

Examining the effects of Animal-Assisted Activities against standard treatment in a university setting

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Abstract: The wellbeing of university students has become a global issue in recent years, with the rise of students seeking help for their mental health, the demand for such services has increased exponentially, leading many Universities to struggle in meeting these growing demands. With research in the area mainly focused on formal methods of student support, the current study explores the use of more informal sources of support. 100 university students who had attended a standard informal student support session (known as Chooseday Chill) or a wellbeing dog session, were asked to complete a questionnaire measuring their anxiety and overall wellbeing. Results indicated that when compared to the standard support, students who attended the wellbeing dog sessions reported significantly lower levels of anxiety and higher levels of wellbeing at the end of the sessions. The authors discuss the practical implications of these findings for treatment in Higher Education.

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HIGHLIGHTS

- AAA (Animal Assisted Activities) may be more effective than standard student support in alleviating anxiety and enhancing wellbeing in university students
- AAA and informal sources of support may help to create an inclusive environment for students who may otherwise not seek support
- Qualitative feedback indicated a greater desire for increased access to AAA

INTRODUCTION

In recent years, awareness has increased surrounding the issue of University students' mental health (Akram et al., 2020). In Australia, half of students struggle with psychological disorders (Viskovich & Pakenham, 2020), while in the US, up to half of students struggle with substance use disorders and around a quarter struggle with mood and anxiety disorders (Farrer et al., 2020). These issues have been observed elsewhere, including Canada (Craggs, 2012), Turkey (Guney et al., 2010), Malaysia (Othman & Rashid, 2018), Dubai (Ahmed, et al., 2009), the State of Israel (Lupo & Strous, 2011), New Zealand (Stallman, 2012), Germany, Demark and Bulgaria (Mikolajczyk et al., 2008), highlighting the globality of this issue.

In the UK, 81,960 students reported having a mental health condition during the 2018/19 academic year (Higher Education Statistics Authority, 2020), although it is understood that more students struggle with mental health problems than reported so this figure may not be entirely accurate (Cage et al., 2020). UK-based research suggests the increase in mental health problems in university students is due to the transition some students face in moving away from home and becoming independent, and the academic challenges students may face during university due to the requirement for independent study and a less structured method of learning compared to school (Cage et al., 2020).

Research implies that the increased mental health problems in students can be attributed to the increase in tuition fees and living costs, and the abolishment of maintenance grants (Mian & Richards, 2016). A typical graduate may leave university with debts exceeding £50,000, which may explain why students are increasingly reporting financial concerns; this in turn has been associated with poorer mental health, physical health, and academic performance (Jessop et al., 2020). The UK Royal College of Psychiatrists (2011) estimated that reported mental health problems in students will continue to increase due to reduced government funding and the additional financial burden this has placed on students.

Mental health problems in university students are linked to reduced academic performance, increased likelihood in withdrawing from university, and a negative student experience (Usher, 2020). In addition to the stressors faced, there are also barriers that prevent students from seeking support, such as stigma, disclosure, as well as self-blame and lack of motivation. This wealth of research investigating the increase in and causes of mental health problems in students further implies that support needs to be put in place at the same rate that these problems are increasing (Spruin et al., 2020).

Many universities have continued to investigate and implement provisions to support student wellbeing. One intervention that has become popular in universities is mindfulness, which aims to increase attentiveness to breathing and regulating thoughts and emotions (Barnes et al., 2017). If used regularly by students, mindfulness can reduce self-criticism and distress (Regehr, et al., 2013), along with fatigue, tension, depression, and anxiety (Azam et al., 2016; Crane et al., 2013). Dawson et al. (2020) conducted a systematic review and



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meta-analysis of randomised controlled trials assessing mindfulness-based interventions on students' mental health. Findings highlighted that compared to passive controls, mindfulness improves anxiety, distress, depression, and overall wellbeing in students.

Although mindfulness-based interventions have shown positive results for university students, research has highlighted that these interventions may be no better than other practices aimed at improving mental wellbeing (Galante et al., 2021; Spruin et al., 2020). Likewise, some research has suggested that mindfulness can have the opposite effect on students, increasing feelings of stress and anxiety (Dobkin et al., 2012). These types of interventions can also be rigorous and time-consuming (Huberty et al., 2019), invoking high attrition rates in many mindfulness interventions at universities (e.g., Azam et al., 2016). This would suggest that alternative interventions should be offered to students.

