

The Relationship Between Attachment

To Pets, Coping Self-efficacy and Depression:

Gender and Marital Status Differences

Vladislava Tsapova

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Business School, School of Arts, Dublin.

Supervisor: Margaret O'Donnell

Programme Leader: Dr Patricia Frazer (BA)

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Department of Psychology

Dublin Business School

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Abstract

The aim of the research was to investigate the relationship between attachment to pets, coping self-efficacy and depression, as well as look at the differences between pet owners and non-owners on levels of depression. Gender and marital status differences between pet owners and non-owners on levels of coping self-efficacy were explored. Study consisted of 112 participants (31 male, 81 females, 86 pet owners and 26 non-owners). An on-line survey, using cross-sectional mixed design, consisted of PAS pet attachment questionnaire, DASS21 depression scale and Coping self-efficacy scale. The results showed that high depression was associated with low coping self-efficacy and low attachment to pets, however no relationship between coping self-efficacy and attachment was found. No differences were found between pet owners and non-owners on depression, as well as no gender or marital status differences on coping-self-efficacy. Longitudinal qualitative research is required to further investigate gender, marital status differences on pet attachment.

Introduction

Depression.

One in seven people will suffer with depression in their lifetime, 350 million people live with it around the world, yet 50% of it goes untreated. It is one of the most common reasons for long-term sick leave and disability (WHO, n.d.), with the total cost equivalent to 1% of the total economy of Europe (Sobocki, Jonsson, Angst & Rehnberg, 2006). The aetiology of depression relates to multiple biopsychosocial factors such as genetics, stress, trauma, economic downturn and many other environmental and social factors. Depression can be long-lasting or re-occurring, and can significantly impact an individual's ability to function at work or in their daily life. Some of the biological symptoms include sleep disturbance, loss of appetite and loss of libido. Emotional symptoms include low mood, apathy, feeling of worthlessness and guilt. It was believed that each symptom is linked to a specific region of the brain and is the result of inefficient information processing and chemical imbalance. However, it is not the specific region that's affected by depression, but rather the circuitry linking the different regions. Brain imaging studies have shown that amygdala, hippocampus and prefrontal cortex all could be involved (Rang & Dale, 2015, p.570). Many of the symptoms could be categorized as either having too little positive affect (loss of happiness, joy) or increased negative affect (guilt, fear, hostility) (Stahl, 2013, p.278). Different neurotransmitters are hypothetically responsible for different emotions. The distinction in symptoms could assist in choosing the more effective treatment, such as increasing the serotonin level could improve information processing in the circuits that are believed to be linked to the feeling of fear and reduce or eliminate those feelings (Stahl, 2013, p.278). Monoamine theory proposed by Schildkraut in 1965 (Rang & Dale, 2015, p. 570) hypothesized that depression is caused by a deficiency of monoamine neurotransmitters: serotonin, dopamine and norepinephrine. At first it was thought that norepinephrine and serotonin had more impact than dopamine, but later the

theory proposed that the entire monoaminergic neurotransmitter system could be malfunctioning in different parts of the brain, depending on the symptoms of each individual patient (Stahl, 2013, p. 262). Studies show that stress has a significant impact on the brain. Hypothalamus releases CRH hormone when the stress signal is received, which stimulates the pituitary gland to release ACTH and cortisol. Animal studies have shown that injected CRH mimics some aspects of human depression (Rang & Dale, 2015, p. 571). Another hypothesis states that stress could repress the gene for BDNF. BDNF is associated with viability of brain neurons and the combination of monoamine neurotransmitter changes and suppressed BDNF may lead to neuron atrophy. It has been hypothesised that antidepressant drugs that restore the monoamine-related signal, may restore synapses and possibly some neurons by the process of neurogenesis (Stahl, 2013, p. 268). Antidepressants are widely used to restore the balance in the brain and relieve the symptoms, but more and more research finds that aetiology of depression is too complex to be able to treat it reliably with medication alone, also, success rates vary greatly and are inconsistent. Psychotherapy has been found to be effective in treating depression, however in acute and serious depression cases, therapy alone might not be effective either. Some research proposed that a combination of psychotherapy and pharmacotherapy is the most effective treatment, however the efficacy and reliability is being questioned by some researchers (Frank, Novick & Kupfer, 2005). Exercise, proper diet, getting enough sleep and social support are all very important and encouraged in the treatment of depression. Despite all this, depression is still a major challenge for all healthcare systems, with a high proportion of people not receiving proper care. The purpose of this research is to look at whether alternative resources might assist with reducing symptoms of depression without putting extra burden on the healthcare system and be enjoyable at the same time. This resource is available in most households and it does not require a prescription. Current research is going to look at the benefits of pets on depression levels.

Pet Ownership.

There were 72 million households in the European Union that had at least one pet animal in 2012, with 24% of total households owning a cat and 25% owning at least one dog. With 50% of depression cases going untreated and with more and more research supporting the benefits of pet ownership, this could be a solution to a global problem. The relationship that humans has with the animals goes back thousands of years. In the early day's humans were reliant on the animals to survive, whether using them as food, hunting, farming or protection. Although the reasons for keeping animals were mostly practical, even as early as 18th century it was recognised that people gained health benefits from being around animals. The Quaker's movement was founded in the 1650s in England by people dissatisfied with the authoritarian ways the Protestant Church treated the mentally ill. Quakers believed in the healing power of nature and their philosophy was to provide the environment so that would assist nature to take its course. Their methods produced good results with 70% of patients who have been mentally ill for less than 12 months, recovering (Whitaker, 2010). It was William Tuke, the philanthropist, who ran the asylum, that noticed the health benefits his patients gained from being around animals (Wells, 2011, p. 172). Animals were increasingly present in mental asylums throughout the 19th century. The popularity and interest in the health benefits only increased from there onwards.

The Benefits of Animals.

The health benefits gained by the presence of animals have been widely researched and range from reduced blood pressure in stressful situations to lower risk of a heart disease and reduced frequency of minor physical ailments (Wells, 2011, p.172). Physiological benefits of the interaction with pets have found support in prior research but what is interesting is that

sometimes the mere presence of a pet is sufficient, with some research finding that stroking a pet can reduce blood pressure, and other, finding lower blood pressure in response to a stressor by looking at the swimming fish in a fish tank (Wells, 2011, p. 173). Interestingly, not just physiological benefits of being around animals were found, but it seems that psychological well-being is also affected by being around animals. Study conducted by Allen, Blascovich, Tomaka & Kelsey (1991) looked at the stress response in women and found reduced stress response in the presence of a dog, compared to the presence of a friend. Possibly the non-judgmental presence of pets, the unconditional love and trust could be attributed to the reduced stress response found in this research. Various theories have been used to explain possible benefits of pet ownership. Per the Social Facilitation Theory, the presence of others increases individual arousal and affects performance (Allen et al, 1991). Role Enhancement and Role Strain theory suggested that multiple roles played by people daily could influence the well-being and relationship with pets by either putting too much strain as an added role, or by enhancing well-being by replacing failing relationships (Clark Cline, 2010, p. 118). According to the Role Strain Theory, multiple roles played in daily life, such as work, family, children, especially for females, have an impact on the over-all well-being and having a pet as an added role could possibly reduce the well-being. Role enhancement Theory on the other hand, claims that pets might replace missing relationships and enhance well-being. It has also been found in prior research that age, and marital status differences are a significant predictor of the benefits from pet ownership, with children and adolescence (Bachi, 2012; Nevin-Haas, 1993), as well as older and single people more likely to benefit (Herzog, 2007; Peacock, Chur-Hansen & Winefield, 2012).

