The Benefits of Human-Animal Interaction on College Campuses

An Interactive Qualifying Project

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Abstract

The topic of human-animal interactions, the resulting human-animal relationships, and the benefits accrued by both parties is a contemporary issue that has aroused the interests of many stakeholders in comparative psychology. Questions on whether the relationship is symbiotic or 'parasite-host' in nature have arisen. Either way, it is apparent to the majority of the researchers that humans are the principal beneficiaries of this relationship. The main benefits accrued are health benefits; increased learning capabilities; improved moods; and reduction of stress and anxiety. With increased levels of stress, human-animal interaction proves to be one of the most efficient strategies to ease the situation. Over 85% of students in institutions of higher learning report experiencing stress on a daily basis. Research findings prove that a majority of higher education institutions have adopted programs to ensure that their students interact with therapeutic animals. The level and frequency of programs, nonetheless, remains to be very low. One recommendation of this report is that WPI should expand the level and frequency of human-animal interactions to reduce stress on campus.

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1. Introduction

Robinson (1995) defines human-animal interaction as any situation that involves interchange (irrespective of whether it is minimal or substantial) between a human being(s) and animal(s). These interactions are normally diverse, idiosyncratic, and may be fleeting or profound. This interaction creates a bond that can be referred to as the human-animal bond. The relationship is more symbiotic than 'parasite-host' because both parties benefit. The animal enjoys safety and protection from external harm. The benefits that human(s) accrue are vast and should not be underestimated. They range from physical and mental health to increased learning capabilities. In particular, research conducted by the Research Center for Human-Animal Interaction (Barker et al. 2016) insinuates that human-animal interaction facilitates increased physiological activity. This is especially so because a report by this organization recorded that old people who walked their dogs had improved in walking capabilities by a significant 28%. The level of human-animal interaction is considerably higher in developed economies, such as the US and UK, than in developing economies. According to Braun et al. (2009), over 60% of American homes have pets that facilitated the 'golden' interaction.

According to Folkman (2013), stress is the condition of being under excessive mental or emotional pressure. The level of stress and mental complications among human beings is on the rise. Understandably, this affects the health and well-being of individuals. According to the American Psychological Association, the level of stress has risen steadily from 3.5 for matures; to 4.3 and 5.8 for 'boomers' and 'Xers'; to the current 6.0 for 'millennials'. According to a recent global survey that involved 1,000 corporations across 15 countries, the Global Organization for Stress found that 6 in every 10 workers experienced increased workplace stress levels. The country with the highest workplace stress levels was China with 86%. Students – especially young adults and those in institutions of higher learning – experience high-stress levels especially during exam periods.

There is a striking relationship between an individual's level of interaction with animals (especially those that offer emotional assistance) and their level of stress without animal contact. In fact, among the many factors that students consider for stress reduction, human-animal interaction seems to be one of the best. Individuals who spend their free time with pets are less likely to be stressed than individuals who spend it idling. In particular, students who do nothing are at a higher risk of mental or emotional pressure than their counterparts who interact with animals. The main aim of this research paper is to investigate the necessity of human-animal interaction in easing student stress.

2. Background

Coughlan (2015) records that, from a global perspective, research by the Higher Education Funding Council for England affirmed that there had been an annual increase in the demand for counselling services, which was over a 20% increase in universities. This increase can easily be attributed to the increased stress levels in universities. In the United States (US), student stress levels begin at their middle teenage years. According to Jayson (2014), more than 27% of school-aged students in the US say that they experience "extreme stress" during their school years. This rate drops by 14% during summer to 13%. According to the same research, 21% of adults reported experiencing "extreme stress" levels which thereby affirms the assertion that teen stress levels are higher than adult stress levels. The figure below illustrates the levels of student stress brought about by school work, according to the research.

