Mount Saint Mary College Journal of Psychology Research Proposals
http://brainwaves.msmc.edu

The Effect of Dog-Assisted Therapy on Cancer Patients in Hospice Care

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An estimated 1,660,290 deaths caused by cancer will occur in the upcoming year (Siegel, Naishadham, & Jemal, 2013). After a certain point, cancer patients have a greater desire for quality of life than quantity of life (Coss, McGrath, & Caggiano, 1998). Hospice is a type of care chosen by terminal cancer patients, which focuses on the quality of life, pain, and stress management (Engleman, 2013). Stress associated with death and dying highlights the need for complementary therapies (Johnson, Meadows, Haubner, & Sevedge, 2008). Pets are a type of stress reduction and a form of complementary therapy (Katcher, 1982) and research suggests dogs are effective helpers for terminally ill cancer patients (Muschel, 1984). However, little research was successful on finding that dog therapy had a positive effect on the patients' quality of life. This study will examine the effects of dog-assisted therapy on terminal cancer patients' quality of life within a hospice care setting. The QUAL-E 2004 survey will measure quality of life before and after exposure to dog-assisted therapy (Steinhauser, Clipp, Hayden, McNeilly, Christakis, Voils, & Tulsky, 2004).

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Researchers of the American Cancer Society (2013) estimated 580,350 new cases of cancer will be diagnosed in the United States in the upcoming year. The leading cancer of the male population is prostate cancer, while the leading cancer of the female population is breast cancer (Siegel, Naishadham, & Jemal, 2013). The severity of the cancer is labeled by a stage diagnosed through physical exams, imaging studies, laboratory tests, pathology reports, and surgical reports (National Cancer Institute, 2013). Stage zero indicates that abnormal cells are present where they were developed. Stage four, the most severe stage of cancer, indicates that the cancer has spread to distant tissues and organs. Radiation Therapy and Chemotherapy are the common forms of treatment used to fight and attempt to cure the stages of cancer (National Cancer Institute, 2013). The technological advancement of these treatments and diagnosis, prolonged the lives of cancer patients worldwide; however, cancer eventually becomes terminal when treatment becomes ineffective (Johnson, Meadows, Haubner, & Sevedge, 2003). One in four deaths in the United States is due to cancer. Leading deaths for both male and females are caused by lung and bronchus cancers (Siegel et al., 2013). An estimated 1,660,290 deaths in the United States caused by cancer will occur in the upcoming year.

After a certain point, cancer patients have a desire to be treated as a dignified, or "whole" person, wanting active participation in their care, having their spiritual needs addressed, and focusing on the desire for quality of life versus quantity of life (Coss, McGrath, & Caggiano, 1998). Quality of life, or current satisfaction with living situation, is a core philosophy of hospice care. Hospice is considered to be the model for quality and compassionate care for people facing life-limiting illness or injury (National Hospice and Palliative Care Organization, 2014). Hospice includes a team-oriented approach to expert medical care, pain management, and emotional and spiritual support tailored to the patients' needs and wishes. Support is also offered to the patients' loved ones. Hospice is not tied to a location, but can occur within a special center, hospital, or at home (Dartmouth Atlas, 2014). Hospice is a type of care chosen by terminal cancer patients when they decide to stop receiving treatment for their disease (Engleman, 2013). According to the

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Dartmouth Atlas of Health Care (2014), 61.3% of patients with terminal cancer in the United States are currently participating in hospice care.

The National Hospice Foundation (2014) notes about their philosophy, "We envision a world where everyone facing serious illness, death, and grief will experience the best that human kind can offer." Hospice care works closely with palliative care. Palliative care is therapy that focuses on decreasing pain and suffering, by providing treatment for relief of symptoms and comfort for patients of all ages. In the hospice setting, the nurse provides palliative care for the patient (Engleman, 2013). The overall goal of the collaboration of hospice and palliative care is for the person to die with as little pain possible and with dignity (National Hospice and Palliative Care Organization, 2014).

