People and Animals: The International Journal of Research and Practice

Volume 4 | Issue 1 Article 6

2021

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People and Animals: The International Journal of Research and Practice

Volume 4 | Issue 1 | ISSN: 2575-9078 (2021)

An Exploratory Analysis of Virtual Delivery Alternatives for University-Based Animal Assisted Activities During COVID-19

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Keywords: animal-assisted activity, postsecondary, mental health, virtual, collaborative, programming

Abstract: Animal-assisted activities (AAAs) are being offered progressively in universities to support students' well-being. However, with the recent health restrictions due to COVID-19, all classes and health services are being delivered remotely. Due to this, many postsecondary institutions have put a temporary pause on AAAs. Most recently, there has been a growing interest and rise in virtual AAAs being facilitated at universities in North America, which vary in duration, group size, and other organizational elements. Furthermore, prior to the pandemic there was also an interest in collaborative events that sought to combine multiple activities with AAAs. Due to the nature of virtual events, virtual AAAs may require a collaborative component to increase student engagement which should be explored further to determine students' interest and input into their design. This study surveyed university students at a North American campus, Simon Fraser University, to determine students' interests and gather input into the design of virtual and collaborative AAAs. It also compared and contrasted the responses of students who have, and have not, participated in AAAs prior to the survey, as well as evaluated students' experience with virtual AAAs. Students were also asked about their motivations and barriers to in-person AAAs to understand how remote AAAs can address them and use the information gained in their design. Findings suggest students are not interested in virtual AAAs but they did show high interest in collaborative AAAs. Many students showed lack of interest in virtual AAAs due to uncertainty of what virtual AAAs would be like. There were also a variety of motivations and barriers reported by students that may only be applicable to in-person events. Students who have, and have not, participated in AAAs provided similar results. Future research is recommended to pilot a virtual AAA program and evaluate students' satisfaction afterward to see if remote AAAs should be continued once in-person classes return.

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Introduction

Mental health challenges and symptoms of distress, such as feeling anxious, having difficulty concentrating, emotional fluctuations, insomnia, and elevated stress are common issues experienced by many postsecondary students (Burris et al., 2009; Conley et al., 2015; Eskin, 2016). Various factors, such as financial burden, loneliness, and academic challenges, all contribute to these mental health challenges for university students (Brougham et al., 2009). Research shows that students who experience distress are more likely to suffer academic impairment (Hunt et al., 2010; Keyes et al., 2012). Unfortunately, the situation has only worsened due to the stresses of the COVID-19 pandemic, with more students displaying symptoms of anxiety and worsened preexisting mental health conditions (Cao et al., 2020; YoungMinds, 2020).

The beneficial effects of animal-assisted activities (AAAs) for postsecondary students have been documented in numerous studies. Adamle et al. (2009) found that first-year university students could benefit from interacting with therapy dogs as that can help build social connections and temporarily fill the gap of missing support systems. Additionally, Barker et al. (2016) discovered that therapy dog sessions can lower stress in postsecondary students who are in their final examination period. Similarly, Wood et al. (2018) found reduced blood pressure and anxiety levels in university students after attending a therapy dog session. At Simon Fraser University (SFU), AAAs are drop-in events that any students can attend and typically occur for a few days around examination periods. Each session includes one certified therapy dog, provided by St. John's Ambulance, for four to six students. Students are allowed to stay and interact with the dog for around 10 minutes to ensure as many students are able to interact with the therapy animals as possible. AAAs at SFU have evolved in recent years to combine several activities at once, such as food and drinks for animal cafes, and collaborative animal-exercise programs like animal yoga (Ip, 2017). These events aim to target a wider audience of students and allow students to do multiple activities at once, such as eating or exercising while interacting with therapy animals. However, with the current health restrictions due to COVID-19, there has been a temporary pause on in-person AAAs.