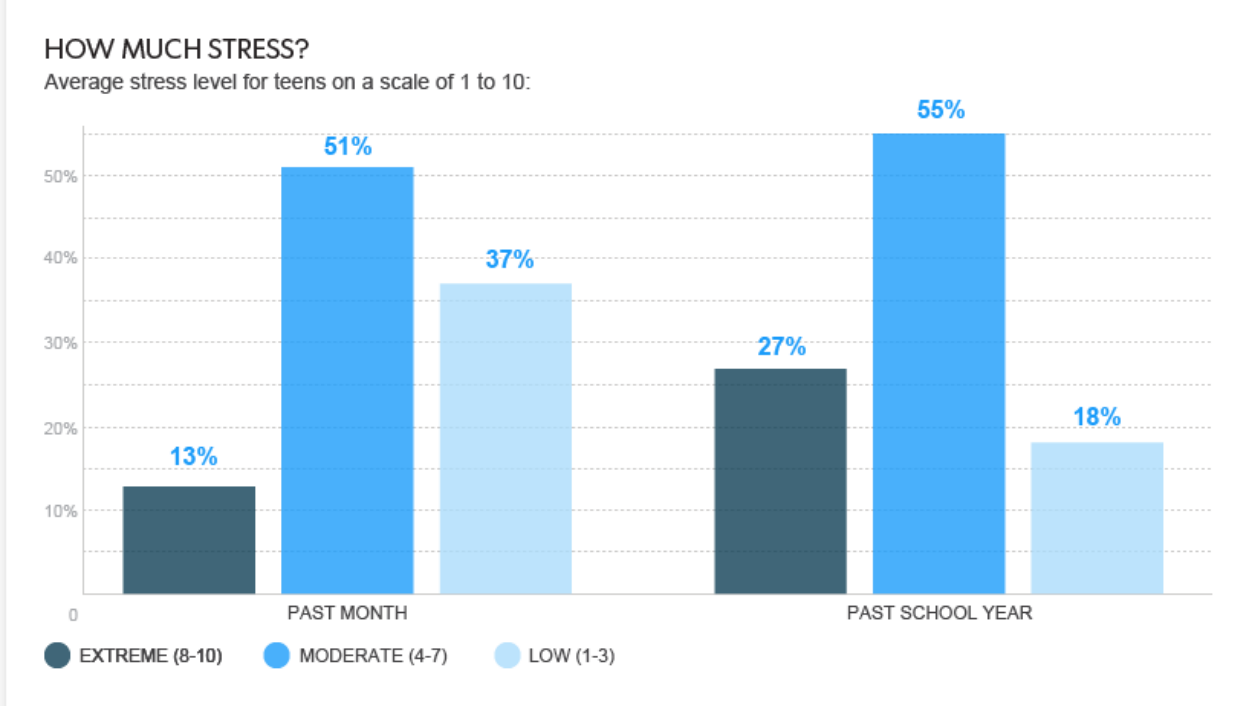

Figure 1: Teen Stress Levels due to School Work (Jayson 2014)

Moreover, in a study by the American College Health Association (2015), troubling data indicates that students are stressed multiple times throughout an academic semester

as reproduced in Figure 2.

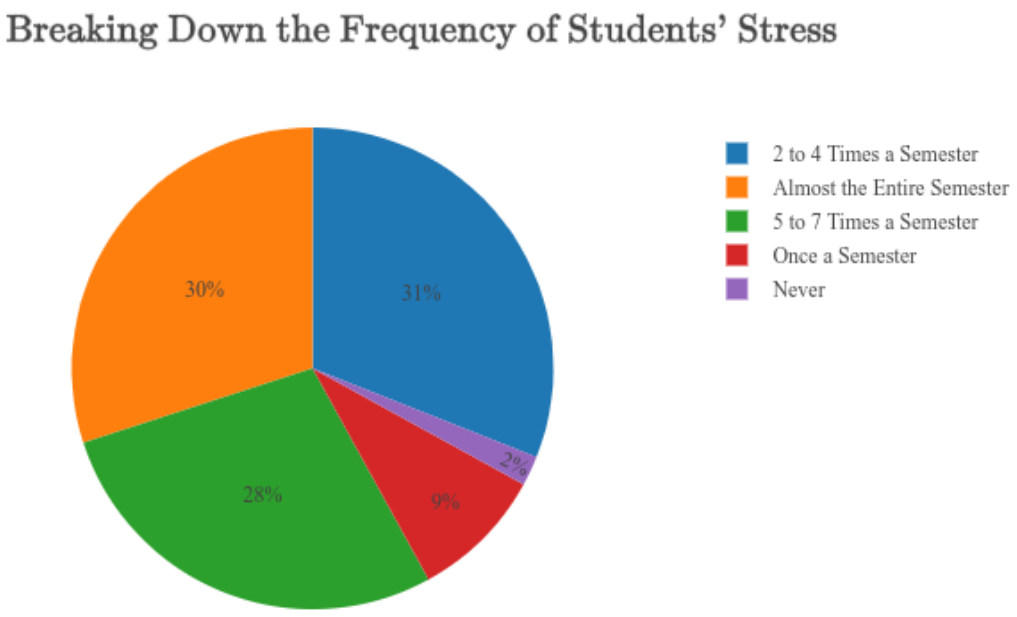

Figure 2: Frequency of Stress in Universities (American College Health Association 2015)

The study by the American College Health Association (2015) also asked students what their main cause of stress was and for 31% it was exams (see Figure 3).