Recognition of the benefits of animals has resulted in their wide-spread use in therapeutic settings, Boris Levinson, a child psychologist, noticed in 1969 that his patients responded more positively to the therapy in the presence of his dog. Levinson suggested that

his dog served as a “social catalyst”, helping his patients to open up (Wells, 2011, p. 173). The use of animals in hospitals, nursing homes and the use of Animal Assisted Therapy (AAT) is constantly increasing, with specifically trained therapy animals, mainly dogs, although the use of horses and cattle is becoming increasingly popular in some countries, being used to enhance the well-being of patients (Bachi, 2012; Pedersen, Nordaunet, Martinsen, Berget & Braastad, 2011). AAT has been applied for a variety of clinical problems such as undesirable behaviours, compromised mental functioning, medical conditions and autistic spectrum symptoms (Nimer & Lundahl, 2007), and the therapeutic effect of animals found some support. Nimer et al. (2007) conducted a meta-analysis of 37 studies and 12 dissertations on the use of AAT and found significant positive results in using AAT as a support therapy with increased mental well-being and reduced behavioural problems compare to control groups or alternative treatment groups, especially for children. Although it was a very comprehensive analysis, it failed to conclude who would benefit the most from such therapy and due to the variety of different settings in which those studies used the animals, it is not clear how the animals help and what therapeutic effect animals have on humans. Even though animals are widely used to enhance physical and mental well-being, the use of animals in counselling and therapy settings is also starting to grow. Counsellors utilise the human-animal bond, just as the Quakers did in 1650s, in a goal-directed intervention as part of the treatment (Stewart, Chang & Rice, 2013). They use the AAT to enhance therapeutic rapport, build a relationship and break the ice (O’Callaghan & Chandler, 2011). Animals can also be used as a transference and a projection tool in therapy, especially with children that struggle to express their emotions, where the therapist might encourage the child to do so through the animal. By asking “Is the doggy sad today?”, it could help the child to direct the emotions and express themselves. Although the use of AAT is growing amongst therapists and results are mostly positive (Bachi, 2012; Signal, Taylor, Botros, Prentice & Lazarus, 2013), majority still don’t practice it, possibly due to the

lack of comprehensive research and the assessment of risks involved (Berget, Grepperud, Aasland, & Braastad, 2013). Although, there are undeniable benefits in using animals, there are also some concerns such as, allergic reaction, infection risks, fear of animals as well as aggressive behaviour towards animals, which require careful consideration (O'Callaghan et al., 2011). With all the benefits that AAT brings, it is still not clear whether the benefits outweigh the risks and why pets help. Research shows that AAT is beneficial for treatment of anxiety and depression as part of the therapy (Nimer et al., 2007; Stewart et al, 2013), where pets seem to have more general health benefits for their owners (Allen et al., 1991; Allen, n.d.; McConnell, Brown, Shoda, Stayton & Martin, 2011; Wells, 2011).

Previous studies around pet ownership and mental health well-being have tried to identify whether pets do improve mental well-being, and if so, how do they help. A number of reasons could explain it. Firstly, pets create a natural bond with humans, which could explain the benefits of pets in therapy. Companionship could be a tool to reduce loneliness and isolation, which could be especially beneficial for the elderly. Animals could facilitate social interaction through increased contact with other pet owners and general public, who are more likely to start the conversation in presence of a cute dog, although research found that any animal can enhance such interaction (Wells, 2011, pp 174-175). This, in turn, could especially benefit those suffering with depression, with one of the outcomes being reduced social contact and increased social isolation. McConnell et al. (2011) looked at whether pets provide social support to people and whether they compete with or compliment human social support. The study found that pet owners fared better on over-all well-being measures, it also found that people benefited from pets the most when their social needs were met. What came clear in this study is that pets contribute to the over-all well-being and to the fulfilment of people's social needs independent of the quality of the human social support. Social isolation and rejection is a very painful experience, pets can act as a social lubricant and facilitate interaction which might

help people to create positive social support, enhance well-being and benefit more from the pet ownership. Multiple research supported this idea with a strong evidence that pets can increase human well-being, reduce anxiety and depression and enhance a feeling of autonomy and self-esteem (Wells, 2011, p. 173; McConnell et al., 2011). Sensory stimulation, such as stroking a pet, allows to pay attention to the outside world, which can also reduce withdrawal tendency present in depression. Chandler, Fernando, Minton & Portrie-Bethke, (2015) conducted a qualitative study to look at the value of pets in counselling practices and found a strong evidence of the importance of pets in people's lives. The participants found that pets provided them with emotional and physical nurturance, such as being comforting, help to relax and understand them, gave the participants a sense of purpose, enhanced social interaction and provided a friendship. Even though the sample size consisted of only 10 participants, so the validity of this study could be criticised, it provided an invaluable qualitative data on the benefits of pets and the role of pets in people lives. It is however important to note, that factors such as the nature of the relationship with pets, were not explored. The downsides of being a pet owner should also be explored as some participants expressed negative feelings with regards to the pets destroying the house, being a nuisance and the difficulty of coping with the loss of a pet. Furthermore, some researchers argued that having to care for the animals might have the opposite effect on mental health and support that pets provide, is not equivalent of that of human interaction, and strong attachment to pets can be a significant positive predictor of psychological distress (Peacock et al., 2012). The purpose of this study is to investigate whether pet owners do benefit from pet ownership by having reduced levels of depression, compare to the pet non-owners.