Of the many issues included in hospice care, especially for cancer patients, stress is most prevalent. Stress leads to adverse outcomes and affects patients' quality of life and psychological well-being (Hoffman, Zevon, D'Arrigo, & Cecchini, 2004). Addressing stress and providing care once identified to reduce stress is important to improving quality of life. The types of stress associated with disease are fear, anxiety, and depression (Coss et al., 1998). Elisabeth Kubler Ross (1969) defined five stages of dying: denial, anger, bargaining, depression, and acceptance. Patients can move through the stages more easily if they have full support from others. Hospice patients, their families, and their loved ones experience enormous stress, because old family routines begin to fall apart (Geisler, 2004). Patients at the end of life often face isolation and loneliness, exacerbated by society's discomfort with the topic of death alone. The attitudes from others are sensed by the patients, including the patient-staff member relationship (Muschel, 1984).

The patients confront significant losses, including friends, partners, jobs, health, independence and mobility (Geisler, 2004). The ability to deal with one's own environment is a basic human drive that empowers a person. The lack of mobility and independence decreases empowerment causing a great amount of stress (Dookie, 2013). This is detrimental to the quality of life, characterized by insecurity, stress, and learned helplessness (Dookie, 2013). Stress associated with death and dying highlight the need for complementary therapies that go beyond the everyday treatment in hospice (Johnson, Meadows, Haubner, & Sevedge, 2008). This is where Complementary and Alternative Medicine (CAM) come into action. Defined by the National Cancer Institute (2001), CAM is a broadened range of healing philosophies, approaches, and therapies. The mind has the capacity to affect bodily function and physical and emotional symptoms (Johnson et al., 2008). Complementary therapies reduce stress by helping patients regain control of their bodies.

One form of complementary therapy involves the use of pets to reduce stress (Katcher, 1982). We share a common space with animals in history, considering they were domesticated more than 12,000 years ago (Sorrel, 2006). For centuries, they have provided friendship, happiness, and comfort (Brodie & Biley, 1999). Florence Nightingale mentioned, "A small pet is often an excellent companion for the sick, for chronic case especially" (Kemp & Le Roux, 2009). Today, the Delta Society, a training group with a mission to improve a person's health through positive interactions with animals, uses Animal-Assisted therapy (AAT) (Delta Society, 2011). AAT is a model that involves a patient, a highly trained animal, a therapist, and a goal of pursuing specific therapeutic outcomes. The pets are considered the "co-therapists," or therapy facilitators (Zilcha-Mano, Mikulincer, & Shaver, 2011). Guidelines provided by the Centers for Disease Control and Prevention stress that the animals must be healthy, clean, well-groomed, fully vaccinated, and free of enteric parasites (MMWR Recomm Rep, 2003).

Furthermore, animals helped individuals with depression and physical illness by providing friendship, lightening spirits, a sense of security, and improved feelings of loneliness and well-being (McCulloch, 1981). Animals are unique in that they have the ability to be unconditionally loyal to those who interact with them (Roenke & Mulligan, 1998). This human-pet bond becomes an attachment bond, because of the need to be near the animal, the formation of a safe haven when close to the animal, and the pet becomes a source of relief at all times (Ainsworth, 1991; Hazan & Zeifman, 1994). Contact comfort is an unconditional bond between animals and humans that induce relaxation (Halm, 2008). AAT reduces all indicators of relaxation, such as heart rates, blood pressure, and skin temperature (Braun, Stangler, Narveson, Pettingell, 2009; Cole & Gawlinski, 2000). Additionally, AAT promotes personal healing through personal wholeness, relationships between patients, animals, staff, and environmental spaces that are transformational for the patients (Zborowsky & Kreitzer, 2008). The four known benefits of AAT are an increase in humanness, anticipation and continuity of patient-dog interaction, ability to facilitate reminiscence of past pets, and social interaction with individuals around them (Roenke & Mulligan, 1998). Animals bring a sense of normalcy to people who are hospitalized or live in health care facilities (Sorrell, 2006). The program facilities that include AAT improve quality of life, motivation and reduce isolation (Diefenbeck, Bouffar, Matukaitis, Hastings, & Coble, 2010; Horowitz, 2010). Not only are the benefits physical and emotional for the patients, surrounding relationships, and staff, but AAT is also cost-effective across a variety of different treatment settings.

