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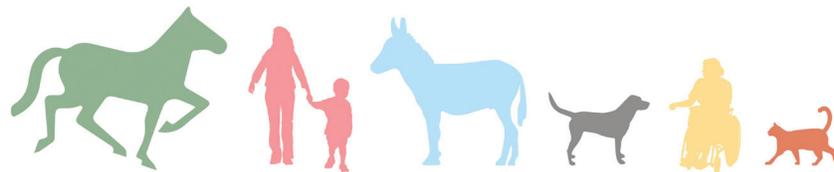
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Human-Animal Interaction to Support Well-Being at University: Experiences of Undergraduate Students in the UK

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Keywords: human-animal interaction, companion animals, undergraduate students, mental health, qualitative research, well-being

Abstract: In the context of increasing concerns about student mental health and the therapeutic value of companion animals for mental health, there is limited understanding of the potential contribution of human-animal interaction in relation to undergraduate well-being. This study aimed to develop an in-depth understanding of the meaning and well-being roles attributed to human-animal interactions by undergraduate students in the UK. Using a qualitative research design, semistructured interviews were conducted with 60 students aged between 18 to 23 years at a UK university of whom 39 implicated the role of companion animals in their well-being and were included in analysis using inductive thematic analysis. The most commonly reported form of human-animal interaction was contact with companion animals who either lived with participants, their families, or other friends and acquaintances. Actual and potential benefits of human-animal interaction for undergraduate students included helping students to manage a felt or experienced pressure to be independent, ameliorating loneliness and boredom, providing connections to support networks on and off campus, imparting emotional support during times of uncertainty and change, and directly facilitating social interaction. Companion animals were considered an important continuation of and connection to students' previous lives, which helped them to manage the university transition and maintain a positive sense of self. Barriers attributed to companion animal ownership included the lack of practicability of caring for a companion animal while at university because of living arrangements, financial constraints, and the time pressures associated with being an undergraduate student. As a result, participants described alternative ways in which students could interact with animals, which included regular and frequent service/therapy dog visitations, links to local

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animal shelters and zoos, and smaller companion animal presence in classrooms and in university halls. This study provides unique and tailored insight into the value of human-animal interactions for undergraduate students' mental well-being and the ways in which this could be harnessed to promote well-being.

Introduction

The mental health of undergraduate students is a rising global concern with the growing prevalence of and demand for university counseling services in both the United Kingdom and United States (Thorley, 2017). Greater numbers of students are also reporting more severe forms of mental illness (Avotney, 2014). Such increases have been attributed to unique concerns such as social, financial, and academic pressures, and accommodation and identity concerns (Scanlon et al., 2007) currently facing modern students (Yap, 2018). However, more research is required to fully understand the university transition and offer acceptable, effective, and appropriate support services for this group.

Mental health problems, if left unaddressed, result in serious consequences such as increased student dropout rate and suicidal ideation/attempt. Over 80% of universities in the UK have witnessed an increased demand for counseling and for disability services with as many as 1 in 4 students using or waiting for counseling and/or disability services (Thorley, 2017). Although such services have documented success rates (Biasi et al., 2017; McKenzie et al., 2015), factors such as social stigma, reservation about counselors' competence, and location and time restraints can undermine their effectiveness (Brogolia et al., 2018; Hinderaker, 2013). This, together with limited response from the supply side, highlights the need to consider alternative forms of suitable therapeutic provision to support student mental health.

Traditional approaches to managing and promoting mental well-being tend to concentrate on psychological components of behavior change. Such initiatives can be effective for managing symptoms but fail to consider the wider available resources of health and well-being that lie in material and social relationships in local settings and form constituent parts of

how people manage their health in their everyday lives without recourse to formal services (Reeves et al., 2014; Rogers et al., 2011). A supportive network can contribute to positive mental health with emphasis often placed on close human relationships (Nasser & Overholser, 2005) to the detriment of more casual acquaintances, valued activities, or nonhuman relationships (Brooks et al., 2016, 2020; Rogers et al., 2014).