Similar limitations have been found in other methods that have been explored. For instance, Resilience and Coping Interventions (RCIs), a form of group therapy that encourages the sharing of feelings and experiences to identify effective coping methods, has been used in some American universities to reduce student stress and enable them to develop effective coping strategies (Nathan & Houston, 2017). Research has suggested that RCI can be effective in reducing symptoms of depression in students and increase their experiences of hope (Houston et al., 2017). Although these results are positive, similar to the mindfulness interventions, RCI studies have also had issues with student retention and concerns about the sustainability in universities (Houston et al., 2017; Leppin et al., 2014). As such, more adaptable and cost-effective methods for supporting student wellbeing need to be explored.

The Covid-19 pandemic led to new forms of student support being introduced. Web-based interventions became a flexible, easy, and low-cost strategy for supporting student wellbeing (Genc & Arslan, 2021). Some universities explored the usefulness of guided web-based stress management intervention for students and found this to be a helpful tool to improve coping skills and prevent psychological distress (Amanvermez et al., 2021). While these types of innovative interventions had positive outcomes, there were numerous drawbacks, including the resource-intensive processes required to develop such interventions, the higher drop-out rates compared to face-to-face interventions (Schoeps et al., 2020), and the issues of inequality that these interventions create for students who cannot readily access the internet (Hodgson & Hagan, 2020). This suggests that other interventions need to be offered to university students.

Accordingly, while universities have been exploring various methods of support to combat the concerns of stress and mental health in students, the research has largely focused on formal methods of support, where participants need to actively engage in a programme over a period of time. Students may instead find informal support more beneficial in helping with stress and wellbeing (Seon et al., 2019). It has been well-documented that building peer networks is a favoured method of choice among university students (e.g., Bilican, 2013; Drum et al., 2009; Turner et al., 2007). The University Mental Health Charter (Hughes & Spanner, 2019) recognises that isolated interventions are not enough to



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address multifactorial challenges; rather, universities need to take a whole institutional approach to student support, providing them with formal interventions and informal services that promote wellbeing.

One approach that has recently been successful in promoting overall wellbeing across universities, is the introduction of Animal-Assisted Interventions (AAI). While evidence is still growing regarding its effectiveness in universities, research has shown promising benefits to supporting student wellbeing and reducing stress (e.g., Pendry et al., 2020). Spruin and colleagues (2020) compared a therapy dog programme to a structured mindfulness intervention. Interestingly, the results indicated that the therapy dog intervention was as effective as mindfulness in reducing stress. Likewise, Binfet and Passmore (2016) found that students who attended an eight-week AAI course reported an increase in overall satisfaction and feelings of relaxation. These findings are consistent with the positive feedback received at universities which have implemented structured therapy dog programmes (e.g., Bell, 2013; Herlache-Pretzer et al., 2020).

Although the research exploring AAI at university has highlighted benefits to student wellbeing, this research has largely focused on formal therapy dog programmes, where students interact with the dogs as part of a structured intervention. Research investigating the impact of Animal Assisted Activities (AAA) on student wellbeing within an informal university context has been scarce. Most research in the area has been conducted in American universities, a common criticism within the literature (Grajfoner et al., 2017). Previous research has largely failed to compare AAAs to the standardised programmes already available to students (Crossman et al., 2015; Spruin et al., 2020; Ward-Griffin et al., 2018). With that, few studies examining university support services have integrated the student perspective (Batchelor et al., 2020), thereby neglecting to consider the student voice.

While AAAs show benefits for supporting student wellbeing (e.g. Jarolmen & Patel, 2018; Muckle and Lasikiewicz, 2017), there are still clear gaps in the literature. There remains a need for research to consider the benefits that AAA can have on students in more informal settings. Moreover, there is little research representing students' lived experience and their perspectives on support. The lack of qualitative research or mixed methodologies may reduce the depth and diversity of perspectives in the evidence base. The current research therefore aims to increase the contextual understanding of the impact that informal AAA programmes may have on student wellbeing and creating a more inclusive and communitive environment for students. Based on previous research, the authors expect that AAA will have a positive impact on students' wellbeing, while investigating how students feel the AAA specifically helps them.