The use of AAT is effective within all populations. Notably, AAT has positive effects on children with social disorders, psychiatric disorders, terminal illness and chronic pain, because they provide a sense of normalcy within their unique settings (McQuillan, 1985). For terminally ill adults, AAT is a natural pain management and emotional support, improve side effects of mood disorders, and reduce drug dependence and abuse. A decrease in loneliness and an increase in socialization with elderly patients caused by the animals address the basic needs of love, belongingness, and self-esteem. Occupational therapists use AAT to accomplish cognitive, social, and leisure goals (Scott, 1997). Colleges have AAT

programs for the reduction of stress in students caused by academics, athletics, and social recreations (Savishinsky, 1992). The presence of pets improve the patient-staff relationship, because they all provide the workers in different with comfort and support making their jobs a little bit easier (Banks & Banks, 2002; Chinner, 1991; Reed, Ferrer, & Villegas, 2012). Staff members having a positive experience with animals cause the patients to have a positive experience as well (Muschel, 1984).

In AAT, dogs are the most common pet used (Serpell, 1990). Dog owners reported significantly higher reductions in minor health problems, feel safer, and have higher levels of self-esteem compared to cat owners. Dogs are classified as preventers of ill-health and ill-psychological health (Kemp & Le Roux, 2009). The human-dog interaction positively increases dopamine, cortisol, oxytocin, prolactin, endorphin, and phenyl ethylamine levels in human and dogs (Odendaal, 1999; reviewed in Johnson et al., 2008).

Additionally, dog visits are no more costly than human visits, and they may be full time residents where they serve (Cipriani, Cooper, DiGiovanni, Litchkofski, Nichols, & Ramsey, 2013). Positive outcomes are measurable, but they can also be observable (Johnson et al., 2008). Ten human behaviors a researcher can observe from the patient towards the dog: commands, listening to information from observer, talking to dog about feelings, describing dog traits, expressing rules, evaluating dog, expressing own emotions, expressing beliefs about the dog, teasing, calling dog with nicknames, whispering, and other miscellaneous positive verbalizations (Chinner, 1991). Observing these behaviors help researchers predict what type of improvements can happen during and after patient-animal interactions.

While visiting with dogs, residents spontaneously reminisced about past events with their pets (Banks & Banks, 2002). The desire to associate with animals is a quality of life issue generated from life experiences. Significant improvements from AAT for variables such as tension, confusion, depression, anger, and fatigue increases independence and emotions, thus improving the quality of life (Cipriani et al., 2013). AAT can also be a distraction from their pain situation (Wu, Niedra, Pendergast, & McCrindle, 2002; Cole & Gawlinski, 2000).

Caprilli and Messeri (2006) examined the effects of AAT on children with terminal illness at a children's hospital in Italy. The research tested the infection rate before the animals were allowed in the hospital study. Caprilli and Messeri (2006) needed to make sure there was not a high infection rate within the hospital, because the dogs are a potential threat to the children with lower than average immune systems. One-hundred and thirty-eight children took part in the study for one year. Four dogs were gradually introduced to the children within the hospital. The results indicated that the presence of dogs did not increase the rate of infections, but the staff was still hesitant of continuing AAT for precautionary reasons. The children's experience was positive and memorable one, compared to the moments observed when the dogs were not present. All parents agreed that the therapy dogs were effective in creating a positive, de-stressing experience for their children. Caprilli and Messeri (2006) concluded that dogs work successfully with terminally ill patients and that infection rates can be kept under control as a minimum threat.

Engleman (2013) studied the benefits of using dog-assisted therapy on patients taking part in in-patient and out-patient palliative care over the course of one year. Nineteen patients agreed to participate in the study. The observations, staff responses, and patient response concluded that all patients were very content when the dog was present. The responses included feeling more relaxed, less discomfort, and having memory of home if they were an inpatient. Pain and negative emotions were both reduced. In at least five situations, the therapy dog rested their head where the patient's location of pain was to comfort them. These results suggest that dog therapy has an effect on pain reduction of both physical and emotional symptoms, quality of life, staff stress reduction, cost efficient, and decrease in use of pain medication.