A burgeoning evidence base has highlighted the potential value of animal-assisted interventions (AAI) for mental and physical health care (Jones et al., 2019; Kamioka et al., 2014), intellectual disability (Maber-Alesksandrowicz et al., 2016), dementia (Yakimicki et al., 2019), and autism (O'Haire, 2013). More recently, evidence has also demonstrated the therapeutic benefits of companion animals in relation to physical health and emotional well-being. People form distinct bonds with companion animals as they fulfil the four prerequisites of an attachment figure: safe haven, secure base, proximity maintenance, and separation distress (Zilcha-Mano et al., 2011). Companion animals are a source of unconditional emotional support and companionship (Meehan et al., 2017) and are important social conduits facilitating and sustaining relationships with others (Noonan, 2008). Additional psychological benefits include positive self-esteem (McConnell et al., 2011), elevated life satisfaction (Bao & Schreer, 2016), enhanced social and community interaction (Bakerjian, 2014), a sense of social responsibility, increased social support (McConnell et al., 2011), and reduced perception of isolation (Noonan, 2008). More recently, evidence has highlighted the role of companion animals in the support networks of people diagnosed with physical and mental health conditions, emphasizing companion animals' unique role in relation to condition management and the value of considering these relationships alongside human ones in terms of supportive contributions (Brooks et al., 2016, 2018).

For students, human-animal interactions (HAIs) have operated as a source of comfort and unconditional support under stressful circumstances (Adamle et al., 2009). Even brief interactions with canines reduced stress and anxiety perception (Banks et al., 2018; Wood et al., 2018), enhanced positive mood (Khalid & Dildar, 2019), decreased negative emotions (Pendry et al., 2018), reduced feelings of homesickness, improved sense of belonging (Binfet, 2017), and elevated life satisfaction (Binfet & Passmore, 2016). Such effects were observed even when simply viewing images of companion animals (Torres et al., 2016). They additionally buffered the adverse outcomes of social exclusion and accompanied psychological distress (Aydin et al., 2012). This highlights the potential of HAI for this group, but existing evidence is predominantly quantitative in nature and has focused on formalized HAIs to the detriment of in-depth qualitative approaches and an understanding of interactions with animals in more open settings.

The present study aimed to develop an in-depth understanding of the meaning and well-being roles attributed to HAIs by undergraduate students in the UK.

Methods

This study employed a qualitative research design. This study forms part of a larger study exploring the well-being networks of undergraduate students in the UK. This article reports on those students who identified an animal as being important in relation to their well-being.

The study gained approval from the Health and Life Sciences Research Ethics Committee (Psychology, Health and Society) Ref: 5740 and 4123.

Sample

Participants were recruited using convenience sampling and were eligible to take part in the study if they were an undergraduate student in the UK and were aged over 18. Interested participants responded to adverts that included an overview of the study and details

Table 1 Demographic Information of Participants

Variables	% (n)
Gender	
Female	87.2% (n = 34)
Male	12.8% (n = 5)
Age	
Mean	19.4 years
Range	18–23 years
Year of study	
1st year	58.9% (n = 23)
2nd year	0% (n = 0)
3rd year	15.4% (n = 6)
Missing	25.6% (n = 10)
Number of companion animals owned	
One	74.3% (n = 29)
Two	10.2% (n = 4)
Three	5.13% (n = 2)
Four or more	7.69% (n = 3)
Not identified	2.56% (n = 1)
Types of companion animals owned	
Dog	82% (n = 32)
Cat	17.9% (n = 7)
Guinea pig	2.56% (n = 1)
Horse	2.56% (n = 1)
Rabbit	2.56% (n = 1)
Not identified	2.56% (n = 1)

of participation by contacting researchers directly. A convenient time and date for the interview was then arranged via email. A total of 60 participants took part in the study and 39 implicated the role of animals in relation to their well-being and were included in the current analysis. This sample was predominantly female with an average age of 19, and all participants were studying at a higher education institute in the northwest of England (see Table 1).

Data Collection

Data were collected using in-depth semistructured interviews undertaken by 6 female undergraduate students at the University of Liverpool under the close supervision of author HB. Interviews started by asking participants to identify all the people, places, things,

and activities they considered relevant to their well-being while at university. The interviews then qualitatively explored the role of these identified supports in relation to the value and supportive features of each with a particular focus on the role of animals. The interview schedule was derived by the research team drawing on literature in the field demonstrating the positive and negative aspects of HAIs for other populations (Fraser et al., 2020; McConnell et al., 2017; Winefield et al., 2008). The semistructured format of the interviews allowed the collection of rich data on the thoughts, feelings, and beliefs about the HAI in relation to well-being at university and for researchers to probe in depth in the personal experience of students during this time (DeJonckheere & Vaughn, 2019).