Pet Attachment

Although according to Peacock et al. (2012) strong attachment to pets might be detrimental to the vulnerable and distressed people, the role of attachment to pets for human

mental well-being, as well as correlation between attachment to pets and depression and anxiety has been a subject to further research. The rationale could be to investigate whether it is the pet ownership or the relationship with the pet that is beneficial for human well-being. Bowlby's Attachment theory could explain the need of humans for attachment and the benefits that pets play, especially for single females (Quinn, 2005), however there are some inconsistencies in research, with Bagley & Gonsman (2005) finding no significant gender and marital status differences in pet attachment. According to Bowlby, babies develop attachment patterns based on the care they receive from their caregivers. These patterns remain quite stable and persist from the childhood into the adulthood, affecting overall relational behaviours, feelings and expectations (Quinn, 2005). Some evidence suggests that pets are perceived as equivalent or, similar to, children, hence the attachment style might be similar. There is some evidence that pets are seen as the substitute for children and parents, and that the relationship with dogs provides the sense of emotional reassurance and feelings of security (Quinn, 2005). This would imply that females are more likely to be attached to pets as emotional reassurance is more important for them, however Herzog (2007, p.10) conducted a review of literature on pet attachment and did not find significant differences between male and female pet attachment. Although the majority of research has been focused on pet ownership, some studies have looked at the pet owners, and the attachment to pets as the main component of the benefits pet ownership provides, however the results of these studies have been inconclusive and mixed with some support that attachment to pets reduces depression and anxiety (Nevin-Haas, 1993; Quinn, 2005), as well as feelings of loneliness and fear (Sable, 2013). Recent findings from neuroscience demonstrate the links between underlying attachment processes and brain activity in both animals and humans, which confirms that the attachment to pets has a similar reaction in the brain as the attachment to humans (Sable, 2013). Just looking at a dog, stroking or talking to it, can trigger oxytocin, a hormone which

elicits feelings of pleasure and eases stress. Oxytocin is known to boost one's immune systems, lower the production of stress hormones and diminish feelings of fear and danger (Olmert, 2009 as cited in Sable, 2013). This understanding of oxytocin can help explain the results of a UCLA study of animal assisted therapy which found that only 12 minutes with a visiting dog could reduce loneliness and anxiety as well as the amount of medication needed for pain (Olmert 2009 as cited in Sable, 2013). Interestingly, research conducted by Quinn (2005) did not find a significant relationship between attachment to pets and levels of depression or anxiety. One limitation of this study could be that the data was collected at the vet hospitals which could limit the variability of the sample. Multiple studies have looked at the benefits of the pet ownership, most find that pets do benefit in many ways, however very little statistical significance have been found to prove or provide more clarity as to how and whom the pets help. Current research is going to look whether attachment to pets improve levels of depression in more indirect manner.

Coping Self-Efficacy

Folkman and Lazarus (1980, as cited in Krohne, 2002) defined coping as “the cognitive and behavioural efforts made to master, tolerate, or reduce external and internal demands and conflicts among them”. Coping has been found to have a strong negative correlation with depression. Most coping research derived from the Stress Theories which could be categorised into Selye's systematic theory and Lazarus Psychological Theory of stress (Krohne, 2002). According to Lazarus and Folkman (1986, as cited in Krohne, 2002) stress is regarded as the relationship between the individual and their environment which is appraised as significant to the individual's well-being and in which the demands exceed the available coping resources. Although the action coping such as problem-focused coping and emotion-focused coping are used to identify and deal with stress, other factors such as the resources that preserve well-being also play an important role. It can be further inferred that pets could be

more beneficial for female population due to different coping strategies used. Matud (2004) examined different coping strategies applied by male and female, and found that female apply more emotion-focused coping, hence emotional support provided by pets might be more beneficial to them. Social Support, such as family, self-efficacy, optimism and hardiness have all been found to impact one's ability to cope (Krohne, 2002). Current research is going to look at gender and marital status differences of pet owners and non-owners with regards to coping-self-efficacy. Previous research found some support that pet ownership has an impact on self-esteem as well as support that pets enhance individual's social support network (Beetz, Uvnäs-Moberg, Julius & Kotrschal, 2012; McConnell et al., 2011). Depressed individuals are more likely to be emotionally depleted and socially disconnected (Brownhill, 2004), however there is a possibility that pets could improve one's ability to cope and to deal with depression.

One of the important aspects of coping is self-efficacy, which is defined as the beliefs about own's ability to produce certain level of performance that exercise influence over events that affect an individual's life (Bandura, 1994). Strong sense of efficacy enhances personal well-being in many ways, such as increased intrinsic motivation, greater resilience in a face of failures and setbacks and a sense of control over threatening situations. Such outlook increases personal achievements, reduces stress and vulnerability to depression (Bandura, 1994). According to Bandura (1994), people interpret their stress reaction as a sign of vulnerability and often rely on somatic and emotional states to judge their capabilities. Pets natural ability to reduce stress could increase the physical stamina and sense of self-believe. Mood can also affect judgments of self-efficacy, with positive mood enhancing it. Prior research found some evidence of pets having a positive effect on mood (Picard, 2015). Bandura (1994) found that one of the ways to modify self-beliefs of efficacy is to reduce stress reactions and alter negative emotional state. Prior research on pet's benefits has found both, stress reduction and positive mood increase, however no known research has looked at whether these benefits have

a relationship with coping and self-efficacy, and whether combined, they have an impact on depression.

Affective processes have a strong influence on anxiety and depression. Individuals ability to have control over disturbing thought patterns, as well as intense apprehension and phobic reactions impair functioning and create a sense of danger. Positive experiences can exercise over potential threats and build coping skills (Bandura, 1994). Pets ability to provide safe and mentally secure environment, especially for females, and their non-judgmental nature could enhance the ability to build strong coping skills which could be then further developed without presence of a pet.

A low sense of social-efficacy can also lead to depression (Bandura, 1994). Social isolation is strongly linked to depression (McConnell et al., 2011). One of the benefits of pet ownership has been found their ability to increase social interaction, which in return may improve the sense of social-efficacy. Current research is going to further investigate whether the relationship between attachment to pets and coping self-efficacy predict levels of depression.

Rationale

Numerous research has looked at the benefits of pet ownership, as well as benefits of AAT and other interventions. Most studies have found some positive results (Nimer et al., 2007; Wells, 2011), however most results are still inconsistent and do not provide clarity on why the pets help and who benefits most. There is no known research that has looked at the relationship between levels of depression, coping self-efficacy, and attachment to pets in one study. The purpose of this research is to investigate whether individual's depression levels are affected by coping self-efficacy ability as well as attachment to pets. It will be further explored whether the nature of the relationship with the pet has an impact on coping self-efficacy.

Female were found to place greater value on emotionally intimate relationships (Risman, 1998, as cited in Clark Cline, 2010). Clark Cline (2010) also found that women are viewed as valuing companionship and emotional relationships, where men are viewed as valuing activity-based relationships, hence females might benefit more from pet ownership. It was also found by Clark Cline (2010) that single pet owners benefit more than married, due to the time constraints and extra responsibilities. Based on these facts, demographic variables, such as gender and marital status, are going to be explored to further investigate whether certain cohorts of the population are more likely to benefit from the pet ownership.

Hypothesis

1. It is hypothesised that coping self-efficacy and attachment to pets will predict level of depression.
2. It is hypothesised that there will be a significant difference between the pet owners and non-owners on levels of depression.
3. It is hypothesised that there will be a significant difference between the marital status of participants, pet ownership and coping self-efficacy.
4. It is hypothesised that there will be a significant difference between gender, pet ownership and coping self-efficacy.
5. It is hypothesised that there will be a significant difference between various roles pet plays in the household and coping.

Methods

In order to proceed with this research, an ethical approval, with regards to the methodology and participants, was sought and it was granted by the ethical board at Dublin Business School.