In Mushcel's (1984) research, the benefits of pet therapy on terminally ill cancer patients were examined with the goal of reducing their anxiety and despair in knowing that they are going to die. Fifteen patients took part in the experiment. Prior to animal exposure, all measures indicated the patients feeling depressed about death, except for three patients who were in the acceptance stage of their upcoming death. After animal exposure, anxiety, stress, and depression were reduced, because of the comfort and natural empathy the therapy pets provided. Patients' views did not change if they comfortably accepted their upcoming death. Overall, pet therapy increased the comfort and adaptation of the terminally ill patient.

A lot of studies were unable to fully prove that terminal cancer patient's within hospice care had an improvement in their quality of life because of dog therapy. Muschel (1984), seeking for a similar result, had no significant difference. One reason there was no significant difference was because of small sample sizes. For example, Johnson et al. (2008) only used 10-12 patients. While the dogs in those studied may have not influenced every aspect of the patient's care, dogs may still have a significant effect on the quality of life in some way. Very few studies have examined the alleviation "total" pain for hospice and palliative care: physical, emotional, fear of death, loss, and spirituality (Gagnon, Bouchard, Landry, Belles-Isles, Fortier, & Fillion, 2004; Geisler, 2004; Horowitz, 2010; Skeath, Fine, & Berger, 2010).

Dogs are effective helpers for terminally ill cancer patients. (Muschel, 1984) They ease the patients' anxiety and despair and increase their comfort. The aim of the current study is to see if dog therapy can reduce stress related to the anxiety, relationship struggles, and the regrets that terminal cancer patients experience towards the end of their life. The current study proposes larger sample size and a modern approach to analyze the quality of life and modern AAT approaches. I hypothesize that the patients' quality of life will increase after being exposed to dog therapy.

PROPOSED METHOD

Participants

Approximately 200 cancer patients within hospice care will be recruited to participate in this study. To qualify for this study, the participants must be estimated to die within six months. The participants should be of good mental health and still physically capable of being in the study. Participants will be contacted through their hospice nurse to receive information about the experiment to get consent. Demographics will be collected before beginning the study.

Procedure

The study uses a within-subjects design to measure the change in quality of life (QOL) after introducing dog therapy. The study will occur over the course of three weeks. The participants will receive a pre-test to measure the participants' current quality of life. The modified QUAL-E 2004 survey was designed to measure how stress affects QOL and end of life care (Steinhauser et al., 2004) (see Appendix A). There are a total of 18 questions. The survey should take 10 to 20 minutes to complete. If the patient cannot physically write down the answers because of their declining health, the nurses will help by writing for them.

Over the course of three weeks every participant will spend four times a week with a therapy dog. Each patient will receive a dog. The dog will spend two hours every Sunday, Tuesday, Thursday, and Saturday with the patients. The environment will be unstructured, depending on where the patient is receiving hospice care. This could be at home, in a hospital, or a hospice center.

After completion of the experiment on the last visit, the patients will fill out the QAUL-E 2004 survey as a posttest to measure their current QOL. The collected data will be analyzed using an ANOVA. The patients will also fill out a six question survey about the dogs to see their level of satisfaction with their presence (see Appendix B). This survey should only take approximately one minute. As a courtesy, the patients will be able to continue to see the animal if they choose to and had a memorable experience.

CONCLUDING REMARKS

Limitations

The patients are terminally ill with cancer and there is a chance that they could die during the experiment. Caprilli and Messeri's (2006) past study found germs from dogs will not increase infection rates; however, it is still a genuine concern that needs to be taken seriously. For patients who cannot write, it is important that nurses are able to truly express what the patient is feeling and have good communication skills. Since the patients are filling out their own surveys, they can give faulty answers. Because declining health is a concern, the effects of the dog therapy may not be noticeable. There is no set breed for the study. Each breed may have a different type of effect on a patient. The patients' different types of cancer may also have an effect on their QOL improvement. Future studies should incorporate observational methods done by the staff and family members into the study, and pay attention to the how the different types of cancer can affect quality of life.