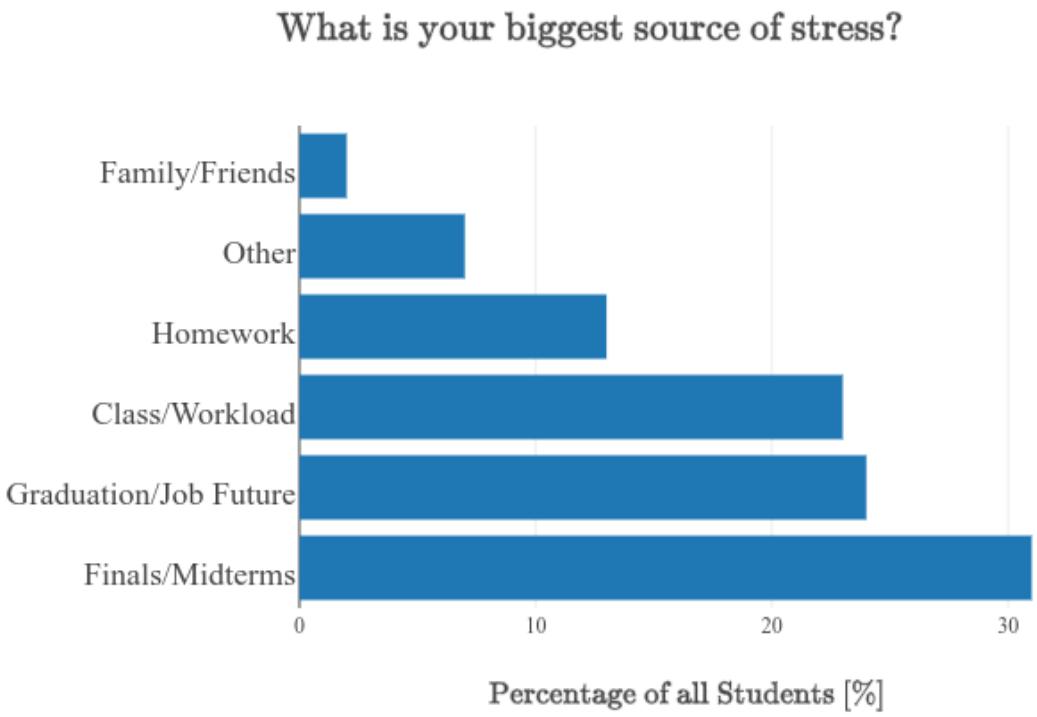

Figure 3: Sources of Stress for University Students (American College Health Association 2015)

As pointed out earlier, these students hope that the situation will calm down when they go to institutions of higher learning. This is not, however, the case. In fact, additional stress is experienced. Jayson (2014) records that teens adopt different methods to manage stress levels. Among the most popular methods include playing video games, surfing the Internet, exercising or walking, watching TV or movies, or playing sports. This is represented in the percentages shown in the figure below.

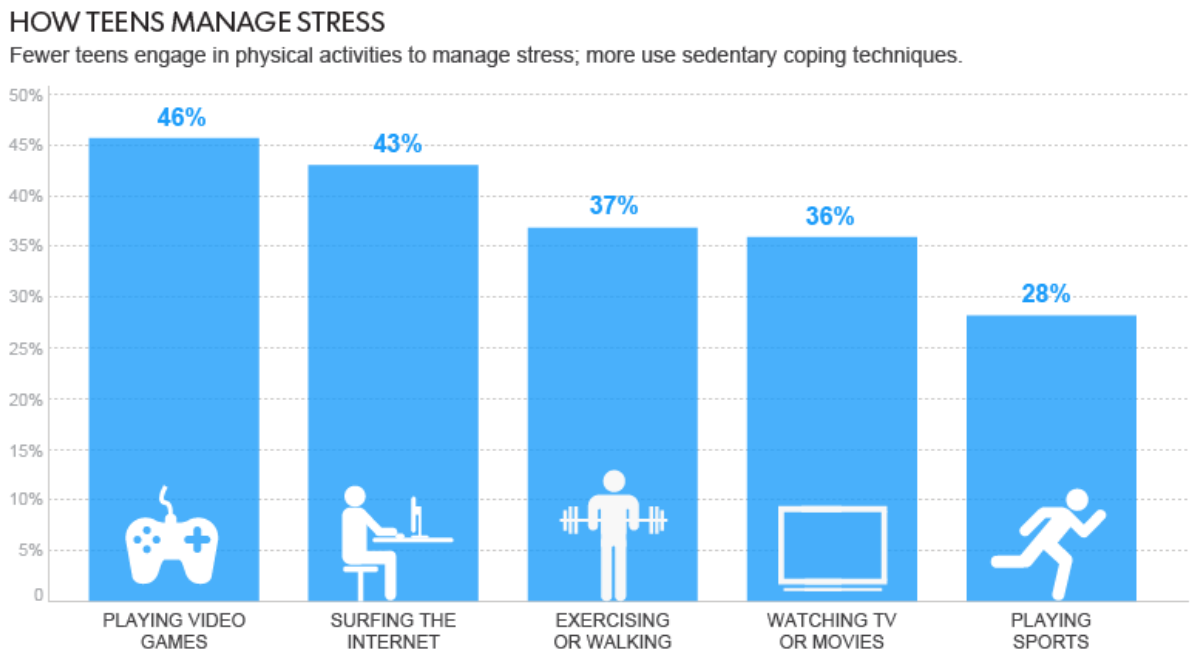

Figure 4: How Teens Manage Stress

While the 'student-animal' interaction option has rarely been considered for stress management, this section seeks to evaluate it as one of the options.This research paper will particularly consider the case of the Association of Independent Technological Universities (AITU) in order to gain access to data from schools similar to Worcester Polytechnic Institute (WPI). AITU refers to a group of private American engineering colleges that was established in 1957 with a main goal to share ideas that promote their core functions. It was founded by 15 colleges but has 22 members currently. This report shows research that could be found publicly from 9 of the 22 AITU universities and the results have been detailed in the Findings section of this report.

2.1. Types of Assistive and Support Animals

The main types of assistive and support animals include companion animals, therapy animals, emotional support animals (ESA), and assistance dogs. The table below summarizes the details of each of these animals, including their handlers, main beneficiary,

training requirements in the US laws, US public access, US transportation access, and US housing services as noted by the US Department of Justice (2011).