Participants

The total of 112 participants participated in the study, 31 males (27.7%) and 81 females (72.3%). The age range was between 18 and 45+, with 52.7% of participants being 45+. The sample consisted of 76.8% pet owners and 23.2% non-owners, and 66.1% of the sample were married or in a partnership.

A snowball convenience sampling was used to recruit the participants from a general population via an advertisement on a Facebook page. Both, pet owners and non-owners were encouraged to participate, the only criteria were to be over 18, which was clearly stated in the advertisement and the debrief regarding the nature of the study (see Appendix 1). Information regarding support services was provided on the last page of the questionnaire pack. All participants had to give their consent in order to be part of the study, which was clearly stated

as part of the debrief. A Google Forms link with the instructions was attached. The participants were informed that participation is completely voluntary, confidential and that specific answers could not be attributed to a single person.

Design

A cross-sectional quantitative mixed research design was used in this study. It consisted of three self-reported questionnaires (see Appendix 2), as well as demographic questions regarding age, marital status, gender, pet ownership and the role of the pet in the household.

A within participant's design was used to look at the relationship between attachment to pets, coping self-efficacy and depression, with the depression being a criterion variable and attachment to pets and coping self-efficacy being predictor variables. A between participant's design was used for the other four hypotheses. Second hypothesis looked at the differences between pet owners and non-owners (independent variable) on levels of depression (dependent variable). Third hypothesis looked at the differences between pet owners and non-owners (independent variable), and their marital status (independent variable) on coping self-efficacy (dependent variable). Fourth hypothesis looked at the gender differences (independent variable), pet ownership (independent variable) and coping self-efficacy (dependent variable). Fifth hypothesis looked at the role of pet (independent variable) and attachment to pets (dependent variable).

Materials

All participants were asked a series of demographic questions at the start of the survey, these were; the age group, sex, marital status, pet owner/non/owner and the role of the pet in the household (companion/friend, breeding, security or other). Based on whether the participant was a pet owner or non/owner, two or three questionnaires were required to be filled in. If the participant was a non-owner, he/she was instructed to skip the first

questionnaire and proceed to the second. The participants were asked to be as truthful as possible and not to spend too much time on each question.

First questionnaire was a 27 item CENSHARE Attachment to pet's scale (PAS) by Holcomb, Williams & Richards (1985). The questionnaire measured the attachment to pets on a 4-point Likert scale from 1 (Almost Always) to 4 (Almost Never), with the lower the score meaning higher attachment to pets. It consisted of two subscales, first looking at the "Relationship Maintenance" (16 questions), which looked at the aspects of attachment through physical interaction, with questions such as "You like to touch and stroke your pet" and "You talk to your pet as a friend". The second subscale (11 questions) looking at the "Intimacy" with the focus on attachment surrounding emotional importance. The type of questions asked were: "Within your family, your pet likes you best" and "When you feel bad, you seek your pet for comfort". Current research is going to look at both subscales in the analysis as it is believed that both, Relationship maintenance and Intimacy are important factors of the attachment. The total score was obtained by first obtaining reverse-score items (2,13,19,20,27) and summing up the responses. This measure has been used in previous studies on companion animals, however no reliability scores were found (Peacock et al., 2012), hence it was tested using Cronbah's alpha, which found strong internal reliability for both, the Relationship maintenance ($\alpha=.85$) and Intimacy ($\alpha=.76$).

The second questionnaire was a Coping Self-Efficacy scale developed by Chesney, Neilands, Chambers, Taylor & Folkman, (2006) to assess the perceived self-efficacy for coping with challenges and threats. It was created based on the stress and coping theory and the Ways of Coping Questionnaire with the consultation from Dr Alfred Bandura of Stanford University (cite). It consisted of 26 items which were summed up to obtain the total score and it had asked the participants to rate on a scale from 0 (cannot do it at all) to 10 (certainly can do), how well they could do the following when going through challenges, "Keep from getting

in the dumps”, “Talk positively to yourself” and “Keep from feeling sad”. The higher score meant better self-efficacy to cope. Coping self-efficacy internal consistency and test-retest reliability was strong for all factors (alphas between 0.80 and 0.91), and Predictive validity analyses showed that “residualized change scores in using problem- and emotion-focused coping skills were predictive of reduced psychological distress and increased psychological well-being over time” (Chesney et al., 2006). Internal reliability using Cronbah’s was $\alpha = .99$.

The last section comprised of a self-administered 21 item Depression Anxiety and Stress Scale (DASS) by Lovibond & Lovibond (1995), which is a short version of the original 42 item scale. The short version has mostly been used for the research purposes, where the full version has been used in the clinical setting and for the diagnosis. This scale was designed to measure the negative emotional states of depression, anxiety and stress over the past week and it consisted of the three subscales measuring the above. Depression subscale was designed to assess symptoms such as hopelessness, anhedonia and lack of interest, and consisted of 7 statements such as “I found it difficult to work up the initiative to do things” and “I felt that I had nothing to look forward to”. The anxiety subscale consisted of 7 items and assessed symptoms such as autonomic arousal, situational anxiety and anxious affect by using statements such as “I was aware of dryness of my mouth” and “I felt I was close to panic”. The stress subscale assessed symptoms such as difficulty to relax, irritability and impatience by using the statements such as “I tended to over-react to situations” and “I found it difficult to relax”. It was scored on a four point Likert scale that ranges from 0 “Did not apply to me at all” to 3 “Applied to me very much, or most of the time”. The scores were obtained by summing up the responses of subsequent subscales and multiplying by two to get the total score. DASS has been widely used in research and has shown a very strong internal validity and test-retest reliability with the internal consistency of the DASS being .96 (depression), .89 (anxiety), and .93 (stress), and the test-retest correlations for a two-week period were .71

(depression), .79 (anxiety), and .81 (stress) (Lovibond & Lovibond, 1995 as cited in Quinn, 2005).

Procedure

Potential participants were prompted to click on a link attached to the advertisement, which took them to the page explaining the nature of the study, the right to withdraw at any time, as well as ensuring the confidentiality and anonymity of the participants. The awareness was raised about the sensitivity of the questions and support services details were provided on the last page. The researcher and the supervisor details were provided for any further questions. Participants were informed that by taking part in the study, they consent to participate, as well as confirm being of the age of 18.

Following section consisted of the demographic questions, such as the age group, gender, marital status and whether they were a pet owner. Pet owners were prompted to specify what role did the pet play in the household and proceed to the next section. Non-pet owners were instructed to skip the first section and move to section two.

All participants were required to fill in subsequent two questionnaires following the instructions provided at the start of each section.

On the last page, the participants were thanked for taking part in the study. Completion of the survey took approximately five minutes. The information sheet, as well as all questionnaires and the debriefing sheet can be found in the appendices for further information.

All ethical guidelines as prescribed by the Psychological Society of Ireland were followed. The participants could withdraw at any time and were informed regarding confidentiality and storage of data. The details of support services were provided (see Appendix 3) and participants were warned that some questions may cause mild distress.