The COVID-19 pandemic has caused a widespread shift in health services delivery from in-person to virtual platforms (Anthony Jnr, 2020; Haque, 2021; Knierim et al., 2021). Due to its convenience and cost-effectiveness, some experts suggest virtual platforms should be used after the pandemic (Knierim et al., 2021; Zulman & Verghese, 2021). Virtual events that incorporate therapy animals have been hosted by several health and postsecondary institutions in North America (Lakehead University, 2020; University of Minnesota, n.d.; University of Ottawa, 2020; "St. John Ambulance," 2021; Temple University, 2020). Unfortunately, there is still a significant lack of understanding and research surrounding university students' interest in virtual AAAs and their efficacy. In this study, we surveyed current university students at SFU with the goal of identifying students' motivations and beliefs concerning AAAs. Our primary objective was to collect suggestions for the design of future virtual AAAs. Our second objective was to gain insight into students' perspectives on animal collaborative events, examine their feasibility, and gauge students' interest.

Methods

Ethical Review Process

An ethics review was not required for this study because it received an REB review exemption due to the fact that the study was a quality assurance improvement/program evaluation of existing AAAs that have occurred in the past at SFU. All participants voluntarily completed the survey and had the option of exiting the survey at any time during the process. All participants' identities were kept confidential by removing identifiers and assigning a unique identifier to each survey received. There was no perceived risk to participants.

Study Procedures

From September to October 2020, an online survey was disseminated through the email and social media platforms (Facebook, Instagram, Discord, and Twitter accounts) of 114 campus groups, student clubs, and student unions. Participants were provided a small incentive (the chance to win one of four $10 Starbucks or McDonald's gift cards) for survey completion. The survey included questions about students' motivations and barriers to AAAs, as well as questions to evaluate students' interest in the possibility of future virtual and collaborative AAAs. In total, 379 valid responses were received. Alumni or nonstudents (e.g., faculty, staff) were excluded from the study.

Data Analysis

Descriptive analysis was performed on all variables and consisted of frequency counts, means, and standard deviations for quantitative variables. Demographics are broken down and displayed in Table 3 in the appendix. Responses to open-ended questions were reviewed and categorized by common themes. Some respondents reported multiple themes within their answer or skipped certain questions, creating a variety of sample bases for different questions. Two-step cluster analysis was also conducted to investigate trends related to the research objectives. Only significant results ($p < .05$) are reported. All statistical analysis was conducted using IBM SPSS Statistics (V.26).

Results

Findings are classified in accordance with the four main categories of the questions that were asked of students: Motivations, Barriers, Collaborative Events, and Virtual AAAs.

Motivations

Students were asked what their motivations are, or would be, for attending in-person AAAs. Cramer's V correlation was conducted for those who had, and had not, participated and was found to be statistically significant (V = 0.710; $p = <.001$). Table 1 shows the distribution of all responses received from students concerning their motivation to attend AAAs. The majority of students reported that they went to manage their anxiety and to relax (37%; $n = 161$) and were motivated by the mental health effect of AAAs (24%; $n = 104$). Students also reported that they attended for the pleasure that comes from seeing animals (21%; $n = 90$), wanted to take a study break (6%; $n = 27$), and wanted to hang out with friends (4%; $n = 18$). An interesting theme that came up was that some students reported coming to the events to help the animals (2%; $n = 8$), although this may be in reference to specific AAAs where tickets needed to be purchased as proceeds were donated to animal charities. A few students went out of nostalgia for their own pets (1%; $n = 6$) and simply because the location of AAAs on campus made it convenient to drop by (1%; $n = 6$). Other responses that were mentioned were curiosity about the event, desire to feel included, and desire to find companionship at the events.