Table 1: The ADA and FHA (Hart et al. 2015, p. 54)

	Companion Animals	**Therapy Animals**	**Emotional Support Animals**	**Assistance Dogs**
Handler	Multiple persons in the family	Usually one person	One person with disabilities	One person with disabilities
Main beneficiary	Caregivers of the animal	Various people receiving AAI	Handler	Handler
Training Requirements in US Laws	No	No	No	Trained in tasks supporting the handler's disabilities
US Public Access (US DOJ 2010, 2011)	No	No	No	Yes
US Transportation Access (US DOT 2008)	No	No	Yes	Yes
US Housing Access (US HUD 2008)	No	No	Yes	Yes

2.1.1. Service or Assistance Animals

The American Disabilities Act (ADA) defines a service animal as any dog that is trained to work or perform tasks for an individual with disabilities. From this basic definition, it is evident that other species of animals – wild or domestic; trained or untrained – do not fit

this definition. Dogs are, therefore, regarded as the only service animals as far as ADA is concerned. It is highly likely that the discussion was settled upon after the realization that dogs – both Canis familiaris and Canis lupus – are the only animals that can be trained and tamed to assist people living with disabilities (Fine 2015). In particular, ADA states that, for dogs to be regarded as service animals, the work or tasks performed must be directly related to the individual's disability and must be seeking to ameliorate the regrettable situation. Ostensibly, service animals provide assistance for various tasks. The most common tasks include wheelchair pulling for the disabled, seizure rescue, alerting, item retrieval, provision of physical support, and assisting for balance and stability (Fine 2015). Others include providing navigation assistance for individuals with visual problems, alerting the deaf, and preventing impulsive or destructive behaviour for people with psychiatric problems.

2.1.2. Emotional Support Animal (ESA)

An emotional support animal (ESA) is an animal that someone uses for support due to a mental illness. This animal may help a person feel calmer or better able to interact with others. There are many different illnesses that require an ESA, including anxiety, post-traumatic stress disorder, depression, bipolar, or a phobia (Registry 2017b). Any domesticated animal can be an ESA, including cats, dogs, mice, rabbits, birds, snakes, hedgehogs, rats, minipigs, and ferrets among others (Registry 2017a). They can be of any size or age. There is no required training for an animal to qualify as an ESA. While there are many types of animals that can act as an ESA, a dog is the most popular one (Fine, 2002). Discussions on the different types of animals surround their popularity, rather than making a distinction between which are best.

2.1.3. Registered Therapy Animal

The law technically does not recognize the validity of therapy animals in public. Therefore, it it not clear what is required of these therapy animals. Ideally, the laymen should interpret the term to mean animals that assist individuals in their efforts to ease stress, depression, and other kinds of mental pressure. Therapeutic animals are more often pets rather than mere animals. Their handlers use them to provide therapeutic services to other people (Di Cerbo et al. 2014). The services are commonly known as Animal-Assisted Therapy (AAT) and Animal-Assisted Intervention (AAI). The services provided include college visits for therapy. Some colleges invite therapeutic animal handlers at least once per month while others do it less frequently or only during the finals. Generally, these animals are registered with independent registries to alleviate the friction from various parties caused by the presence of these animals.

2.1.4. Companion Animal

A companion animal (or more commonly a pet) is any animal that is untrained and provides benefits of companionship to their owner. This is usually at a personal level and there are no laws regarding the protection of untrained and unregistered companion animals but they can still provide relief for individuals who have mental illness.

2.2. Health Benefits of Human-Animal Interaction

It is apparent then that human-animal interaction has important health benefits. Therefore, the question becomes how the humananimal interaction impacts positively on the health of individuals. In Table 2, theories are clearly explained with selected references to reinforce the explanation. This section seeks to address this question. Most notably, the main health benefits revolve around improved moods, reduced stress, anxiety and depression, and improved physical health.

Table 2: Plausible Rationales for How and Why Animals May Reduce Stress (Crossman et al. 2015, p. 335)

Theory	**Explanation**	**Selected References**
Coping Assistance	Like humans, animals may aid in the coping process, encouraging individuals to appraise stressors as less threatening,and/or to manage our emotions more effectively in response to those stressors.	Folkman (2013), Schneider et al. (2006), Thoits (1986), and Wells et al. (2001)
Opportunities for reinforcement	AVPs may serve as pleasurable activities, providing participants with convenient opportunities to experience reward and positive emotions.	Cuijpers et al. (2007) and Schneider et al. (2006)
Emotional contagion	Animals may transmit their positive emotions to their human interaction partners, as one human does to another (e.g., in the case of contagious laughter).	Folse et al. (1994) and Hatfield et al. (1993)
Social facilitation	AVPs may encourage participants to interact with other people, providing new opportunities for human social support and interaction.	Guéguen et al. (2008), Kawachi et al. (2001), and Wood et al. (2005)
Expectancy	Like the placebo effect, AVPs may reduce stress, at least in part, because participants believe so strongly that they will be effective.	Greenberg et al. (2006) and Rabbitt et al. (2014)

2.2.1. Improved Mood

In a research study, conducted by the University of Maine, it was found the first-year college students who directly interacted with dogs reported an increase in positive moods. Specifically, students reported feeling an increased self-perception of cheerfulness, pleasantness, and calmness (Picard 2015).

2.2.2. Reduction of Stress, Anxiety, and Depression

Research, conducted by the University of St. Catherine, shows that college students who spent time with a therapy animal reported significantly decreased stress levels after their experience (Bjick 2013). Furthermore, an interdisciplinary team, at Virginia Commonwealth University, found that college students who interact with therapy dogs show statistically significant decreases in perceived stress and anxiety levels during final

exam week (Dreyfuss 2016). In one study, published in the Journal of American College Health, 90.3% (Thompson, 2013) of participants reported that their pets provide comfort and support during stressful times. In another study, at a mid-size college in the northeast U.S., service animals were brought to campus to interact with students. Approximately 79% of students found the animals to be of "exceptional" value, while 72% of students reported "high" stress relief after their interaction with the dogs (Kronholz et al. 2015).