Results

A series of descriptive and inferential statistics test were conducted to interpret the results, using the SPSS in version 24. Two-tailed analysis were run with a level of statistical significance of $p < .05$.

Descriptive Statistics

The sample consisted of 112 participants, significantly more female, 81 (72.3%), than male participants, 31 (27.7%), of which 86 or 76.8% were pet owners, with 62 females and 24 males. The sample consisted of 20 single (17.9%), 74 married/partnership (66.1%) and 18 widowed/divorced (16.1%) participants. The measures of central tendency and dispersion were carried out for the Attachment to pets (Relationship), Attachment to pets (Intimacy), Depression and Coping Self-efficacy. As it can be seen in Table 1 below, male participants scored higher on depression levels ($M = 6.77$, $SD = 4.34$), than female participants ($M = 4.54$, $SD = 4.88$). The mean score across both groups was within normal depression levels, 0-9 being normal, 10-13 – mild, 14-20 being moderate and 21-27 being severe. Interestingly coping self-efficacy scores were also higher for male participants ($M = 149.58$, $SD = 54.39$), than female

participants ($M=142.75$, $SD=69.31$). Across the pet owners, females were more attached to pets for both, Relationship Attachment ($M=27.24$, $SD=6.42$) and Intimacy Attachment

	Gender	N	Mean	SD
Depression	Male	31	6.77	4.34
	Female	81	4.54	4.88

($M=17.45$, $SD=5.17$),
 than male participants,
 for Relationship Attachment ($M=33.04$, $SD=6.75$)

and Intimacy ($M=19.37$, $SD=3.64$).

Table 1: Descriptive statistics for Depression, Attachment to pets and Coping Self- efficacy

Attachment to pets Relationship	Male	24	33.04	6.75
	Female	63	27.24	6.42
Attachment to pets Intimacy	Male	24	19.37	3.64
	Female	62	17.45	5.17
Coping Self-Efficacy	Male	31	149.58	54.39
	Female	81	142.75	69.31

Inferential Statistics

Inferential statistics using Spearman Rho, Two-Way between groups ANOVA and Mann Whitney U were conducted.

First hypothesis looked at the correlation between attachment to pets, coping self-efficacy and depression. Multiple Regression could not be run, as the assumptions were broken, therefore a series of Spearman's Rho tests were run. As it can be seen in Table 2 below, Spearman's Rho correlation found that there was no significant association between coping self-efficacy and attachment to pets (relationship) ($r_{s(87)} = -0.02$, $p = .971$), or attachment to pets (intimacy) ($r_{s(86)} = 0.12$, $p = .276$). However, a Spearman's Rho found that there was a small negative significant correlation between coping-self-efficacy and depression ($r_{s(112)} = -0.27$, $p = .005$). $R_s = .27 = (.27)^2 = 0.07$. Therefore, coping self-efficacy accounts for 7% of the variance between depression scores, meaning that higher coping self-efficacy is associated with lower depression scores. A Spearman's Rho correlation also found that there was a small positive significant relationship between attachment to pets (relationship) and depression ($r_{s(87)} = 0.23$, $p = .030$). $R_s = .23 = (.23)^2 = 0.05$. Therefore, attachment to pets (relationship) accounts for 5% variance between depression scores. Lower score on attachment means higher attachment, therefore higher attachment is associated with lower depression. Interestingly,

there was no significant association between attachment (intimacy) and depression scores ($r_s(86)=0.12$, $p=.283$).

Table 2: Spearman Rho Correlation (r_s) between attachment to pets, coping self-efficacy and depression

****Correlation is significant at the 0.01 level (2-tailed)**

***Correlation is significant at the 0.05 level (2-tailed)**

Variable	Attachment to pets Relationship	Attachment to pets Intimacy	Coping self- efficacy	Depression
Depression	0.23*	0.12	-0.27*	1.00
Attachment to pets Relationship	1.00	0.70**	-0.01	0.23*
Attachment to	0.70**	1.00	0.08	0.12

pets Intimacy

Coping self- efficacy	-0.01	0.08	1.00	-0.27*
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Further analysis was conducted to look at the demographic variances between gender, age and marital status on attachment to pets (relationship), which is shown in a Table 3 below. A two-way between groups ANOVA examined the role of gender and age on levels of attachment (relationship) and found no significant interaction effect ($F(2,81)=1.60$, $p=.208$). However, a main effect was reported for gender ($F(1,81)=14.27$, $p<.001$) with a small effect size (.15). No main effects were reported for age ($F(2,81)=1.18$, $p=.312$). A two-way between groups ANOVA examined the role of gender and marital status. It found no significant interaction effect ($F(1,81)=0.40$, $p=.668$). However, a main effect was reported for both, gender ($F(1,81)=6.39$, $p=.013$) with a small effect size (.07), and marital status ($F(2,81)=3.43$, $p=.037$, with a small effect size (.08). Post hoc analysis confirmed that there were significant differences between single group and married group (mean difference=5.94, $p=.029$, CI (95%) 0.50 – 11.38).

A further Mann Whitney U analysis looked at the depression levels differences between male and female, but for the pet owners only, and revealed that male pet owners (mean rank=55.46) and female pet owners (mean rank=39.13) differed significantly on depression levels ($z=-2.70$, $p=.007$).

Table 3: ANOVA table for pet attachment (relationship) differences between gender, marital status and age.

Variables	Groups	N	Mean	SD	F	dfs	p
Gender	Male	24	33.04	6.75	14.27	1	<.001
	Female	63	27.41	6.51			
Age	18-34	23	28.61	8.22	1.18	2	.312
	35-44	16	30.44	6.81			
	45+	48	28.64	6.53			
Gender*Age					1.60	2	.208
Marital Status	Single	9	33.89	8.89	3.43	2	.037
	Married	62	27.95	6.37			
	Divorced/widowed	16	30.12	7.38			
Gender	Male	24	33.04	6.75	6.39	1	.013
	Female	63	27.41	6.51			
Marital Status*OwnPet					0.40	2	.668

As it can be seen in Figure 1 below, although the age difference was not significant, 18-34 (group 1) male participants (M=38.50, SD=20.51) were less attached to pets, where 45+ (group 4) (M=31.13, SD=4.90) were more attached. Female participants were more consistent across age groups, with 18-34 (group 1) (M=27.67, SD=6.52) and 45+ (group 4) (M=27.51, SD=6.93). Due to low number of the participants in the initial group 1 – 18-24, it was decided to collapse groups 1 and 2, thus making an age group of 18-34.