Barriers

Participants who had previously attended AAAs were asked what areas for improvements could be identified, or what reasons, if any, they had to be dissatisfied with AAAs. Five themes arose from the 137 responses collected: long wait time (42%; $n = 57$), schedule conflict (22%; $n = 30$), dissatisfaction with sessions being too short (18%; $n = 25$), overcrowding (8%; $n = 11$), and with the organization of the events (6%; $n = 8$). Specifically, participants reported dissatisfaction with the current organization of AAAs due to poor marketing, campus location, insufficient number of pets, dissatisfaction with the type of animals offered, and poor accessibility to events. Other responses (4%; $n = 6$) that were mentioned were rude experiences with the event facilitators, unwillingness to attend without friends (1%; $n = 1$), anxiety from animals (1%; $n = 1$), and disbelief that AAAs have

Table 1 Motivation to Attend In-Person AAAs for Students Who Have, and Have Not, Attended

	Total (*n* = 430)	Yes (*n* = 289)	No (*n* = 141)	Quotes
Relax/ de-stress	161 (37%)	98 (34%)	63 (45%)	*"Just very soothing and a good way to relieve stress."*
Mental health effect	104 (24%)	73 (25%)	31 (22%)	*"Animals provide an unconditional form of companionship and intimacy, even if in small interactions, that can help relieve stress from the demands of social and professional interactions."* *"After lots of studying and exams, seeing some furry friends helps with some short-term stress relieving. I feel less burnt out and able to continue with the rest of the semester."*
See/play with animals	90 (21%)	61 (21%)	29 (21%)	*"I don't have pets at home so pet therapy events are a great way for me to get to interact with pets which I normally can't."*
Break from school	27 (6%)	18 (6%)	9 (6%)	*"Being around animals and getting my mind off of life and the world for a few moments."*
Socialize with friends	18 (4%)	13 (4%)	5 (4%)	*"My group of friends love dogs so when there is dog therapy we all reunite between classes to hangout with the dogs. It's a fun time and a good way to meet some cute dogs."*
To give back/ help the animals	8 (2%)	6 (2%)	2 (1%)	*"Love of animals and the fact it is good for the health and also good for the animals to have company."*
Convenience	6 (1%)	5 (2%)	1 (1%)	*"I like animals and it was convenient for me as it was held at school."*
Nostalgia	6 (1%)	5 (2%)	1 (1%)	*"I absolutely love animals and I started going to animal therapy when I was living out of province and was separated from my own animals and family."*
Other	10 (2%)	10 (3%)	0 (0%)	*"To see what it is like."*

a mental health benefit. Table 2 summarizes the reasons for students' dissatisfaction with in-person AAAs from all responses collected.

Collaborative AAAs

Participants were asked to express their interest with various collaborations, specifically animal cafe, animal yoga, animal meditation, animals and arts and crafts, animal walks, and animals and games. Students were able to express interest in more than one of the collaborative event suggestions. Within the survey, collaborative AAAs were defined as events that are *expanding partnerships and collaborations with other resources available on campus*. Overall, the majority were interested in all of the collaboration suggestions

Table 2 Students' Reasons for Dissatisfaction with In-Person AAAs

	Total (n = 137)	Quotes
Long wait time	**57 (42%)**	*"Have them more regularly so everyone gets a chance to meet them without the long line ups."*
Schedule conflict/not enough time slots	**30 (22%)**	*"I would suggest to increase frequency in order to boost availability and ensure that wait time is not too long."*
Sessions are too short	**25 (18%)**	*"There was pressure to move along quickly because the lines can be very long. It was more of an unspoken pressure to not take up too much time with the animals because other students were waiting."*
Too crowded	**11 (8%)**	*"It was very crowded and thus affected noise levels in the campus."*
Dissatisfaction with the organization of the event	**8 (6%)**	*"More frequent events and better advertising! I have missed events in the past because I didn't hear about them until after or I had class during them."*
Other	**6 (4%)**	*"They are awkward to attend if you do not have anybody to accompanying you."*