The number of students with mental illnesses is also on the rise among the college population. Many students arrive at college already taking psychiatric medication. The new social and emotional stressors can lead to an increase in symptoms associated with depression and anxiety (Bergen 2015). Service animals can provide support, comfort, assistance, and a calming presence to alleviate the symptoms of psychiatric conditions. Despite these benefits, service animals are not always welcome on college campuses (Bergen 2015). There have been many lawsuits associated with this circumstance and, in most cases, students who were able to prove the presence of a psychiatric condition won their case and were able to have access to their animals. Dr. Sandra Barker, Bill Balaban Chair in Human-Animal Interaction and Virgin Professor of Psychiatry, states, "Bringing therapy dogs onto campus is a low-cost intervention that doesn't have any side effects (Barker et al. 2016)."

2.2.3. Improved Physical Health

Research indicates that human-animal interactions have many positive effects on physical health and well-being. For example, it has been shown that pet owners have lower systolic blood pressure, triglyceride values, and plasma cholesterol. In a study, conducted at St. Catherine's University, 30 students were subjected to an experiment to determine if the presence of a support animal (a rabbit) impacted physiological responses. The results showed a slight increase in blood pressure when the rabbit was not present. There was also a slight

increase in electrodermal activity when the rabbit was not present. The presence of the rabbit led to a significant decrease in self-reported stress among participants (Kennedy 2015).

2.2.4. Increased Learning Capabilities

The role of human-animal interaction in increasing the learning capabilities of individuals is ostensible and should not be underestimated. Most outstandingly, animals facilitate the improvement in the ability to comprehend, gain additional knowledge and insights, and assist better learning for people living with disabilities. This section provides key insights on these areas.

In a study of 67 college students, participants were presented with various formats of information presentation. Results indicate that the presence of a live animal, in conjunction with a live presenter, is an ideal learning situation for students, yielding higher average post-test scores. Groups with a live animal present during the presentation showed a 27% increase in post-test scores, while control groups without an animal present showed only a 16% increase in gained knowledge (Adamczak 2016).

2.3. Rationale Behind Slow Adoption of Human-Animal Interaction as a Stress Reliever

2.3.1. Policy-based Complications

According to a report by the Scion Group LLC, many educational institutions have considered the option of improving the learning capabilities of people living with disabilities by using service animals (Luskin 2012). This option is, however, riddled with many complications arising from policies, practices, and procedures, including the Americans with Disabilities Act (ADA) and the Fair Housing Act (FHA). Even so, *Therapy Dog De-stresses*

Students During Finals Week at Clarkson University (n.d.) opines that these institutions seem to do all that is within their capabilities to ensure that they have complied with and adhered to these policies. The main institution-based tactics include modification of internal policies and procedures to ensure that they are consistent with ADA and FHA rules.

The table below provides a summarized view of the main tenets that regard the use of service animals from a comparative approach.

Table 3: The ADA and FHA (Tedeschi et al. 2015, p. 327)

Americans with Disabilities Act (ADA)	**Fair Housing Act (FHA)**
Regulates service animals and specifically excludes emotional support animals	Accepts ADA definitions for service animals and provides additional provisions to include emotional support animals
Applies to individuals with documented disabilities in public spaces	Applies to individuals on the premises of their dwelling
Restricts the definition of service animals to dogs or miniature horses	Does not limit by species
Service animals must be trained to perform a specific task directly related to a person's disability	Does not require specific training or tasks
Disabilities must be documented by a licensed medical professional	Need for accommodation must be documented by licensed medical or mental health professional

2.3.2. Controversy

In recent years, there has been a significant amount of controversy in mainstream media as well as professional journals about human-animal interaction. For students living on campus, administrators must comply with "The Fair Housing Amendments Act of 1988,

Section 504 of the Rehabilitation Act of 1973, and Title II of the Americans with Disabilities Act" to protect the right of people with disabilities to keep emotional support animals, even when a landlord's policy explicitly prohibits pets of any kind.

2.3.3. Safety

As always, safety is the main concern when exposing the public to animals. These animals must be able to handle intense situations with many different variables without becoming aggressive or losing focus of their task. If a service animal shows aggression it is grounds to reasonably ask the handler to remove the animal from the premises (Erdozain et al. 2015).

2.3.4. Fraud

Service animal fraud is common as regular pet owners become aware of the perquisites of bringing their dog everywhere. Not only is this illegal under federal law but it is also detrimental to the people that need the animals. Since the only question that you can legally ask a person with a service animal is "what task is it trained for?", it is very difficult to determine genuine service animals for mental conditions.

2.4. Conclusion

In summary, it is evident from the preceding discussion that human-animal interaction plays a major role in improving the health of human beings. According to Pinto et al. (2015), this ranges from improved moods, reduction of stress, anxiety, and depression and improved physical health. Besides those factors, the interaction leads to increased learning capabilities. Moreover, an essential role of human-animal interaction in improving health is that it improves the learning ability of people living with disabilities. However, this is marred with various complications that emanate from legal policies and procedures. The main factors that limit the use of animals for accrual of these benefits include the riddling with controversy, safety concerns, and increased animal (pet) fraud.