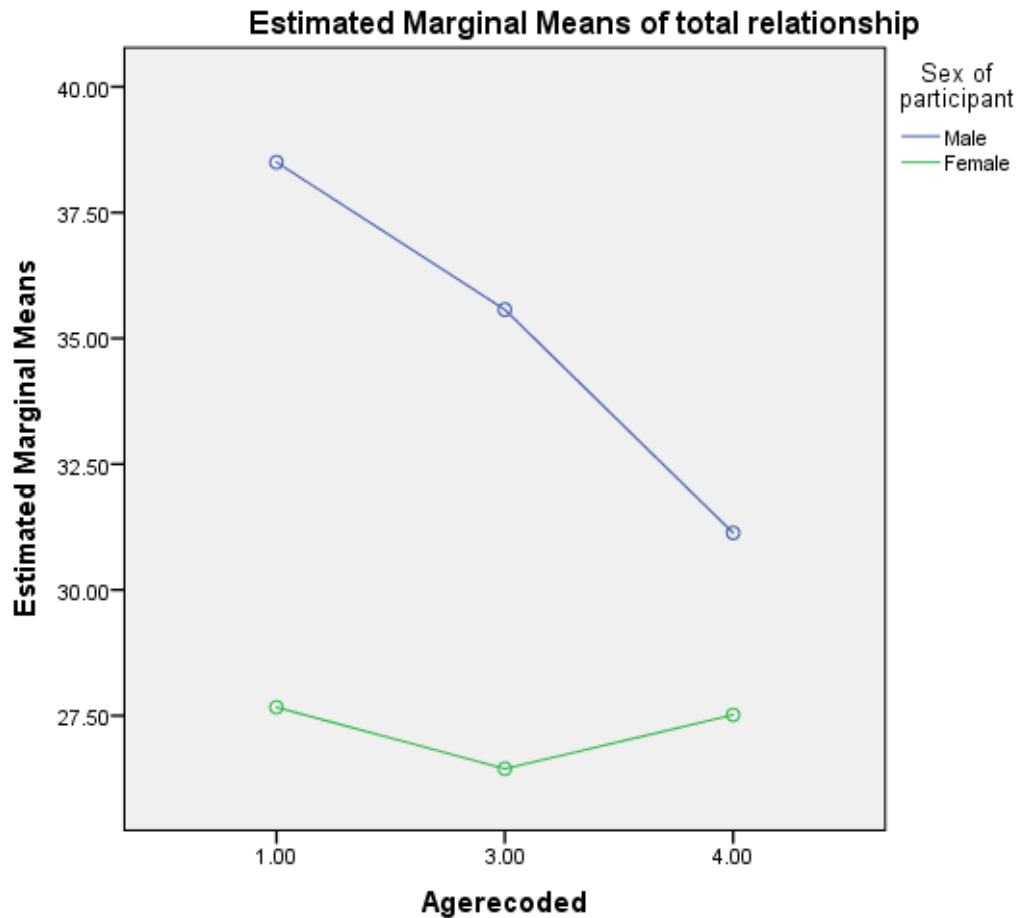


Figure 1. Gender and Age differences in Attachment to pet's

Second hypothesis looked at the differences of pet owners and non-owners on levels of depression. A non-parametric Mann-Whitney U test was performed, and it revealed that pet owners (mean rank=56.48) and pet non-owners (mean rank=56.58) did not differ significantly ($z=-.014$, $p=.989$), therefore the null hypothesis was accepted.

Third hypothesis looked at the marital status and pet ownership differences in coping self-efficacy. A two-way between groups ANOVA was used to perform the test and found no significant interaction effect ($F(2, 106)=0.63$, $p=.534$). As it can be seen in a Table 4 below, no significant main effect was found for marital status ($F(2,106)=0.41$, $p=.663$), or pet ownership ($F(1,106)=2.52$, $p=.116$), therefore the null hypothesis was accepted.

Fourth hypothesis looked at the gender and pet ownership differences in coping self-efficacy. A two-way between groups ANOVA was used to run the test and found no significant interaction effect ($F(1,108)=1.28, p=.260$). As it can be seen in Table 4 below, no main effects were reported for gender ($F(1,108)=0.03, p=.855$), or pet ownership ($F(1,108)=0.31, p=.578$), therefore the null hypothesis was accepted.

Table 4: ANOVA table for coping self-efficacy differences between gender, marital status and pet ownership.

Variables	Groups	N	Mean	SD	F	dfs	p
Gender	Male	31	149.58	54.39	0.33	1	.855
	Female	81	142.75	69.31			
OwnPet	Yes	86	140.80	68.30	0.31	1	.578
	No	26	157.35	53.71			
Gender*OwnPet					1.28	1	.260
Marital Status	Single	20	145.25	56.76	0.41	2	.663
	Married	74	144.27	69.28			
	Divorced	18	145.50	60.65			
OwnPet					2.51	1	.116
Marital Status*OwnPet					0.63	2	.534

Fifth hypothesis should have looked at coping self-efficacy differences between different roles that pet plays in the household, however as it can be seen in Figure 2 below, 84 (92.31%) of pets were companion/friend, 4 (4.4%) were for security/protection, and 3 (3.3%) were other, therefore it was chosen to run the frequencies instead.

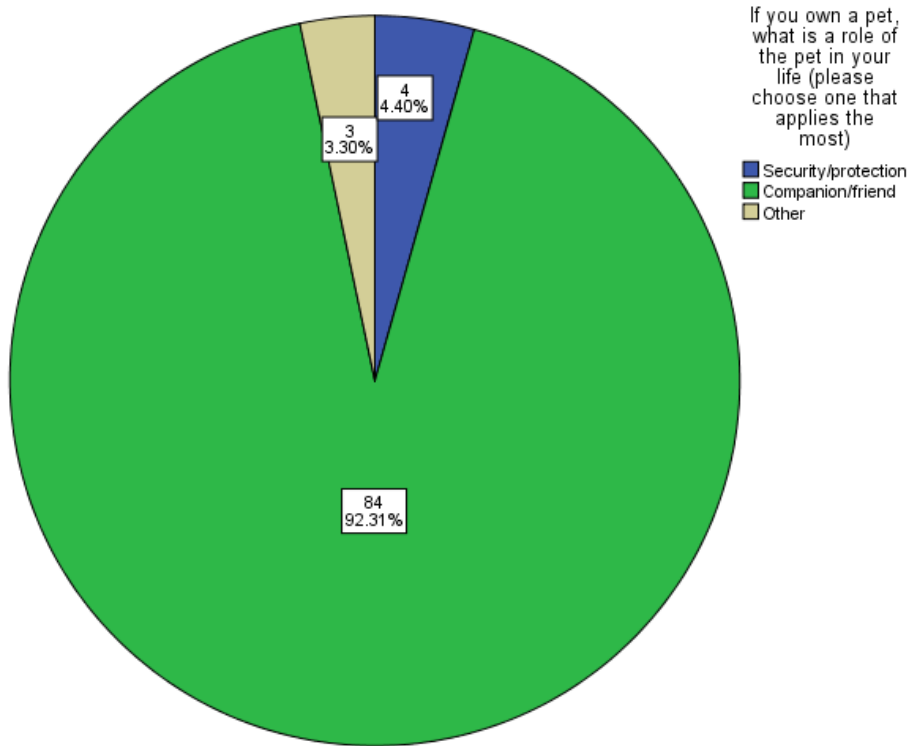


Figure 2. The Role of pet in the household

Discussion

The aim of the current research was to investigate whether coping self-efficacy as well as attachment to pets predict levels of depression. It was further explored whether there are differences between pet owners and non-owners on levels of depression. Gender and marital status differences of pet owners and no-owners on levels of coping self-efficacy were also explored.