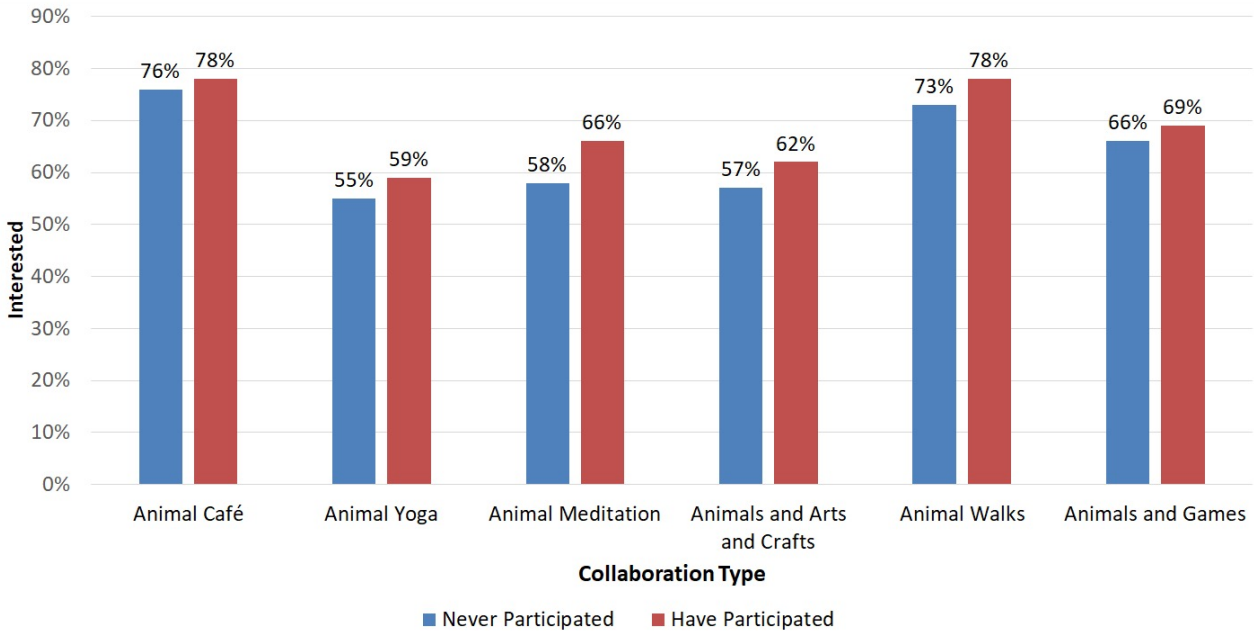

Figure 1. Animal collaboration event interest among students who have, and have not, participated in in-person AAAs.

provided (Figure 1) with 78% (n = 181) showing interest in animal cafes, 59% (n = 136) in animal yoga, 66% (n = 152) in animal meditation, 62% (n = 160) in animals and arts and crafts, and 69% (n = 160) in animals and games. When participants were asked if they had any additional ideas for animal collaboration events, the most common suggestions were to implement educational events on how to train/care for animals (n = 5), have social events such as watching movies with animals (n = 3), and have sports events with animals (n = 1). Other suggestions were incorporating animals in counseling appointments (n = 2), reading with animals (n = 2), going to a park with animals (n = 2), studying with animals (n = 2),

napping with animals (n = 2), and taking photos with animals (n = 1).

Virtual Offering

To encompass the transition to virtual learning for university campuses, participants were asked about virtual platforms of delivery for AAAs. The majority of participants said they had never attended a virtual AAA before (94%; n = 216). Only 6% (n = 13) reported having previous experiences attending a virtual AAA. When participants were asked about their interest in virtual AAAs, 65% (n = 149) of participants did not show interest, while 35% (n = 80) of participants did. No difference was found between those who had, and had not, participated in AAAs before (Figure 2).

Of those who showed interest in virtual AAAs, the majority (68%; n = 91) preferred Facebook or Instagram Live, followed by Zoom (27%; n = 36), and a few students had no preference (Figure 3). Additionally, students suggested making virtual events more engaging, which could include live-streaming animals doing tricks or playing, offering online booking systems for appointments with pets, doing interactive games or yoga with pets, and having giveaways and informative sessions to learn more about animals. For live-streaming animal tricks or plays, one student mentioned that being able to watch animals in the background while doing work could be ideal since they would not be bothered by the loud music that online animal videos often have. Another student indicated that they would support implementing virtual interactive animal games or yoga since students would be able to tune in through a webcam from the comfort of their home and relax.

