

4. A randomised controlled trial exploring the effect of canine interaction on the emotional wellbeing of higher education students

KAREN MANVILLE *

Research Student, Middlesex University, London, UK

This study determines whether human canine interaction (HCI) is an effective intervention to reduce anxiety, depression and stress, alongside having a positive effect on wellbeing in Higher Education (HE) students.

Sixty HE Middlesex University students participated through opportunity sampling. Exclusion factors included a fear of, or allergy to dogs and if participants' had ever harmed an animal. Randomly assigned to either HCI or control group, the HCI group spent 10 minutes interacting with a small canine whereas the control group watched an unrelated power point presentation of neutral images for 10 minutes. All participants completed a range of standardised self-report questionnaires and visual analogue scales measuring anxiety, depression, stress and wellbeing, before and after their interaction.

The findings indicated anxiety (measured by State Trait Anxiety Inventory and the Depression, Anxiety and Stress Scale [DASS]), depression (measured by Becks Depression Inventory and VAS-Depression), and stress (measured by DASS and VAS-Stress) significantly reduced following HCI in the HCI group compared to the control group from pre to post-intervention. Self-Acceptance as measured by the RYFF significantly increased following intervention in the HCI group compared to the control group.

There were no significant differences between HCI and control group from pre to post-intervention for all remaining measures (DASS-Depression, VAS-Anxiety, CIS-Physical Activity,

* **Corresponding author:** Karen Manville. Email: KM1332@live.mdx.ac.uk

Fatigue and Concentration, RYFF-Autonomy, Environmental Mastery, Personal Growth, Positive Relations with others and Purpose In Life).

This research is important as HCI, though widely practiced globally, does not yet have the same quantity and quality of robust scientific research dedicated to the subject as the level of practical usage and current affairs might suggest. Findings demonstrate that HCI has a positive impact on human emotional wellbeing supporting HCI as a useful source of mental health support for HE students.

Canine Assisted Intervention – the impact of intervention duration on reducing anxiety, stress and depression in Higher Education students: a randomised control trial

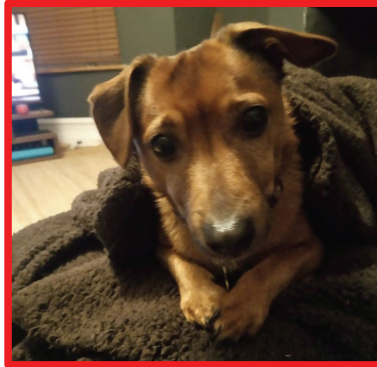
Karen Manville, PhD Student
Middlesex University

Dr. Gemma Reynolds, Director of Studies
Middlesex University

Dr. Mark Coulson, Second Supervisor
University of East Anglia

Background:

The number of Higher Education (HE) students experiencing some form of mental health issue has increased over the last decade (Thorley, 2017) significantly hindering academic success (Eisenberg, Golberstein, & Hunt, 2009). There are a number of reasons why students may face more issues during their time in HE, including increased tuition fees, living costs, a lack of employment, with social media pressure and influences also adding to their issues during their time in HE (Richardson, Elliott, & Roberts, 2015). Universities are therefore now more than ever aware of the need for alternative support systems to be in place to support HE students through their time in Higher Education. One way of enhancing student emotional well-being is through canine assisted intervention (CAI, Manville, Coulson, & Reynolds, under review). Interacting with a canine has been found to boost physical health and vitality, provide companionship and sensory stress relief (Headley, Na, & Zheng, 2008; Rowe 2010). Despite published studies exploring CAI in HE students (Barker, Barker, McCain, & Schubert, 2017; Binfet, Passmore, Cebry, Struik, & McKay, 2018), there is limited research focusing on HE students with both an experimental and a control group in a range of CAI durations.



Elvis and Dahlia, our canine partners.

Current Study:

Critically, there is a lack of empirical research exploring the parameters of what exactly entails an effective canine intervention session. One such lack of detail involves how long the session must last in order to be most effective. While Adame, Riley & Carlson (2009), Binfet & Passmore (2016) and Shearer, et al. (2016) all applied long periods of CAI in their samples of HE students (20, 45 and 60 minutes respectively) other research has demonstrated effectiveness even with shorter durations intervention time (Buttelmann & Römoke, 2014), therefore indicating discrepancies regarding the optimum CAI duration.

The current study therefore aims to establish the optimal duration of CAI in improving emotional well-being in HE students. In addition participants interaction levels and canine traits will be measured to explore whether there is an impact on the influence of CAI on mental health.

Hypotheses:

Based on previous research demonstrating that 5 minutes (Buttelmann & Römoke, 2014) and 10 minutes (Manville, Coulson, & Reynolds, under review) CAI duration had a positive effect on HE student mental health, it is hypothesised a shorter duration intervention will have a positive effect on well-being, stress, anxiety and depression.