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METHODS

Design

A between-subjects experiment was conducted, employing two conditions with assessments being completed at the end of each condition. The Control Group consisted of participants who attended a standardised weekly 'Chooseday Chill' sessions, a joint initiative between the Students' Union and the University Student Support team. These sessions were created to offer students a relaxed and informal setting where they could meet other students and have informal chats with Student Support. Each week a range of activities (e.g., board games, indoor bikes, card games, etc) are provided for students. The Wellbeing Dog Group was created as a complementary activity to 'Chooseday Chill'. No similar activities were provided, just two wellbeing dogs who students could interact with as they choose.

Participants

100 participants (30 males and 70 females) were recruited from a university. Students who attended at least one 'Chooseday Chill' (n = 50) or Wellbeing Dog (n = 50) session were invited to participate. Across both groups, participants' ages ranged from 18 to 54 years (M = 21.27, SD = 5.36); most of the sample identified as White British (n = 69), and the remaining identified as White European (n = 16), Black British (n = 9), and Asian British (n = 6). Participants came from many year groups, the largest representation being Year 1 (n = 40), followed by Year 2 (n = 23) and Year 3 (n = 21). There was a small number of students indicating they were completing their Foundation Year (n = 10) and Masters (n = 6).

Measures

Participants were asked to complete a survey consisting of both qualitative and quantitative questions. The first section of the survey asked respondents for demographic information (i.e., gender, age, ethnicity, year of study). The second section was taken from two standardised questionnaires:

State-Trait Anxiety Inventory short form (STAI-Y-6; Marteau & Bekker, 1992). The STAI-Y-6 consists of six items related to anxiety (calm, tense, upset, relaxed, content, and worried), rated on a four-point scale (1, not at all; 4, very much), with higher scores indicating greater anxiety. The STAI-Y-6 is reported to have good reliability and validity and has been found useful in assessing subjective anxiety levels. The STAI-Y-6 was found to have a high internal reliability within the current sample, with a Cronbach's Alpha score of .85.

The Short Warwick-Edinburgh Mental Well-Being Sale (SWEMWBS; Tennant et al., 2007). The SWEMWBS is a seven-item short version of a measure originally developed to monitor wellbeing in the general population. The SWEMWBS asks



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participants how often they have been 'feeling optimistic about the future; feeling useful; feeling relaxed; dealing with problems well; thinking clearly; feeling close to other people; able to make up their own mind about things' over the past 2 weeks. With responses being scored on a 5-point Likert scale (1, none of the time; 5, all of the time), higher scores indicate higher levels of well-being. The SWEMWBS is reported to have good internal consistency and reliability within the general population, this was also found within the current sample, with a Cronbach's Alpha score of .90.

In addition to these 13-items, at the end of the survey, participants were asked an open-ended question about the session they attended and if they had anything else to add (i.e., 'Do you have any other comments you would like to add about the session or resources provided?').

Procedure

Upon approval from the University Research Ethics Committee, students attending the weekly 2-hour Chooseday Chill sessions (Control Group) were made aware of the research through leaflets. Potential participants were advised that researchers were evaluating the impact these sessions had on student wellbeing and were keen for feedback regarding the effect students felt the sessions had. Students who agreed to participate were asked to complete a short questionnaire at the end of the Chooseday Chill session. As these sessions were standardised practices that ran every week throughout the semester, all data for the Control Group was collected during the last 3 weeks of one of the semesters.

Once the control data was collected, the wellbeing dogs were introduced as an alternative to the Chooseday Chill sessions (Wellbeing Dog Group). There were two dogs, one was a 6-year old Labrador who worked as a therapy dog (certified by Pets As Therapy - PAT) at the university, the other was a 4-year old Labrador who worked as a facility dog (accredited by Assistance Dog International - ADI), supporting vulnerable people in the criminal justice system. Both dogs had extensive experience providing support and companionship to university students, hence their inclusion in the present research.

Due to the nature of their training and certification, the therapy dog and the facility dog were both calm and docile during the AAA sessions, so as to provide a relaxed environment for students. They would permit students to pet them, with a limit of four people to a dog at any one time to avoid overcrowding the dogs.

Both dogs were accompanied by their handlers. The therapy dog was accompanied by her owner who worked extensively with the dog and underwent some training during the therapy dog's certification to help with dog handling during AAA, and the facility dog was accompanied by his primary handler who underwent specific training in the United States prior to bringing him to the UK.



