincent, C., & Routhier, F. (2019). Facilitators and Barriers to the Use of Service Dogs: An Exploratory Study Using the Theoretical Domains Framework. *Disability and Rehabilitation: Assistive Technology*, 15(5), 537–544.
<https://doi.org/10.1080/17483107.2019.1594406>
- Lindsay, S., & Thiyagarajah, K. (2021). The impact of service dogs on children, youth and their families: A systematic review. *Disability and Health Journal*, 14(3), 101012.
<https://doi.org/10.1016/j.dhjo.2020.101012>
- Lloyd, J., Johnston, L., & Lewis, J. (2019). Psychiatric Assistance Dog Use for People Living With Mental Health Disorders. *Frontiers in Veterinary Science*, 6.
<https://doi.org/10.3389/fvets.2019.00166>
- Lundqvist, M., Alwin, J., & Levin, L. K. (2019). Certified Service Dogs – A Cost-Effectiveness Analysis Appraisal. *PLOS ONE*, 14(9). <https://doi.org/10.1371/journal.pone.0219911>
- Mental Health America. (2020). *2020 Prevalence Data*.
<https://mhanational.org/issues/2020/mental-health-america-prevalence-data>
- Rodriguez, K. E., Greer, J., Yacilla, J. K., Beck, A. M., & O’Haire, M. E. (2020). The effects of

- assistance dogs on psychosocial health and wellbeing: A systematic literature review. *PLOS ONE*, 15(12), e0243302. <https://doi.org/10.1371/journal.pone.0243302>
- Rodriguez, K. E., Bibbo, J., Verdon, S., & O’Haire, M. E. (2019a). Mobility and medical service dogs: a qualitative analysis of expectations and experiences. *Disability and Rehabilitation: Assistive Technology*, 15(5), 499–509. <https://doi.org/10.1080/17483107.2019.1587015>
- Rodriguez, K. E., Bibbo, J., & O’Haire, M. E. (2019b). The Effects of Service Dogs on Psychosocial Health and Wellbeing for Individuals with Physical Disabilities or Chronic Conditions. *Disability and Rehabilitation*, 42(10), 1350–1358. <https://doi.org/10.1080/09638288.2018.1524520>
- Rothschild, J., Maroney, P., & Hitch, D. (2019). Evaluating the Benefits and Challenges of Owning a Pet Dog at a Residential Psychiatric Rehabilitation Facility From the Perspective of Staff and Clients. *Occupational Therapy in Mental Health*, 35(1), 92–107. <https://doi.org/10.1080/0164212x.2018.1510799>
- Schoenfeld-Tacher, R., Hellyer, P., Cheung, L., & Kogan, L. (2017). Public Perceptions of Service Dogs, Emotional Support Dogs, and Therapy Dogs. *International Journal of Environmental Research and Public Health*, 14(6), 642. <https://doi.org/10.3390/ijerph14060642>
- Sikstrom, L., Meyer, T., Katz, E., Choi, M. M., Darragh, M., Cutler-Palma, A., Conforti, T., Kalocsai, C., & Soklaridis, S. (2020). Increasing participation in research with therapy dogs: A qualitative study at a large urban mental health and addiction hospital. *PLOS ONE*, 15(8), e0238096. <https://doi.org/10.1371/journal.pone.0238096>
- Sosa, K. S. (2022). *The Service Dog Connection*. Types of Dogs.

<https://theservicedogconnection.com/>

Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., Parkinson, J., Secker, J., & Stewart-Brown, S. (2007). The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation. *Health and Quality of Life Outcomes*, 5(1). <https://doi.org/10.1186/1477-7525-5-63>

US Service Animals. (2021, April 21). *What Disabilities Qualify for a Service Dog?* US Service Animals Blog.

<https://usserviceanimals.org/blog/what-disabilities-qualify-for-a-service-dog/>

Warwick Medical School. (2021, December 1). Retrieved April 28, 2022, from

<https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/using/howto/>

Wijker, C., Leontjevas, R., Spek, A., & Enders-Slegers, M. J. (2019). Effects of Dog Assisted Therapy for Adults with Autism Spectrum Disorder: An Exploratory Randomized Controlled Trial. *Journal of Autism and Developmental Disorders*, 50(6), 2153–2163. <https://doi.org/10.1007/s10803-019-03971-9>

Yamamoto, M., & Hart, L. A. (2019a). Professionally- and Self-Trained Service Dogs: Benefits and Challenges for Partners With Disabilities. *Frontiers in Veterinary Science*, 6. <https://doi.org/10.3389/fvets.2019.00179>

Yamamoto, M., & Hart, L. A. (2019b). Providing Guidance on Psychiatric Service Dogs and Emotional Support Animals. *Clinician's Guide to Treating Companion Animal Issues*, 77–101. <https://doi.org/10.1016/b978-0-12-812962-3.00005-8>

Appendix A: Warwick–Edinburgh Mental Well-Being Scale (WEMWBS)

Statements	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future.	1	2	3	4	5
I've been feeling useful.	1	2	3	4	5
I've been feeling relaxed.	1	2	3	4	5
I've been feeling interested in other people.	1	2	3	4	5
I've had energy to spare.	1	2	3	4	5
I've been dealing with problems well.	1	2	3	4	5
I've been thinking clearly.	1	2	3	4	5
I've been feeling good about myself.	1	2	3	4	5
I've been feeling close to other people.	1	2	3	4	5
I've been feeling confident.	1	2	3	4	5
I've been able to make up my own	1	2	3	4	5

mind about
things.

I've been
feeling
loved.

1

2

3

4

5

I've been
interested in
new things.

1

2

3

4

5

I've been
feeling
cheerful.

1

2

3

4

5

Appendix B: Descriptive data of participants

	Non Service Dog	Service Dog	Total
Gender			
Male	12	6	18
Female	17	19	36
Non Binary	1	3	4
Transgender	0	2	2
Age			
17	3	1	4
18-24	6	16	24
25-34	18	9	22
35-44	7	4	11
45-54	1	0	1

Appendix C: Recruitment email from SDC

Hello,

Our program is getting the help of an amazing Grad Student, Katelyn Morales at The College of Public Health, to collect data on our applicants and recipients. The purpose of this is to help improve our program and apply for grants to assist with fundraising for future applicants. Please fill out this survey for us! It would be greatly appreciated. There will be TWO surveys in total. This one is on general information about applicants and recipients. The next one will be for us to better understand the impact our service dogs have on recipients who have a service dog and individuals who do not have a service dog. All individuals under 18 must be given permission to take the survey by their parent/guardian.