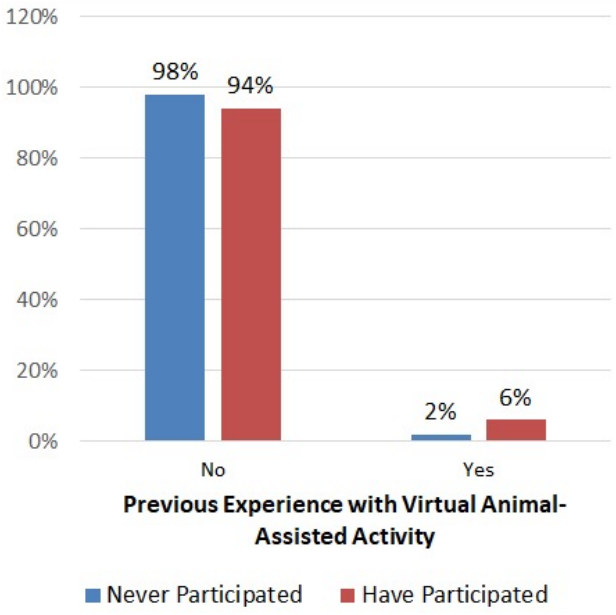

Figure 2. Students' previous experience with virtual AAAs.

Discussion

Overall, our study suggests that students saw less value in virtual AAAs, although this may be due to unfamiliarity with these types of sessions at the time the survey responses were collected. Students did express high interest with suggested collaborative AAAs. They also provided suggestions for other collaborative AAAs that could be easily conducted over virtual platforms. Surprisingly, students preferred Facebook or Instagram Live over Zoom. Students also suggested a series of other teleconference and live-streaming platforms. The motivations and barriers for in-person AAAs provided by the study participants offer potential opportunities for ways to improve virtual AAAs. However, many of the motivations students provided as their reason to attend in-person AAAs were not applicable to virtual AAAs.

Since the COVID-19 pandemic, several universities in North America have started piloting virtual AAAs. For example, Simon Fraser University hosted "Bring Your Pets to Zoom" and "Pets and Yoga" events where students were able to join teleconferencing calls and see other students' pets, regardless if they were themselves pet owners. Similarly, Thompson River University hosted "Virtual Therapy Dog Thursdays" through collaboration with St. John Ambulance Therapy Dog Program (Thompson Rivers University, 2020). Since the study occurred near the beginning of the COVID-19 pandemic, future studies may want to reexamine current students' interest in virtual AAAs as the offerings may have changed or become more sophisticated. Students may have