3. Findings

While animal-assisted therapy (AAT) is being utilized by increasing numbers of practitioners in a wide range of settings, it is rare to find an animal program where the purpose and rationale of animal application are clearly defined at the outset. Most often, practitioners bring their pets to work or employ other animals external to the client's ecosystem, with the belief that animals will enhance the therapeutic process (Sacks 2008). While their potential to enhance work with clients is certainly well documented, their ability to do just that is highly dependent on fitting the right animal to the right client at the right moment. Doing so requires a high level of clarity regarding what the animal is intended to do as well as need for the clinician to create, maintain, or enhance a therapeutic window.

From the research findings, it was evident that a majority of the AITU universities have adopted various strategies and tactics to increase the probability that, at least once in a while, their students interact with animals. This has, however, been done sparingly and most students are yet to consider and appreciate human-animal interaction as one of the most effective ways to deal with school-related stress. The research findings for the following universities have been discussed in this section; Carnegie Mellon University; Clarkson University; Embry-Riddle Aeronautical University; Illinois Institute of technology; Lawrence Technology University; Massachusetts Institute of Technology; Milwaukee School of Engineering; Rensselaer Polytechnic Institute; and Worcester Polytechnic Institute.

3.1. Carnegie Mellon University (CMU)

"Paws to Relax" is part of regular wellness programming on campus, hosted by the Mindfulness Room, on a weekly basis (Carnegie Mellon University n.d.). Through this program, volunteers bring dogs from a local shelter to interact with students twice a week

(and occasionally bunnies, as well). Up to 250 students turn up to play with the dogs (*Pet Tales Dogs give CMU students a study break* n.d.).

According to the Civil & Environmental Engineering (CEE) senior and mindfulness room founder, Angela Ng, there are plans to ensure that the university sets aside more time to ensure that therapy dogs are more often available to the students. Angela Ng maintains that using therapy animals and increasing human-animal interaction are the most suitable ways to help the students manage their stress levels without having to see a therapist (*Pet Tales Dogs give CMU students a study break* n.d.). From her sentiments, it is evident that a majority of the students who seek therapeutic counsel in the university are stigmatized. The university encourages faculty members to certify their pets with this scheme for therapy. All this has been done to encourage animal-human interaction.

3.2. Clarkson University (CU)

CU has one of the best policies in the institutions of higher learning, as far as service animals are concerned. The policy is characterized by several elements that ease the use of service animals in the institution. One such policy is the permission to use service animals in residence halls and on campus. Besides, the policy mandates members of the Clarkson community – including faculty, staff, and students – to allow the service animals to accompany their handlers/partners in their convenience (*Service Animals* n.d.). Besides this, the policy creates an enabling environment for the safety of service animals. This is done through the provision that members of the Clarkson community should not pet, feed, deliberately startle, or separate the service animal from its handler/partner. Also, the researcher here found that the university brings therapy dogs to the campus library during finals to help the students decompress. According to a report under the new reports section of their website, therapy dogs are introduced to destress the students during their final week

at CU (*Therapy Dog De-stresses Students During Finals Week at Clarkson University* n.d.).

3.3. Embry-Riddle Aeronautical University

The University features a permanent therapy dog as part of the campus's Counseling Center. The dog, Peppino, was visited by 85 students within the first few weeks of his arrival on campus. Peppino is available for students during the Counseling Center's regular hours for a brief walk-in visit and can also join students during counselling sessions by request (*It's Tuesday: Visit Solly the Therapy Dog* 2014).

Also the main effort by this university to enhance human-animal interaction, is the introduction of dog training courses on top of other courses. The course provides an opportunity for human beings – who are more intelligent than the dogs – to acquire the skills, competence, and expertise to interact with the dogs. Overall, the course creates a reasonable amount of curiosity in its students about dogs. It creates an environment that encourages the use of service animals more frequently than not. By extension, the university's dog training course indirectly encourages the students to engage in human-animal interactions more frequently.

3.4. Illinois Institute of Technology (IIT)

This university features Solly the Therapy Dog, who is available for an hour once a week in the Student Health and Wellness Center. During finals, he's available for extra hours and at the library as well.

Like CU, IIT also has comprehensive and favorable service animal policies that provide a suitable environment for their adoption. From its website, it is evident that the institution holds service animals with a lot of regard. IIT, in particular, appreciates their role in assisting students with disabilities (*It's Tuesday: Visit Solly the Therapy Dog* n.d.). The

service animals entertained in the institution's environment must, however, fit in ADA's definition. Some policies also limit the entry of service animals into the institution. For instance, as much as service animals are welcome to the campus when accompanied by their guests, one must ascertain that they are well trained and required due to the disability of their handler.

3.5. Lawrence Technological University (LTU)

The therapy dog is one of the most important elements of the De-Stress Fest (*De-Stress Fest* n.d.). Just recently, April 11, 2017, the institution indicated in its schedule that 12-2pm was time to "Melt away the stress with a little puppy love," at the Science Building Lobby. This event has both short-term and long-term implications. In the short-term, students will "melt away the stress" while in the long-term – which should include the main rationale behind the exercise's introduction – the students will learn to associate human-animal interaction with stress reduction. In a rationally unique exercise, the university holds a De-Stress Fest to give students a break from studying, featuring a therapy dog along with other activities. It's not clear if this event is held every year, every semester, or is simply a one-time occurrence.