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The dogs were made available to students at the same time in the same building as Chooseday Chill, situated in a separate enclosed area for the consideration of cynophobic and allergic individuals. Students were made aware of the wellbeing dog service through leaflets, posters and bulletin boards on campus. Potential participants were advised that the wellbeing dogs were being trialled over a 6-week period. Like the Control Group, potential participants were told that the impact of the service on student wellbeing was being evaluated and feedback on the wellbeing dog service was being collated.

In the control condition, two dogs, two handlers and a data collector were present. Handlers always supervised the dogs, and occasionally helped to facilitate interactions by encouraging the dogs to approach participants, although mostly students would approach the dogs with minimal encouragement. Participants were allowed to interact with each dog in groups of up to four so as not to overwhelm the dogs. Participants were not given any aids (e.g. dog toys) to interact with the dogs.

After the students left the intervention at their chosen time, those students who agreed to participate were asked to complete the same short questionnaire as participants in the Control Group.

As both groups ran weekly, the self-allocated participants were told not to complete the questionnaire more than once. Upon completion of data collection, all participants were thanked for their time and fully debriefed.

RESULTS

Data Analysis

To investigate the impact of the wellbeing dog service on student wellbeing compared to the standard support that is offered to students, the quantitative data collected from the STAI-6 and SWEMWBS was analysed to test for differences across the Wellbeing Dog group (n = 50) and the Control group (n = 50). Thematic analysis was then performed on the qualitative data collected from the open-ended questions at the end of the survey to identify commonly occurring patterns, or themes, in the data (see Braun & Clarke, 2006). The qualitative data was used to enhance the results that emerged from the quantitative data, providing deeper context into the perceived impact each service provided. 80% (n = 40) of participants in the Wellbeing Dog group and 44% (n = 22) of participants in the Control group, completed the open-ended question at the end of the survey. To ensure findings from the quantitative data did not influence the qualitative findings, a trained research assistant unfamiliar with the study or outcomes of the quantitative data performed the analyses. This mixed-method design enabled a comprehensive understanding of the area through the triangulation of the qualitative and quantitative data, creating convergence of information from different sources (Lobe, 2008).



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Quantitative data: Anxiety and mental wellbeing

The average STAI-Y-6 scores after participants partook in the Wellbeing Dog group were M = 33.6 (SD = 12.5), compared to the Control group (M = 40.8; SD = 12.4). Scores of around 34 to 36 are considered to be in the ‘normal’ range (Bekker et al., 2003), so these results suggest participants in the control group experienced high levels of anxiety after their sessions, above what would be considered the norm. An independent t-test was used to examine if there was a difference in STAI-Y-6 scores across the two groups. Results found a significant difference, $t(98) = 1.49$, $p = 0.001$, indicating that the Wellbeing Dog group exhibited lower levels of anxiety compared to the Control group.

Item: “I feel...”	Control		Wellbeing Dog		t-test
	Mean	SD	Mean	SD	
Calm	2.7	0.8	3.4	0.7	4.16**
Tense	1.8	0.8	1.5	0.6	-2.28*
Upset	1.5	0.8	1.6	0.8	-.085
Relaxed	2.5	0.9	3.2	0.8	4.29**
Content	2.5	0.8	3.1	0.9	3.56**
Worried	2.2	1.0	1.9	1.0	-1.92

**p<0.01. p<0.05*

Table 1. The Mean and Standard Deviation (SD) of scores for the Wellbeing Dog and Control groups on each of the items on the STAI-Y6 scale (NOTE: high values represent high level of agreement with each of the items below).



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Item	Control		Wellbeing Dog		t-test
	Mean	SD	Mean	SD	
Feeling optimistic	3.3	0.8	3.7	0.7	2.53**
Feeling useful	2.8	1.2	3.4	1.0	2.27*
Feeling relaxed	3.2	1.0	4.0	0.8	3.97**
Dealing with problems well	2.9	1.2	3.2	0.8	1.44
Thinking clearly	3.0	1.0	3.7	0.9	1.60
Feeling close to people	3.1	1.1	3.7	0.9	2.76**
Make up my own mind	3.0	1.0	3.4	0.9	2.10*

**p<0.01. p<0.05*

Table 2. The Mean and Standard Deviation (SD) of scores for the Wellbeing Dog and Control groups on each of the items on the SWEMWBS scale.