Significance

Quality of life plays an enormous role in successful hospice care (Muschel, 1984). There is an incredibly large amount of patients with terminal cancer in hospice (Dartmouth Atlas, 2014). The stress of cancer and having terminal illness is immense. There are many resources on the topic of animal therapy for terminal cancer patients and for hospice care; however, very few, if any, are on the importance of dog therapy on terminal cancer patients specifically in hospice care (Muschel, 1984). By conducting the study, society will benefit by knowing their dying loved ones will be arranged and allowed to have a canine companion by their side. Therapy dogs have a positive impact on the patients and others around. This ultimately will increase the QOL for many patients by decreasing their own stress, the stress of the staff, and the stress of the family members.

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ACKNOWLEDGEMENTS

I would like to thank Dr. Kalkstein for providing the support, encouragement, and assistance in creating my research proposal. I would also like to thank my classmates and reviewers for their support and reviewing my paper and providing me with constructive and helpful criticism.

APPENDIX A

I'd like you to think back over the last month. Please tell me the three physical symptoms or problems that have bothered you the most during that time. Some examples are pain, nausea, lack of energy, confusion, depression, anxiety, and shortness of breath.

Symptom #1_____
Symptom #3_____
Symptom #2_____

• If no symptoms were elicited, then state the following:
So, just to be sure, over the last month, you have had no physical or emotional symptoms that bothered you. If correct, skip to question #5.

Which of these symptoms or problems has bothered you the most this past week?

1. During the last week, how often have you experienced _____?

Rarely	A few times	Fairly often	Very often	Most of the time
1	2	3	4	5

2. During the last week, on average, how severe has _____ been?

Very mild	Mild	Moderate	Severe	Very severe
1	2	3	4	5

3. During the last week, how much has _____ interfered with your ability to enjoy your life?

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

4. How worried are you about _____ occurring in the future?

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

5. In general, how important are your PHYSICAL SYMPTOMS OR PROBLEMS to your overall quality of life?

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

Below is a list of statements that other people with a serious illness have said may be important. Please tell me how true each statement is for you.

6. Beyond my illness, my doctor has a sense of who I am as a person.

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

7. I worry that my family is not prepared to cope with the future.

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

8. I have regrets about the way I have lived my life.

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

9. At times, I worry that I will be a burden to my family.

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

10. Thoughts of dying frighten me.

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

11. I have been able to say important things to those close to me.

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

12. I make a positive difference in the lives of others.

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

13. I have been able to help others through time together, gifts, or wisdom.

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

14. I have been able to share important things with my family.

Not at all A little bit A moderate amount Quite a bit Completely

1 2 3
4 5

15. Despite my illness, I have a sense of meaning in my life.

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

16. I feel at peace.

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

17. In general, how important is the feeling that your LIFE IS COMPLETE to your overall quality of life?

Not at all	A little bit	A moderate amount	Quite a bit	Completely
1	2	3	4	5

Now, I have one last question.

18. How would you rate your OVERALL QUALITY OF LIFE?

Very Poor	Poor	Fair	Good	Excellent
1	2	3	4	5

APPENDIX B

I felt relaxed when the dog was present.

1	2	3	4	5
Stongly Disagree	Disagree	Neither	Agree	Strongly Agree

My visitors and staff enjoyed the dog.

1	2	3	4	5
Stongly Disagree	Disagree	Neither	Agree	Strongly Agree

The dog reminded me about pets from the past.

1	2	3	4	5
Stongly Disagree	Disagree	Neither	Agree	Strongly Agree

I enjoyed having the dog around.

1	2	3	4	5
Stongly Disagree	Disagree	Neither	Agree	Strongly Agree

The dog helped ease thought of helplessness.

1	2	3	4	5
Stongly Disagree	Disagree	Neither	Agree	Strongly Agree