Interviews were carried out between January 2019 and March 2020 in private rooms on the university campus or at suitable community venues depending on the preference of individual participants. Interviews lasted between 45 and 60 minutes on average and were transcribed verbatim by researchers. All identifiable information was removed from transcripts during this process.

Data Analysis

This study used the phases highlighted by Braun and Clarke (2006) for conducting an inductive thematic analysis. Authors AK and HB first familiarized themselves with the data by reading and rereading transcripts. They then independently generated initial codes in the form of words and/or short phrases from a subset of transcripts before meeting to discuss code allocation and identify any discrepancy in interpretations. The remaining transcripts were then coded by author AK. Phase three involved organizing identified codes into overarching themes to develop a preliminary thematic framework by examining identified codes for similarities and differences and considering any relationships between codes. Once this framework was developed, the dataset as a whole was revisited to identify any data that had been missed or that fell out of the initial framework. The analytical process was supported through the use of memos developed by the coders and by demographic

data, which aided the contextualization of data and allowed for further iteration of the analytical framework. The final framework was presented to the wider study team to verify interpretations and identify potential inaccuracies and for agreement to be made on the final thematic framework, which was considered representative of the data.

AK is a lecturer and student counselor at Iqra University Islamabad Campus, Pakistan. HB is a senior lecturer and health services researcher at the University of Manchester. AR is a professor of health systems implementation at the University of Southampton. EV has recently completed a master's program in research methods at the University of Liverpool and had recent experience of the transition to university. No authors had any prior relationships with study participants. The conceptual starting point for the study was the value of lay and community support networks in mobilizing and accessing support to promote mental health and well-being.

Results

Most of the contact participants reported with animals in the current study was through companion animal relationships. Most participants (29/39) reported owning one companion animal with dogs the most commonly owned companion animal followed by cats (see Table 1). The majority of the participants (32/39) did not live with their companion animals due to lack of permission or access at university. One participant lived in accommodation where their flat-mates had a companion animal; two participants had access to their partners' companion animals while one participant had access to their own companion animal as they lived at home during term time. Only two participants mentioned the presence of companion animals or other animals on campus, mentioning a campus cat and a stray cat that frequented university accommodation. No participants reported taking part in animal-assisted therapy or any formalized interaction with animals during their time at university. While narratives focused on relationships with companion animals, students also made suggestions

about how HAI could promote undergraduate student well-being at university.

The main themes that were interpreted from the data were the relevance of companion animal separation during university transition, tangible and symbolic support from companion animals in transitioning to university life, barriers to living with a companion animal while on campus, and the value of and suggestions for increasing HAI for undergraduate students. Themes will be presented using thick descriptions of interpretations and supported using direct data excerpts to support the analysis.

The Relevance of Companion Animal Separation during University Transition

Most participants described having to leave their companion animals at home as part of the process of cutting ties with family members and other support systems when they moved to campus during the university transition. They reported missing the comforting, constant presence and close proximity with their companion animals and the shared activities that included but were not limited to going on walks, playing around the house, or just sitting together. At the beginning of university, absence of companion animals resulted in difficulties in managing stress, loneliness, boredom, and maintaining a routine.

I don't know, probably like, I remember when I first came to uni and you just leave your room or you're bored and you're like I wish I had the dogs here just to cuddle or play with, it's something to do cos in the evening you can go cuddle them or put them on your lap and stuff so probably just a bit of a comfort feeling and relaxed as well. (Participant 35)

I've been waiting to see her, kind of like there's something missing because she's a presence that's always there, you don't have to do something or talk to them or have this complex relationship. (Participant 34)

Participants reported adopting several compensatory strategies to mitigate the loss of companion animals during the transition to university. Many looked forward to home visits to meet companion

animals. Few asked their parents to bring the animals to visit them at university.

I definitely don't think I'd be able to cope without seeing my family every weekend, even just seeing my cat. I nearly cry every time I see her, every time I go home because she's so happy to see me. (Participant 21)

My mum was like "oh we can come up and see you" and I'm just "bring the dog, please bring the dog." Seeing my family is lovely but seeing my dog is more important. (Participant 8)

Other participants described interacting with their companion animals through video calls, pictures on social media, and videos/pictures of companion animals that they had stored previously or had been sent from home. A small number of participants adopted new companion animals while at university or planned to move to companion animal-friendly accommodation so they could adopt an animal in the near future.