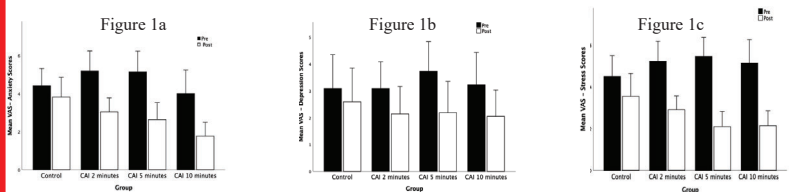
Results:

1. 4(group: 2-minute, 5-minute, 10-minute CAI vs control) × 2(phase: pre vs post) mixed ANOVA was carried out in all measures.
2. Multiple regression was carried out to explore canine traits and interaction types as predictors of anxiety, stress, depression and well-being.

Analysis demonstrates CAI was effective pre to post-intervention in the 2-minute, 5-minute and 10-minute CAI groups in comparison to a no significant control group in reducing,

- 1). Anxiety as measured by the VAS and STAI
- 2). Depression as measured by the BDI
- 3). Stress as measured by the VAS
- 4). No significant effect on stress was measured by the PSS or well-being as measured by the WEMWBS
- 5.) Canine trait and interaction type was found to be a predictor on the increase in Well-Being levels in the 10-minute CAI groups
- 6.) Interaction type was found to be predictors of stress relief in the 2-minute CAI group

Most importantly it was demonstrated there was no significant difference in CAI effects found between either the 2-minute, 5-minute or 10-minute CAI groups.



Figures 1 a, b and c demonstrate pre and post VAS Anxiety, Depression and Stress scores in the CAI 2-minute, 5-minute and 10-minute groups and the control group.

Method:

88 HE participants were randomly assigned to either the 2-minute, 5-minute or 10-minute canine intervention groups or the 10-minute control group.

Exclusion criteria included a fear of, or allergy towards dogs and if participants had ever harmed an animal.

- 1). Pre intervention: all participants completed three visual analogue scales (VAS, anxiety, stress and depression), the State Trait-Anxiety Inventory (STAI, anxiety), Beck's Depression Inventory (BDI, depression), Perceived Stress Scale (PSS, stress), The Warwick-Edinburgh Mental Well-being Scale (WEMWBS, well-being), and an additional 8 VAS measures to identify canine traits.
- 2). Those in the CAI groups spent 2, 5 or 10 minutes interacting with a small canine whereas the control group watched an unrelated power point presentation of neutral images for 10 minutes.
- 3). Post intervention – all participants complete the same VAS and questionnaires to measure their post emotional state.

Conclusion:

No difference in effect was identified between duration groups (2-minute, 5-minute, or 10-minute) signifying it is the act of interacting with a canine, rather than the duration of the intervention that influences mental health in HE students.

CAI is effective in reducing anxiety, stress and depression levels in HE students. Additionally canine trait and interaction type was found to be a predictor in increasing well-being levels and interaction type was found to be a predictor in reducing stress levels.

This has a significant impact on the application of CAI duration as a greater number of students may benefit from CAI given that shorter durations (2-minutes) are as effective as longer durations (10-minutes).

The results of this study positions CAI as a valid support system for students experiencing anxiety, stress and depression and as an intervention to support student mental health that universities can appropriate to build a healthier, more emotionally stable student body.

References

- Adame, K. N., Riley, T. A., & Carlson . T. (2009). Evaluating college student interest in pet therapy. *Journal of American College and Health*, 57(5), 545-548.
- Barker, S. B., Barker, R. T., McCain, N. L., & Schubert, C. M. (2016). A randomized cross-over exploratory study of the effect of visiting therapy dogs on college student stress before final exams. *Anthrozoös*, 29(1), 35-46.
- Binfet, J.T., & Passmore, H.A. (2016). Hounds and Homesickness: the effects of an animal assisted therapeutic intervention for first year university students. *Anthrozoös*, 29(3), 411-454.
- Binfet, J. T., Passmore, H. A., Cebry, A., Struik, K., & McKay, C. (2018). Reducing university students' stress through a drop-in canine-therapy program. *Journal of Mental Health*, 27(3), 197-204.
- Buttelmann, D., Römoke, A.K. (2013). Anxiety-Reducing effect: Dog, fish and plant in direct comparison. *Anthrozoös*, 27(2), 267-277.
- campuses in Canada. *Canadian Journal of Counselling and Psychotherapy*, 49(4), 332-259.
- Eisenberg, D., Golberstein, E., & Hunt J.B. (2009). Mental health and academic success in College. *The B.E. Journal of Economic Analysis & Policy*, 9(1), article 40.
- Headley, B., Na, F., & Zheng, R. (2008). Pet dogs benefit owners' health: a "natural experiment" in China. *Social Indicators Research*, 87(3), 481-493.
- Manville, K., Coulson, M., & Reynolds, G., (under review) The influence of canine visitation therapy on students' well-being.
- Richardson, T., Elliott, P., & Roberts, R. (2015). The impact of tuition fees amount on mental health over time in British students. *Journal of Public Health*, 37(3), 412-418.
- Rowe, S. (2010). The Health Benefits of Having a Pet. *Vibrant Life*, 26(6), 18-20.
- Thorley, T., (2017) Not by degrees: Improving student mental health in the UK's universities. Institute for Public Policy Research, <https://www.inpr.org/files/2017-09/not-by-degrees-summary-sept-2017-1.pdf>



Contact: Karen Manville
KMI332@live.mdx.ac.uk