To explore the impact each service had on the mental wellbeing of participants, an independent samples t-test was performed comparing the SWEMWBS mean scores of participants after partaking in the Wellbeing Dog group (M = 24.2, SD = 4.6), compared to the Control group (M = 21.2, SD = 5.4). Results indicated a significant difference between the two groups, $t(98) = 2.41, p = 0.018$, with the Wellbeing Dog group showing higher scores, indicating better overall wellbeing.

Exploring each item from the STAI-6 and SWEMWBS further (see table 1 and 2 below), compared to the Control group, the Wellbeing Dog group exhibited significantly higher scores on all STAI-6 items associated with a positive emotional state (i.e., calm, relaxed, content). Likewise, the Wellbeing Dog group showed significantly higher scores on the items associated with positive feelings, such as feeling optimistic, useful, relaxed and close to people.

Qualitative data: Short answers

The results above were supported by the responses collated from participants when asked if they had any additional comments about the sessions. For the Control group (n = 22), while the thematic analysis found no clear themes, it was interesting that less than half of comments (n = 8; 35%) were positive. The most common types of positive feedback were around enjoying the sessions (e.g., "Loved it!") and finding them useful as relaxation (e.g., "...I look forward to this session as it gives me a moment to relax [and] socialise without the pressure of getting drunk..."). Interestingly, half of the short answers for the Control group (n = 11; 51%) contained ideas for improving the sessions, with the most common being to increase the number and/or variety of activities (e.g., "Another table



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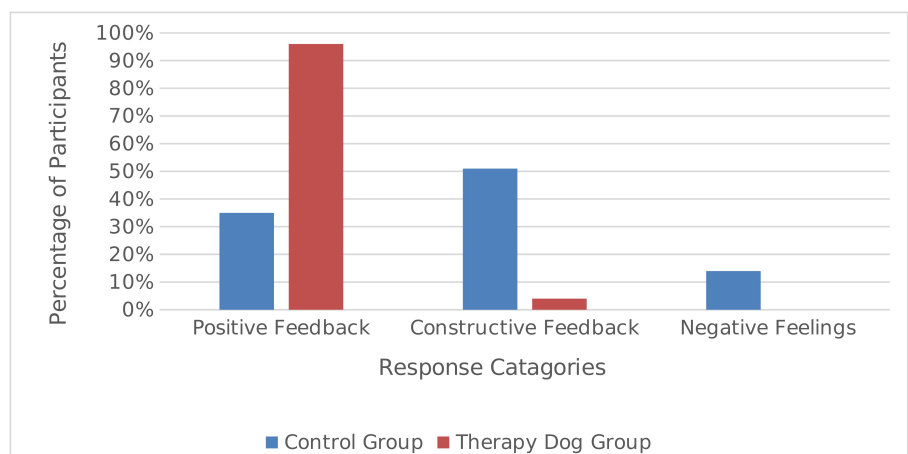


Figure 1. The proportion of participants in each group who, when asked if they had anything extra to add about the sessions, left positive feedback, discussed negative feelings, or provided constructive feedback.

tennis table please. And more board games.”). The remaining participants commented on their negative feelings ($n = 3$; 14%), divulging their worries [without comment on whether the sessions helped to alleviate these or not], (e.g., *“Feeling part of a group and accepted by class peers is a worry for me.”*). Contrastingly, the responses from the Wellbeing Dog group ($n = 40$), revealed that 96% ($n = 38$) were positive, with 4% ($n = 2$) of participants providing constructive feedback on improving the sessions. As illustrated in Figure 1 below, comparing the short answer responses between the two groups, it is interesting to note the Control group focused more on asking for improvements for the sessions via constructive feedback, whereas the Wellbeing Dog group emphasised the positive effect the service had.

Exploring qualitative responses for the wellbeing dog service further, the thematic analysis for the Wellbeing Dog group found three clear themes emerge: calming effects, mood elevation and increased access, which highlighted the positive emotional states found in the quantitative data. Each theme is detailed below with supporting verbatim patterns.