I love going home to see my dog. I FaceTime my mum just to speak to the dog. (Participant 10)

And if I'm bored and I'm just scrolling through my phone I'll end up just watching like every single video I've got of him—and I'll be there for like an hour. (Participant 13)

I want to do really really well in uni so I can move somewhere that I could have cats so I can bring him with me. (Participant 3)

Tangible and Symbolic Support from Companion Animals in Transitioning to University Life—the Salience of Loneliness, Stress, and a Pressure to Be Independent

Actual Support from Companion Animals for People with Regular Contact with Companion Animals. Participants' narratives about the value of HAI while at university included the actual benefits they reported experiencing from their companion animals if they had regular access

to them but also the potential benefits they could confer had they been able to spend more time with their companion animal during the university transition. Participants' narratives about transitioning to university were overlain with loneliness, stress relating to workload and financial pressures, and a felt pressure to be independent, often for the first time in their lives. Participants felt strongly that relationships with companion animals were forms of actual or symbolic support during these difficult experiences and provided a continuation and link to previous lives.

Probably emotional and comfort. She would just make me happy when I'm really sad. Do you ever get that when you feel like dogs just understand when you're sad? They just sense something's wrong. . . . Everyone else tends to offer me one kind of support but my dog offers me loads of different kinds. (Participant 14)

Only a small number of participants reported currently living with their companion animal at home or in university accommodation. These participants felt that their companion animals provided a sense of comfort, facilitated social bonding with new people, and encouraged them to step out of their comfort zone. These benefits were particularly important during the university transition because it represented a period of significant change for participants and they were often removed from their usual support systems.

Like especially cause I live at home, whereas other people that live in accommodation their pets are like miles away but I see mine like every day all day, so he provides like the emotional support and stuff like that constantly for me cause I'm always with him. (Participant 32)

I've had to go to the vets by myself for them [guinea pigs], or for example I had to take them to the small animal hotel for me to be able to go on holiday. So it's the whole thing of like, it's putting me a bit outside my comfort zone, but making me a little bit more social with the outside world. (Participant 18)

Even for participants who did not have regular contact with their companion animals, their companion animals appeared to play a remote and imagined role in managing their emotional well-being during their time at university. Participants described how their relationships with companion animals encouraged regular contact with family members through video calls to inquire about their well-being and to talk to their companion animals. Others interacted by requesting photos of their companion animals or their family members sending them photos to cheer them up. Home visits to meet companion animals or family members bringing companion animals to visit increased the likelihood of positive interactions with other supportive network members such as family or close friends. This directly challenged the experience of isolation from existing support systems that moving away from home to live on campus instigated. Participants also described a pressure to be independent that was associated with becoming an undergraduate student and a reluctance, therefore, to ask for too much help from network members at home.

In my first week at uni, I was so lonely and it was such a big adjustment . . . It was hard because I was just completely removed from this support network I'd built up and got comfortable with and forced to, kind of, rebuild it and restructure it, which took so much time and energy. I was exhausted. (Participant 10)

Contact with companion animals provided a valid reason for getting in contact with family and friends from home and maintaining this form of social contact throughout the academic year.

I don't live far away so I try and go home at least once a week. There've been times I've been home 4 times in a week though. Just to see the cats. (Participant 15)

One participant provided regular support with a family member's companion animal while another felt more connected with their partner due to the latter's companion animal.

So because this puppy is my sister's puppy, she's rang me a lot for support with, you know, asking me advice on it and that sort of thing. . . . So I think that's definitely improved that relationship. (Participant 18)

Participants currently not living with their companion animals felt that their companion animals would alleviate stress during exams and hectic university schedules, and close proximity would add a comforting presence at the university. Others highlighted potential support for physical health by motivating them to go out for a walk rather than staying inside their rooms. Additional potential benefits highlighted were decreased loneliness, improved self-care, and a better-established daily routine.