3.6. Massachusetts Institute of Technology (MIT)

"Furry First Fridays" bring therapy dogs to campus on the first Friday of every month. Dogs from a non-profit therapy dog organization visit the library for a couple of hours (Finnie 2016). Furthermore, therapy dogs were also featured in MIT's Wellness Fair. This move places MIT several miles ahead of other AITU universities that hold the events only once in a while. From the institution's website, it is evident that measures have been put in place to ensure that there are no lines or waiting. It is imperative to note that in a stress alleviation therapy session with service animals, complications such as difficulties in accessing them and long waiting times would lead to additional stress. The core goal of the process

would not, therefore, be achieved. Besides, challenges in rendering the therapeutic session would discourage students from attending rather than encouraging. The university cannot compel students to attend such a session: the only option is to entice them by assuring them of reasonable convenience.

3.7. Milwaukee School of Engineering (MSOE)

The schools appear to regularly host events with a therapy dog on campus, Kaya the Therapy Dog. She is MSOE's "favorite therapy dog" and visits the East Spirit Room on campus (*Therapy Dog Kaya* n.d.). It is, however, apparent that the institution's efforts are not as enthusiastic as those of other AITU universities. Kaya is not popular enough to attract a large number of students for therapeutic works. While students from other AITU institutions brag on social media platforms (for example, students from CU continuously posted about their love for their service animals during their finals), the majority of MSOE students have only heard of such services but have never actually utilized them.

3.8. Rensselaer Polytechnic Institute (RPI)

A fraternity and sorority on campus jointly host the "dog days of finals", bringing therapy dogs to campus during finals (*Dog Days of Finals with Theta Xi and Alpha Gamma Delta* n.d.). Even so, there is no initiative by the institution's administration to ensure that service animals get close contact with humans, especially for therapeutic purposes. This is a major setback to their adoption in easing student's school-related stress.

3.9. Worcester Polytechnic Institute (WPI)

Promotion of Animal Welfare Society (PAWS) is a group that hosts events on campus during finals to help students with stress as well as organizing trips to local shelters. According to data posted by PAWS, a considerable number of students are willing to attend

the events with club membership consistently hovering around 80 students (*PAWS Dog Therapy D16* n.d.).

Students at WPI conducted a research study to assess the extent to which service animals (pets) take student's stress away. Spearheaded by Madison Beck, Maura Buckely, and Sarah Wakumoto, in 2014, the Great Problem Seminar project reaffirmed the assertion that pets play a major role in 'de-stressing'. According to the project, 85% of students report feeling stressed out on a daily basis (Beck et al. 2014). The graph below shows students stress levels after a quiz and the impact that a pet can have in the further reduction of stress levels.

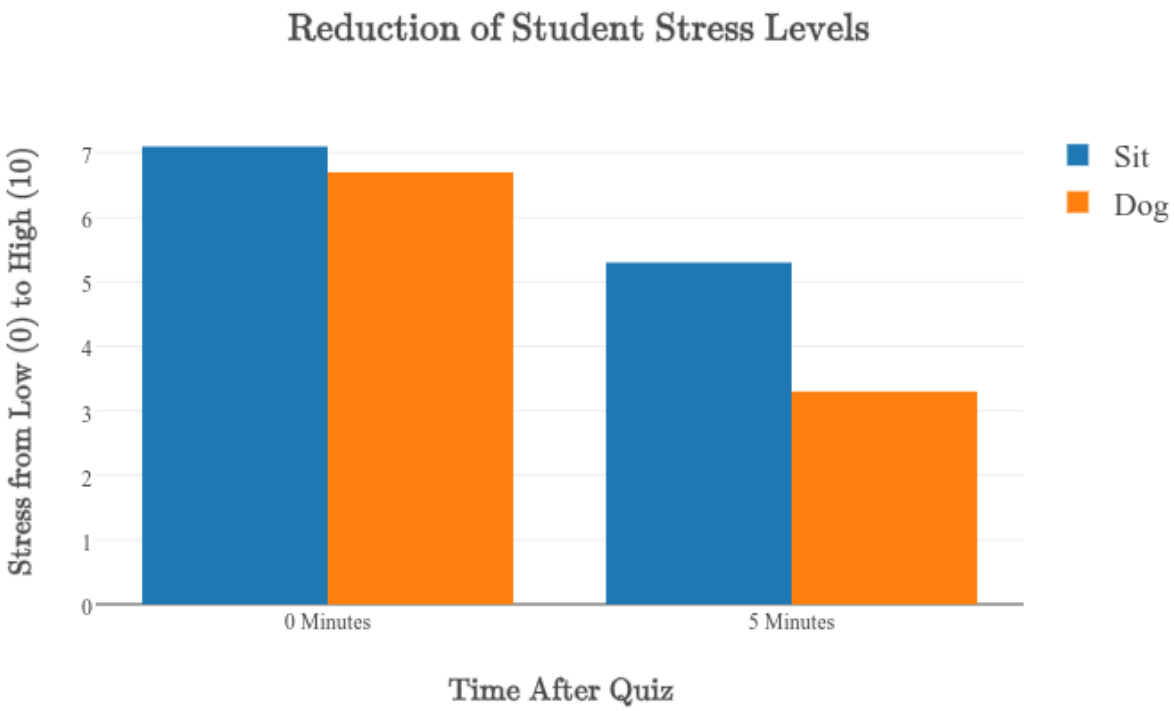

Figure 5: Reduction of Student Stress Levels (Beck et al. 2014)

The project recommended that service animals should be adopted by the institution and recommended for WPI students to reduce stress levels (Beck et al. 2014).