The results of a first hypothesis showed that there was a small negative correlation between depression and coping self-efficacy, meaning higher coping self-efficacy was associated with lower depression, which is consistent with prior research (Vitaliano et al., 1990). There was no correlation between coping self-efficacy and attachment to pets, this could not be verified by prior research as it was not explored in the past. There was a small positive correlation between attachment to pets (relationship maintenance), but not for attachment (intimacy), the higher score for attachment meant lower attachment, hence it was found that higher attachment to pets (relationship maintenance) was associated with lower depression. Due to the inability to run the regression, it could not be established whether coping self-efficacy and attachment together predicted the depression scores, however since there was no correlation between attachment to pets and coping-self-efficacy, it was inferred that the two variables are not interrelated, hence affecting depression level individually. Based on these results, the alternative hypothesis can be partially accepted. Second hypothesis looked at the depression level differences between pet owners and non-owners, the results showed that there were no significant differences, which is consistent with prior research (Clark Cline, 2010), hence the alternative hypothesis was rejected. Third and fourth hypothesis looked at the gender and marital status differences of pet owners and non-owners on levels of coping self-

efficacy and found no significant differences for any of the variables, therefore the alternative hypothesis was rejected. Further analysis looked at the gender, age and marital status differences on attachment to pets to further establish the association with depression. The results showed significant gender and marital status but not age differences in attachment to pets, with single males being the least attached, and married females most attached to pets, it was further discovered that male pet owners had higher depression levels than female pet owners. It was also noted that although, there were no significant age differences, the attachment to pet's gap between male and female decreased with age. These results are consistent with prior research on gender but contradict the results on marital status differences (Quinn, 2005), however the results contradicted Bagley et al. (2005) findings of no gender or marital status differences on pet attachment. The last hypothesis looked at the role of pet in the household and coping self-efficacy. Frequencies were run due to the majority of pets being a companion/friend. Although the analysis could not be conducted, frequencies showed that 92.31% of pet's role was as a companion which could clarify the reasons behind the ownership of pets and the role they fulfil in most households.

While the general association between animals and human mental well-being is not conclusive, some research found that pets are good for mental well-being (Cline, 2010; McConnell et al., 2012), while other concluded that pets might put on extra strains on vulnerable people and actually cause more distress, than benefit (Peacock et al., 2010). Although, McConnell et al. (2012) found that pet owners fared better on the over-all well-being scale, the differences were small and only for some of the measures, it could also be due to the fact that well-being comprises of more general measures. The results of this research showed no differences on depression between pet owners and non-owners, which is consistent with prior research (Garrity, Stallones, Marx & Johnson, 1989), however, current research is consistent with the findings that it is not the ownership per se that benefits, but the relationship

and attachment to pets that play a more important role (Peacock et al., 2012, p.293; Garrity et al., 1989). Interestingly, the research on attachment to pets had found conflicting results, with Quinn (2005) finding no relationship between attachment to pets and depression, it should be noted however that he used different attachment scale compare to this research. PAS scale has the ability to look at the subscales of relationship maintenance and intimacy separately, which could explain different outcome. Interestingly, looking at the demographic differences in attachment to pets, current research highlighted some inconsistencies. According to prior research single females benefit more compare to married females (Clark Cline, 2010; Tower & Nokota, 2015), however, Herzog (2012) didn't find significant gender differences in pet attachment and Bagley et al. (2005) found no significant gender and marital status differences on pet attachment. Looking at the gender and marital status differences, current research found that married females were significantly more attached compare to single females and there were no significant differences between married and divorced/widowed females, similar trend is seen for males, which it is consistent with Clark Cline's (2010) findings that males seem to be significantly less attached to pets than females. This contradicts the Role Enhancement and the Role Strain theory that pets could replace failing relationships, instead it supports McConnell et al. (2012) findings that pets provide important social support but not at the expense of the human social contact, but rather pets enhance the support network and compliment it. This could be further confirmed by the significant differences found for the attachment to pets (relationship maintenance) but not attachment (intimacy), showing that physical interaction with the pet can have more benefits, however seeking emotional confinement in the pet, instead of human interaction might not be beneficial. Consequently, it should be noted that being single or divorced doesn't mean being lonely, it could be that single and divorced people have less daily time constrains/responsibilities, with pets being more of a distraction from a daily routine and daily stresses, providing an outlet and comfort through

physical interaction for married pet owners. This could be further confirmed by the results on the role of pet in the household, with majority being referred to as a friend or companion, thus possibly explaining the relationship between attachment and depression. Interestingly, current research found males scored higher on depression levels than female, which contradicts the theory that females are more prone to depression, highlighting however the positive benefits of pets. It should be noted however, that sample consisted of significantly more females than males, thus male sample representation may not be generalized. Interestingly, although there were no significant gender differences on coping-self-efficacy, female pet non-owners scored slightly higher than pet owners. This could also mean that pet non-owners have slightly higher self-efficacy to employ effective coping strategies, where pet owners, especially female use more emotion-focused coping strategies, which were found to be less effective.

Limitations of the current research must be taken into account when interpreting the results. It could be inferred that the results found for the relationship between attachment to pets and depression are due to the current sample not being taken from a vulnerable population, as it consisted of generally healthy people with depression scores mostly being low, thus not completely contradicting Peacock et al. (2012) findings. It should also be mentioned that only 5% of variance could be explained by the relationship between those variables, thus there could be no causal explanations drawn from these results. Also, the relationship found does not mean that pets reduce depression scores, it is possible that pet owners possess personality traits that make them less likely to be depressed. Another important factor is that the sample was self-selected, thus possibly people that do find the benefits from being around pets were more likely to respond. The representations of each category were far from even, especially between pet owners and non-owners, as well as gender and marital status categories. Small representation of male participants could have skewed the gender differences on depression, which were contradicting general finding of females being more likely to be depressed. In

saying that, there could be other explanations to that, such as males being less likely to label themselves as being depressed or dealing with symptoms differently. Single and married participant representation could have skewed the findings of single participants being less attached than married, which also contradicts prior research. Only Facebook users could participate in the research, meaning those that don't have access to Internet or are not Facebook users, could not participate, which could have limited generalizability of the findings. Another limitation is a self-reported measure used in the study, which could imply that some biased responses were present. The order of questions in the study with a pet questionnaire being first, could have impacted the results on depression scores, as pleasant thoughts of a pet could have increased the mood. Despite all this, current study had significantly added to the research on pet attachment to date. This was a first study to look at the relationship between attachment to pets and coping self-efficacy, although there were no significant results found, it added to our understanding on reasons behind benefits of pets. This research also contradicted the findings that single pet owners are more attached to pets than married pet owners, thus opening new avenues for research on the reasons why pets are beneficial. Most research had used a very narrow sample of participants, being college students, pet owners at vet clinics or parks. An on-line survey allowed to use a wider sample of the population, thus being a limitation and a strength at the same time. Another strength of this research is the finding that it is attachment based on the physical interaction rather than creating intimate relationship that is beneficial. This is an important finding for future use of animals as part of the alternative therapy, where careful consideration of when and how to use the animals is needed. It should also be mentioned, that although pet attachment was significantly lower for males, it doesn't mean that males are less likely to benefit. Females have a naturally nurturing nature and might value companionship more, however with age this gap seems to get smaller, thus further research needs to focus more on male population, as it