It'd help with the loneliness. That'd be a massive help. Just having the presence of someone who adores you. That's so nice. (Participant 10)

I find that when I'm not looking after the cat my self-care slips a little bit. Having a pet encourages you to clean up after yourself and take care of yourself. You have to look after yourself 'cos there's another living thing that's relying on you to be okay so you can look after them too. (Participant 3)

Barriers to Living with a Companion Animal while on Campus

Despite the aforementioned benefits attributed to companion animal interaction, some participants felt that the presence of companion animals at university might adversely affect their academic performance by being a distraction to attending teaching and undertaking independent study. There were also concerns that caring for a companion animal full-time would inhibit their ability to engage fully with the social aspects of university life, which could potentially reduce participants' ability to make new friends and integrate fully while at university.

Like it can have a toll on your social life if you can't leave the house, I can't leave her on her own for too long, so you've got to in a way adapt your life to a dog. (Participant 6)

Participants described the financial and practical burden of caring for a companion animal, particularly larger animals such as dogs or cats, while on campus. The majority of participants felt this would not be practicable given the time and emotional commitment required to complete university courses and their limited financial means during their time as a student. Companion animals could also be a source of worry in terms of their well-being or if they became unwell, which was considered an additional source of stress for students.

I guess there's emotional worry if anything happens to your pets, like if they get sick or anything like that or something happens, like they run away or get injured while going out for a walk—there's like that potential for emotional distress. (Participant 11)

The Value of and Potential Suggestions for Increasing Human-Animal Interaction for Students while at University

Given the benefits of relationships with companion animals but the aforementioned barriers to full-time companion animal ownership, participants described a myriad of ways in which universities could increase opportunities for HAIs without the need for students to have a companion animal full-time. Some were aware of the drop-in sessions with a therapy/guide dog that the university offered during exam time but had not attended themselves due to limited access opportunities. However, participants felt there should be more regular and frequent access to such sessions all year round with advance prior notice and better advertisement. One participant mentioned that there should be increased accessibility for students with mental health problems.

Dogs especially, because they're universally happy, if we could have that contact with them on a regular basis then student well-being would be so much better. It'd help with all-year round stress as well. The uni forgets that students aren't just stressed during exams, we all constantly have deadlines to meet and assignments we're working on, so it'd be good to have that outlet available for those days we are

feeling particularly vulnerable and just need that pick-me-up so you can carry on working. (Participant 3)

Participants living in university accommodation felt that having a smaller companion animal in halls of residence would promote well-being by encouraging communal care and promoting bonding with others. Others felt it would help to introduce companion animals within a class setting and allow students to opt for a class incorporating therapy/service dogs, thus serving as a relaxing presence while encouraging participation in smaller class settings. Other suggestions included introducing animal-based events/activities, arranging visits to local shelters or zoos, or launching animal-themed cafés.

Other than that, maybe smaller animals being allowed in accommodation settings, like hamsters maybe, it gives people a common interest then. Like if you're struggling to make friends you could bond with someone in your accommodation over this communal pet that everybody is responsible for. (Participant 16)

Like you could have therapy dog classes and non-therapy dog classes and you could choose whether you had that presence. I think the positives definitely outweigh the negatives though. Like you can't be stressed when there's a gorgeous dog in the classroom with you. Just their presence would make you feel better. (Participant 14)

Discussion

This study aimed to develop an in-depth understanding of the meaning and well-being roles credited to HAI by undergraduate students in a UK university. The majority of interactions with animals reported by participants were in the form of relationships with companion animals; however, most participants no longer lived with their companion animals because they had moved away from home to live on campus. This separation was difficult for participants to manage and, combined with limited alternative opportunities for HAI offered by universities, appeared to exacerbate the stressful transition to university

life. Most participants would have valued more contact with their companion animals during this time but also acknowledged that the cost and time implications of having to care for their animals if they lived with them full-time would not be practicable. Instead, participants described alternative forms of HAI that they felt would benefit undergraduate students.