Calming effects

The most common response in the Wellbeing Dog group when asked if they had additional comments, was to discuss the calming effect spending time with the dogs had, *“Thoroughly enjoy it, very useful, makes me feel a lot calmer. Would definitely like it to continue!”*. Participants frequently referred to their time with wellbeing dogs as a form of anxiety reduction and/ or as a way of reducing their stress, with participants stating how the dogs have *“...helped so much with anxiety and are such a nice service to have”*. One participant explained about the impact this calming effect has had, stating:

“the wellbeing dogs have made a massive change to me while attending these sessions... Getting cuddles with them always takes stress off of me which is really helpful. They help me manage my anxiety and stress and help me to relax. I would love to have more opportunities to interact with the dogs on a smaller group or 1-1 basis.”

One participant explained how the effect was cumulative, believing that the more often they could have access to the dog, the more beneficial it would be:

“Please bring them back! They make me feel calm and help me forget about the bad things and what I am worrying about at the moment. The more sessions with the dogs, the more relaxed it will make me feel”.

Mood elevation

Participants often indicated that spending time with the wellbeing dogs lifted their mood. Some suggested this was because they brightened their day, *“They were such a help to me. They brightened up my day so much. It would be such a benefit to have access to them every week to reduce my stress and worries”*, or cheered them up:



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"I had been having mental health problems recently and the first thing I wanted to do was say hello to the dogs as they cheer me up as I'm away from home and missing my dogs. As soon as I saw the dogs I felt a lot more relaxed and calm".

Commonly, participants stated spending time with the wellbeing dogs made them feel happier, *"I feel really happy when the dogs are coming to the library or any other events and make me feel I can have a break with my studies. I'd love to see them more!"*, and improved their mood, *"I feel more productive and happy, they just improve my mood so much. Best idea to have wellbeing dogs".*

Increased access

A common theme in the Wellbeing Dog group was that they would like sessions to continue and become more integrated into the services the university provides for supporting students with mental health. One participant explained, *"they're great. Wellbeing dogs should be more available for students"*, likewise, another student said how they *"...definitely know I want them as a more permanent part of [the university], [they] make life easier"*. There were further requests for the wellbeing dogs to be a more common feature of the university, with one participant suggesting they should be a service which can be accessed by staff as well as students:

"Would like to see the wellbeing dogs more often around the library or even campus! They make everyone happy and the more dogs the better! A great addition to the university, as a student and employee who spends a lot of time at the uni, I would love to see dogs in the offices and available to pet".

It was pointed out by some however that because there was such a demand for the dogs, it reduced the effectiveness of the sessions. One participant explained; *"the dogs were very helpful to distress, however I feel there are too many people needing the assistance of the dogs – more dogs would relieve stress on both the dog(s) and people"*. Accordingly, the consensus amongst the Wellbeing Dog participants was that wellbeing dogs were a beneficial service they would like to have more access to, as the dogs allow students to have *"a great break away from assignments' and are 'fantastic mood lifters for breaks"*. One participant explained on this point further:

"Dogs would be great to have in the library as this is the place where most students feel a sense of low wellbeing. Having the dogs would provide students with intervals of enjoyment, calm and enhance their sense of wellbeing".

DISCUSSION

The aim of this study was to provide a greater contextual understanding into the potential impact of AAA on the mental wellbeing of university students. To investigate this, students attending a standard weekly support service were compared to students who also attended the standard service in addition to the wellbeing dog service at the target university. Data on student wellbeing and anxiety were collected after each session, along with comments students had



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about the services they attended. Results from the quantitative data indicated that, compared to students who attended the standard support services, those utilising the wellbeing dog service exhibited lower levels of anxiety (STAI-6) and higher levels of wellbeing (SWEMWBS) after sessions. The results highlighted significantly higher scores on items associated with positive emotional states (i.e., calm, relaxed, content, optimistic, useful, etc); these results were supported by themes revealed in the qualitative responses (i.e., calming effect, mood elevation and increase access), providing insight into the positive impact students felt the wellbeing dog service had on their wellbeing.

These findings support previous research highlighting the benefits AAA can have in supporting student wellbeing (Crossman et al., 2015; Ward-Griffin et al., 2018). The results are compatible with research carried out in American universities (Crossman et al., 2015; Pendry et al., 2019) and the limited research within the UK (Grajfoner et al., 2017; Wood et al., 2018). The results also support research comparing the benefits of AAA to the standard support services available to students (Spruin et al., 2020), finding that AAA is an alternative method of support showing great therapeutic promise to the university population.