4. Recommendations

It is highly recommended that institutions of higher learning should adopt rules, policies, and procedures that favor the adoption service animals. This would play a major role in reducing student stress (Amiot et al. 2015). Currently, colleges and universities seek to align their service animal policies with those of ADA and FHA. These policies are sometimes not favorable for the incorporation of pets in learning institutions. The institutions are, however, compelled to align their internal policies with them because the law requires their compliance. It is suggested that higher education institutions should work collaboratively with policy making bodies to ensure that the scope of 'service animals', as defined by the ADA and FHA, is expanded. Besides, unnecessary complications in allowing service animals into the institutions should be ameliorated for students with documented disabilities.

As time goes on, the high level of student stress should signal the need for institutions and other bodies to get involved to define effective strategies to reduce stress. To that effect, it is recommended that higher education institution's management teams should seek to increase the frequency of interaction between their students and therapeutic animals. In some institutions, such as CU, the interactions occur once in a while (only during the finals). This should not be the case because, as pointed out earlier, 85% of students report being stressed on a daily basis irrespective of whether they have exams or not (Barr et al. 2011; Hunt et al. 2010). Increasing the frequency of therapeutic sessions (perhaps one per week) can play an important role in reducing student's stress.

Moreover, it is highly recommended that, during the therapeutic sessions, institutions should do all that is within their capabilities to ensure that students do not experience additional stress. This is especially so when students struggle to access the therapeutic animals. Some institutions such as MIT have gone to the extent of laying down additional strategies to ensure that there are no lines or waiting. This should be the case in all

institutions including WPI. Pelletier et al. (2016) states that additional stress has a more adverse impact than the original stress. It is recommended that institutions should involve and engage students (through their representative and use of questionnaires) when developing the blueprint on how the therapeutic program would be offered. This way, the management team can be well assured that their program satisfies the therapeutic needs of the students as opposed to aggravating them.

Likewise, it is also recommended that students should come up with initiatives to ensure that they have their own mechanisms to cope with stess. One of the highly-recommended initiatives includes the formation of therapeutic groups (Ritchie et al. 2013). Institutions should organize their students in such a way that every student is a member of at least one therapeutic group. To support this program, the management of various institutions should ensure that they have provided service animals that are consistent with both internal and external policies to each of the groups. Such a move would ensure that each student can easily and conveniently reach a therapeutic assistant animal when needed.

In addition, further research is recommended in the effects of human-animal interactions on college students mood. Most research that has been conducted thus far has had caveats that ultimately affect the outcome in some unintentional manner. Due to the nature of counseling and the disclosures required it is unlikely that this research will ever be comprehensive in nature. It is, therefore, recommended that researchers should conduct further studies in this area, including research on the extent of harm that school-related stress can cause the students; the rationale behind the delayed adoption of animal interaction as a solution to school-related stress; and the perception of psychologists on the role of human-animal interaction in reducing stress in contrast with that of the layman.

Particularly for WPI, where there is no permanent program in place for animal visitation

or on-demand therapy, it would be vital to support the student organization Promotion of Animal Welfare Society (PAWS) during times of leadership change such that the program does not fall into disarray. It is therefore proposed that the Student Development and Counseling Center assist PAWS during transitions so that there is no interruption of service. WPI has sound policies in place regarding animals on campus and there is no revision needed. Furthermore, the documentation provided by the Office of Disability Services for any accommodations related to a number of disabilities is comprehensive to cover the needs of students related to animals and therapy. Specifically for the Office of Disability Services and the Student Development and Counseling Center, it would be beneficial to ascertain whether having a therapy animal in the Exam Proctoring Center or the office would be a useful tool. In order to determine this another IQP in the future could focus on surveying the student population to determine the stress level at WPI if any of the human-animal methods would be appropriate for the situation.

5. Conclusion

To wrap things up, the essentiality of human-animal interaction in reducing the stress levels of a human being – in particular, campus students – cannot be underestimated. The role played is so significant that the livelihood of some individuals relies entirely on the interaction. Human-animal interaction gurus regard the relationship as symbiotic because both parties benefit from it. The main categories of assistive and support animals that humans rely on for interactional purposes include companion animals, therapeutic animals, emotional support animals, and assistance animals. Each of these types has a specific role to play in the lives of humans. Most notably, animals have accrued considerable health benefits to humans. These benefits include improved mood, reduction of stress, anxiety, and depression, and improved physical health. Moreover, human-animal interaction facilitates increased learning capabilities for the humans. With this evidence, many education institutions have considered aligning their service animal policies with relevant acts.

From the findings, it is evident that a good number of AITU institutions have adopted relevant strategies to ensure that their students interact with animals at least once in a while. Even so, much more must be done to achieve a reasonable level of interaction. Universities such as CMU, CU, EAU, IIT, LTU, MIT, and WPI have strategies that seem substantial enough in attaining a reasonable level of interaction between humans and animals. Some institutions, such as MSE and RPI, however, seem to lag in executing these strategies. While this is so, others, such as WPI, students have taken it upon themselves to conduct research into whether the human-animal interaction is worth institutional consideration.

Several recommendations and suggestions have been made. The main recommendations include the systematic review of institutional rules, policies, and procedures that govern the adoption of service animals. It is also recommended that institutions of higher education

should come up with strategies to ensure increased interaction between students and therapeutic animals to ease the current high levels of stress in students. Therapeutic groups are also recommended with a focus on the need for students to ensure that they are members of at least on the therapeutic group. Finally, the paper has made recommendations for further research in the field in general and at WPI.

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