can't be inferred that lower attachment means less benefits. This can be further supported by findings from the project POOCH, which focused on male juveniles in prisons and the benefits of looking after abandoned and abused animals. The results from this project showed greater display of honesty, empathy and social growth following looking after the animals (Wells, 2011, p. 174). Furthermore, not all questions can be answered statistically, people are attached to pets for different reasons and under different circumstances, longitudinal qualitative research is needed to understand these variations better.

In summary, current research considerably contributed to the knowledge and understanding of why pets are good for us and what cohorts of population seem to benefit the most. High attachment to pets was associated with low levels of depression, with significant gender and marital status differences. It was also found that majority of pets were playing a role of a companion, thus shedding some light on the reasons behind pet ownership. Interestingly, no differences on depression levels were found between pet owners and non-owners, possibly implying that different coping strategies are used by pet owners and non-owners, this could be further confirmed by non-significant differences on coping self-efficacy between pet owners and non-owners.

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Appendices

Appendix 1 (Debrief)

My name is Vladislava Tsapova and I am a final year student of Psychology at Dublin Business School. I am collecting data as part of my research for my final year project. My research is focused on the relationship between pets, coping and depression.

You are invited to take part in this study and participation involves completing an anonymous survey. If any of the questions raise difficult feelings for you, contact information for support services are included on the final page.

Participation is completely voluntary and so you are not obliged to take part.

Participation is anonymous and confidential, thus responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been collected.

The questionnaires will be securely stored in electronic format on a password protected computer. After one year, this information will be destroyed.

It is important that you understand that by completing and submitting the questionnaire you are **CONSENTING** to participate in the study and **CONFIRMING** that you are over 18 years of age.

Should you require any further information about the research, please contact Vladislava Tsapova on xxxxxxx@mydbs.ie. My supervisor, Margaret O'Donnell can be contacted on xxxxxxxx@dbs.ie.

Thank you for taking time to complete this survey.

Appendix 2 (Questionnaires)

Please circle correct answer

Are you over 18: Yes

No

1. Please indicate your age group:

18-24

25-34

35-44

45+

2. Gender:

Male

Female

3. Marital status:

Single

Married/Partnership

Widowed/divorced

4. Do you own a pet?

Yes

No

5. If you own a pet, what is a role of the pet in your life (please choose one that applies the most):

Security/protection

Companion/friend

Breeding

Other

Please answer each of the following questions **ONLY** if you own a pet. Skip to section 2, if you do not own a pet.

Please answer by circling only one of the following four numbers for each question.

Section 1.

	Almost	Always	Often	Sometimes
Almost				
Never				
1. Within your family, your pet likes you best.	1	2	3	4
2. You are too busy to spend time with your pet.	1	2	3	4
3. You spend time each day playing with or exercising your pet.	1	2	3	4
4. Your pet comes to greet you when you arrive.	1	2	3	4
5. You talk to your pet as a friend.	1	2	3	4
6. Your pet is aware of your different moods.	1	2	3	4

7. Your pet pays attention and obeys you quickly.	1	2	3	4
8. You confide in your pet.	1	2	3	4
9. You play with your pet when he/she approaches.	1	2	3	4
10. You spend time each day training your pet.	1	2	3	4
11. You show photos of your pet to your friends.	1	2	3	4
12. You spend time each day grooming your pet.	1	2	3	4
13. You ignore your pet when he/she approaches.	1	2	3	4
14. When you come home, your pet is the first one you greet.	1	2	3	4
15. Your pet tries to stay near by following you.	1	2	3	4
16. You buy presents for your pet.	1	2	3	4
17. When you feel bad, you seek your pet for comfort.	1	2	3	4
18. You prefer to be with your pet more than with most people you know.	1	2	3	4
19. When your pet misbehaves, you hit him/her.	1	2	3	4
20. Your pet is a nuisance and a bother to you.	1	2	3	4
21. You consider your pet to be a member of your family.	1	2	3	4

22. You like to touch and stroke your pet.	1	2	3	4
23. You feel sad when you are separated from your pet.	1	2	3	4
24. You like to have your pet sleep near your bed.	1	2	3	4
25. You like to have your pet sleep on your bed.	1	2	3	4
26. You have your pet near you when you study, read, or watch TV.	1	2	3	4
27. You don't like your pet to get too close to you.	1	2	3	4

Section 2.

When things aren't going well for you, or when you're having problems, how confident or certain are you that you can do the following. Please rate on a scale from 0 to 10, where 0 – cannot do it at all and 10 – certainly can do.

For each of the following items, write a number from 0 – 10 next to the statement

When things aren't going well for you, how confident are you that you can:

1. Keep from getting down in the dumps.

2. Talk positively to yourself.
3. Sort out what can be changed, and what cannot be changed.
4. Get emotional support from friends and family.
5. Find solutions to your most difficult problems.
6. Break an upsetting problem down into smaller parts.
7. Leave options open when things get stressful.
8. Make a plan of action and follow it when confronted with a problem.
9. Develop new hobbies or recreations.
10. Take your mind off unpleasant thoughts.
11. Look for something good in a negative situation.
12. Keep from feeling sad.
13. See things from the other person's point of view during a heated argument.
14. Try other solutions to your problems if your first solutions don't work.
15. Stop yourself from being upset by unpleasant thoughts.
16. Make new friends.
17. Get friends to help you with the things you need.
18. Do something positive for yourself when you are feeling discouraged.
19. Make unpleasant thoughts go away.
20. Think about one part of the problem at a time.
21. Visualize a pleasant activity or place.

22. Keep yourself from feeling lonely.
23. Pray or meditate.
24. Get emotional support from community organizations or resources.
25. Stand your ground and fight for what you want.
26. Resist the impulse to act hastily when under pressure.

Section 3.

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- 0 Did not apply to me at all
- 1 Applied to me to some degree, or some of the time
- 2 Applied to me to a considerable degree, or a good part of time
- 3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (eg, in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3

18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

Appendix 3 (Support services details)

Thank you for taking the time to participate in this study. If any issues emerged as a result of completing this questionnaire, below are contact details of support groups which can help.

AWARE: The Aware Support Line 1890 303 302

Available Monday - Sunday, 10am to 10pm.

The Samaritans Call on: 116123

Available 24hrs a day, 365 days a year.

Free to call.

Email: jo@samaritans.org