Global concerns about undergraduate student mental health requires concerted efforts in identifying and mobilizing resources to support students during the transition period. Relationships with companion animals have been shown to help people manage diagnosed mental health problems through the provision of secure and supportive relationships, distracting people from upsetting thoughts, experiences, or symptoms and providing encouragement for activity (Brooks et al., 2016, 2020). However, in-depth analysis of such relationships in relation to undergraduate student mental health and well-being are currently lacking. Integrating into university life comes with a set of unique challenges such as living away from home, making new friends, managing finances, developing student identity, and dealing with the new learning environment (Scanlon et al., 2007), all of which are thought to have an impact on mental health (Eisenberg et al., 2007; Mistler et al., 2012; Thorley, 2017). One important aspect of assimilating successfully in university life is having a reliable support network, with greater perceived support translating into better emotional and personal adjustment (Friedlander et al., 2007; Jindal-Snape, 2010). With companion animals considered as significant members of a family structure (Cohen, 2002), participants in the current study felt such relationships contributed significantly to their mental health, often prioritizing contact with companion animals ahead of that with family members. This notion of valued relationships translated through to participants' experiences on entering campus life and provided a bridge between the security of the past and overcoming the insecurity of the present.

Through the reported experiences of participants with their companion animals, this study lends support to existing literature demonstrating

the beneficial effects of companion animal interactions for students such as acting as a source of comfort and unconditional support (Adamle et al., 2009), reducing perception of stress and anxiety (Banks et al., 2018), reducing homesickness and increasing life satisfaction (Binfet & Passmore, 2016), and buffering the effects of social exclusion and psychological distress (Aydin et al., 2012). The current study identified additional sources of value attributed to such relationships including helping students to manage a felt pressure to be independent, directly challenging loneliness and boredom, providing connections to support networks off campus, increasing students' confidence to push themselves outside their comfort zone, and directly facilitating social interaction. Interactions with companion animals also appeared to represent transient objects of ontological security—a sense of order and continuity required to maintain a positive self-identity (Brooks et al., 2016; Giddens, 1991)—both symbolically and tangibly. Ontological security was often threatened during the university transition given the intense experience of change combined with a separation from existing support networks, with companion animals providing one way to alleviate associated feelings of transient alienation.

Participants having access to their companion animals at university or at home felt a sense of comfort from the animals' presence and ease in connecting with new people while at university. Even those who lived apart felt an improved connection with their family members and friends at home due to increased interaction in order to receive updates about or to interact with their companion animals either face-to-face or via video calls and shared media. Previous research highlighted better academic outcomes for students perceiving reliable and secure support systems (Hopson et al., 2014). This study demonstrated the possible role of companion animals as primary sources of support and social conduits while encouraging new interactions and improving existing relationships in university settings (Wood et al., 2015). Companion animals also conferred secondary support by encouraging interaction with other supportive relationships and providing bridging links to support networks both on campus and in home

environments, which directly challenged feelings of loneliness and a perceived pressure to be independent while at university.

Participants not living with their companion animals at the university felt that their presence may have contributed to a sense of comfort and unconditional love (Walsh, 2009) and increased happiness (Picard, 2015), provided support during stressful times such as exams or intensive study periods (Adamle et al., 2009), and encouraged routine and better self-care (McConnell et al., 2011). Such benefits, however, were not realized due to limited contact with their companion animals and limited availability of alternative options for HAI.

Despite the value attributed to companion animal interactions, the study also highlighted the barriers to caring for companion animals full-time, which centered on the experience of being an undergraduate student. These barriers included the potential for distraction from course work and independent study, the burden from additional responsibility/costs, and stress about the companion animal's welfare (Spitznagel, 2017), fear of loss (Zilcha-Mano et al., 2011), and reduced social life. Hence, participants did not always feel it was practicable to have companion animals while at university, particularly larger companion animals such as cats, dogs, or horses, which required more care.

Given the aforementioned benefits of companion animal interaction but the challenges associated with full-time ownership, participants described a range of alternative ways in which universities could promote HAI to support student well-being. These suggestions included more regular and frequent therapy/support dog visitations, increased presence on campus—in classrooms and in university halls—animal-themed cafés, and shelter visits. Previous implementations of AAI or formalized HAI for students have demonstrated reduced stress levels (Wood et al., 2018), improvements to the experience of homesickness and life satisfaction (Binfet, 2017; Binfet & Passmore, 2016), improved well-being and mood (Grajfoner et al., 2017), enhanced classroom experience (Hergovich et al., 2002), and the facilitation of new relationships among students (Adamle et al., 2009). This study adds

to reported evidence for the beneficial effects of unformalized HAI and the possible acceptability of such interventions by students in a UK higher education setting while also suggesting alternative ways of introducing HAI in more open settings (e.g., shared ownership of smaller animals such as fish, hamsters, and guinea pigs in university accommodation or access to local animal shelters) to support student well-being.