The present study found new evidence suggesting that integrating informal AAA helps to create a more inclusive and relaxed environment for students to engage with each other, which counteracts anxiety and increases wellbeing. Research globally has highlighted the benefits that informal support can have on students. Building informal social support networks has been found to reduce loneliness and worry (Soe & Theint, 2020), influence adjustment in first-year university students (Lau et al., 2018), and lower feelings of depression (Friedlander et al., 2007). Student Minds (2021), a UK-based charity which supports and empowers university students, emphasises the importance of peer support and inclusivity, and the positive impact this can have on stress and support-seeking behaviours.

With the increased severity and numbers of students seeking mental health support, universities are struggling to cope, and the current formal services offered are not enough (Wynaden et al., 2014). Mental health advocates have emphasised the need for universities to foster a supportive and inclusive environment for students (Khawaja & Dempsey, 2012; Stallman, 2010), which has a positive impact on students' overall wellbeing (Galbraith et al., 2014) and academic outcomes (Storrie et al., 2010). AAA has been a well-documented and effective approach for creating inclusive and therapeutic environments in many organisations (Coakley & Mahoney, 2009), with the National Institutes of Health (Johnson et al., 2003) identifying AAA and other forms of pet therapy as best practice approaches for creating a healing environment. The outcomes of the current study were therefore some of the first to explore the impact of AAA on creating this type of environment within a university.

The integration of an informal AAA approach within the current study provides new insight into the importance of informal methods of support at university. Previous research exploring barriers to support-seeking in young adults has discovered that young people are more likely to seek help from friends rather



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than professionals (Gulliver et al., 2010). In exploring novel forms of informal support appealing to a specific demographic of student, the student not yet ready to seek professional support, a more inclusive environment is created where help is not limited to the student able to seek it. That being said, it would be interesting to investigate whether similar benefits can be found from a more structured, formal AAI or AAT in a UK university and what the limitations of such a programme may be. As this research was specifically investigating informal support, AAI and AAT were out of scope for the current research due to the structuredness of these interventions.

There is an overwhelming consensus amongst academics (e.g., Batchelor et al., 2020), and major university stakeholders (e.g., Piper & Emmanuel, 2019) about the importance of working in partnership with students and incorporating their perspective when introducing provisions and strategies, something that has been missing in most AAA and AAI research within universities. Part of meeting the needs of students is about gaining feedback about their experiences and perspectives (Darling-Hammond et al., 2020). Student Minds (2021) strongly advise listening to the student voice and working to develop support services they feel would be beneficial. The charity highlight that students are keen to have a greater availability of peer support, providing students with a greater sense of motivation, empowerment and wellbeing. In listening to the student voice, university staff can understand what students need to thrive. The current study was one of the first to incorporate the student perspective into the impact that AAA had on student wellbeing, thereby ensuring a student-focused viewpoint.

Although this research provides a strong argument for wellbeing dog services within universities, there are a few limitations to consider. While students accessing the wellbeing dog service showed a higher level of wellbeing and lower levels of anxiety, compared to those that attended the standard university service, this data was only collected at the end of the session. Comparison of pre and post data for participants was not available, thus the extent of impact the wellbeing dog service had is not known. Additionally, as the data was collected immediately after the students completed their session, it is not known how long these benefits might last. It would therefore be useful to see if students in future studies show evidence of long-term improvement in anxiety and wellbeing from attending regular informal AAA sessions. That being said, the current study was not designed to investigate these factors, but to gain a greater contextual understanding into the potential impact wellbeing dog services could have on students. The study was designed to explore the quantitative and qualitative outcomes, ensuring that students had an opportunity to voice their feedback. The Higher Education Academy (Healey et al., 2014), emphasise the importance of working with students as partners in higher education, something that has been missing in research within the area. A fundamental part to understanding the needs of students is to listen to their perceptions of the support offered (Darling-Hammond et al., 2020).

Despite the limitations of the study, the findings provided a greater contextual understanding into the impact AAA can have on the wellbeing of university students. The findings highlighted the potential impact that informal methods



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of support, such as AAA, can have in creating a supportive and inclusive environment for students. Overall, our study suggests that AAA can be a powerful and innovative way to support university students, with the potential impact to progress and modernise the services of support available to students.

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