Strengths and Limitations

The present study draws strength from the in-depth nature of interviews and highlighted HAI as an untapped resource by providing unique insight into how students' well-being may benefit from such relationships during the university transition. Possible means of implementing and increasing access to HAI in universities in both formal and open settings were also identified. Given the benefits that students report from interactions with animals, there is need for further in-depth and high-quality research to build on these findings and develop and evaluate optimal interventions to more fully understand the benefits of HAI in higher education settings.

Recruitment of participants used convenience sampling, and this self-selection may have resulted in the inclusion of participants more likely to hold positive views regarding animals in general. While negative aspects were prominent in the study, further studies are required to further assess the potential risks of HAI in higher education settings. Additionally, data was only collected from undergraduate students and in order to fully understand the potential implementation of such interventions in UK higher education contexts, research needs to be conducted with university staff and other key stakeholders.

Conclusion

Human-animal interaction is a potentially untapped well-being resource that could be used to support students during the transition to university and manage mental health stressors such as feelings of transient loneliness and a felt pressure to be independent. While full-time companion animal ownership is unlikely

to be practicable for most students, especially those living on campus, there can be alternative ways to promote human-animal interaction in both open and closed settings. The present study provides evidence for the beneficial outcomes of unformalized HAI and student acceptability of such interventions in the context of a UK higher education setting. It also provides suggestions for the introduction and incorporation of HAI in relatively open settings (such as communal care and ownership of smaller companion animals—fish, hamsters, and guinea pigs—in university accommodations or access to local animal shelters) for supporting student well-being. Further in-depth investigation will shed more light on introducing and successfully implementing HAI in educational settings.

Summary for Practitioners

The present study aimed to explore the meaning and well-being roles attributed to HAI by students transitioning to university. A sample of 60 participants took part in the study and out of these, 39 implicated the role of animals in relation to their well-being and were included in the current analysis. The study utilized the phases as highlighted by Braun and Clarke (2006) in order to conduct an inductive thematic analysis. Most participants' contact with animals predominantly occurred through companion animal relationships, with the majority reporting one companion animal ownership (29/39), with dogs being most commonly owned, followed by cats (see Table 1). Due to restrictions or lack of access, participants (32/39) didn't live with their companion animals; however, one participant had access due to living at home. Two participants reported the presence of a campus cat and a stray cat that frequented university accommodation with no other instances of presence of companion animals reported on campus. No participant took part in formalized interactions with animals while at university.

The present study yielded several significant themes: the relevance of companion animal separation during university transition, tangible and symbolic support

from companion animals in transitioning to university life, barriers to living with a companion animal while on campus, and the value of and suggestions for increasing HAI for undergraduate students. For several participants, the absence of companion animals as part of transitioning to university life resulted in feelings of loneliness and boredom, and difficulty in managing stress and maintaining routine as they missed their animals' comforting and constant presence as well as the shared activities such as going on walks, playing at home, or just sitting together. Students who had access to companion animals at university or at home felt comforted by their presence and found it relatively easier to connect with new people at university. Participants living away from their companion animals reported enhanced connection with their family members and friends due to increase in interaction for the sake of requesting updates regarding companion animals either through face-to-face interaction or via video calls and shared media. They also felt that the presence of companion animals at university may have contributed to several benefits such as increased sense of happiness (Picard, 2015), unconditional love and a sense of comfort (Walsh, 2009), support during stressful times such as exams (Adamle et al., 2009), enhanced routine management, and improved self-care (McConnell et al., 2011). Certain barriers were also highlighted that centered on the experience of being an undergraduate student. Some participants felt that the presence of companion animals on campus might interfere with their course work and study by being a distraction. It might also lead to feeling burdened from additional responsibilities and financial costs, stressing about the animals' welfare (Spitznagel, 2017), fearing the loss of their companion animals (Zilcha-Mano et al., 2011), and reduced social interactions. However, many participants highlighted a range of alternative ways in which universities could incorporate and promote HAI on campus to support student well-being such as incorporating more regular and frequent therapy/support dog visitations, increasing the presence of companion animals on campus in classrooms and in university halls, introducing animal-themed cafes, and offering shelter visits.

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