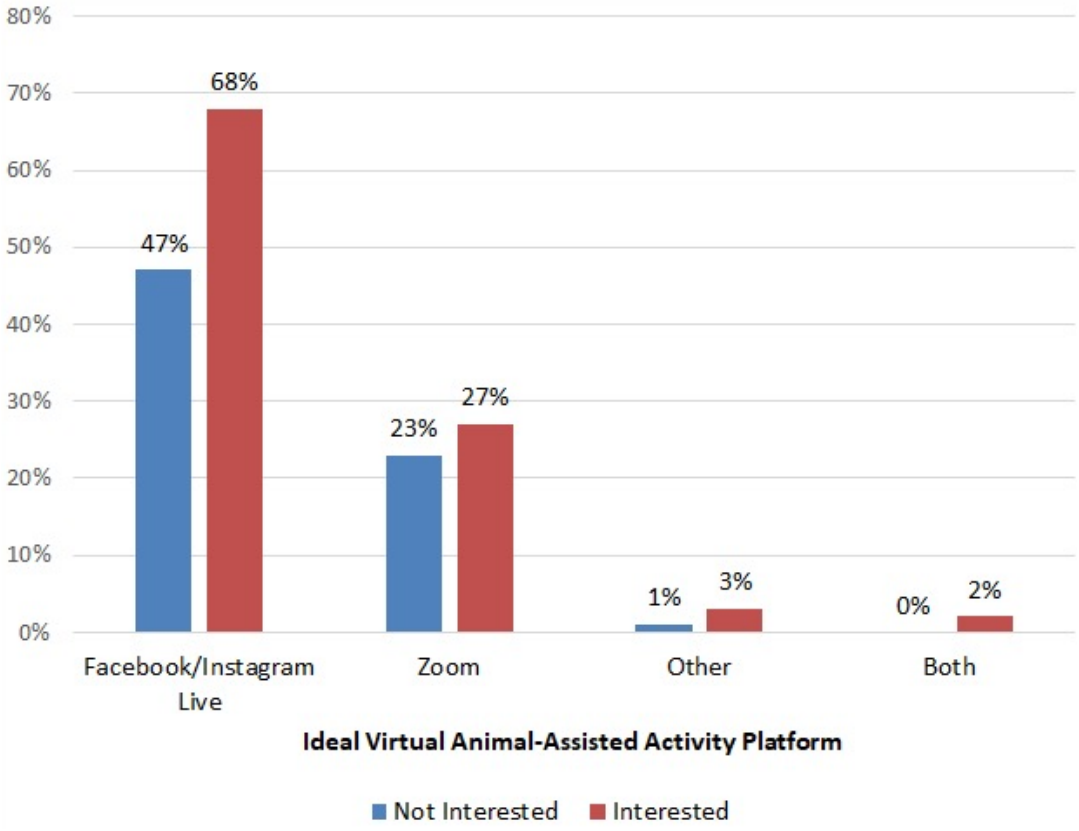

Figure 3. Preferred virtual platform for those who are, and are not, interested in virtual AAAs.

also become more familiar with teleconferencing platforms and virtual activities as the pandemic proceeded, which may also change their responses regarding virtual AAAs.

Students' lack of interest in virtual AAAs may also be attributed to Zoom fatigue (nonverbal overload from students spending countless hours on online communication platforms for school and other various activities as per Bailenson, 2021). In addition, some students reported that they had attended AAAs for reasons that may only be applicable to in-person events, such as convenience, break from school, and socialization. For example, with virtual learning, students are able to socialize through other methods and take breaks from schoolwork that do not involve additional screen time. Additionally, tactile components of AAAs (e.g., petting the animal) are components that are not easily translated to virtual platforms. However, virtual AAAs could remedy many of the reasons that students are dissatisfied with in-person AAAs, such as long wait times, overcrowding, and lack of accessibility. Future studies should look at the effectiveness and students' satisfaction of attending virtual AAAs.

Collaborative events combine animals with an activity which may be a method for providing self-care and social connection to students, with the added benefits of AAAs. Students in our study expressed high satisfaction rates with all of the suggested animal collaborative events and provided many different suggestions for other collaborative events as well as other ways to provide AAAs remotely. As students often juggle numerous time commitments, collaborative events may be an attractive idea because they are able to combine multiple activities at once. Since this study only evaluated perspectives and interest, future studies may wish to examine the effectiveness and feasibility of running these events.

Strengths and Limitations

A notable strength of this study was that it reached out to several prominent campus groups to ensure a representative sample of marginalized populations. However, since the survey was disseminated and promoted primarily through online platforms using emails, newsletters, and social media for one university campus in Canada, BC, the sample may not be representative of students in other geographical areas. The survey also used behavioral intention measures and self-report measures. Future studies should be conducted when in-person events resume to ensure the validity and long-term impact of the results.

Conflicts of Interest

The authors state that there are no conflicts of interest.

Summary for Practitioners

Particularly in recent years, animal-assisted activities (AAAs) have been delivered in postsecondary institutions to allow students to cope with various mental health challenges and symptoms of distress such as experiencing insomnia, elevated stress, and difficulty concentrating. Fortunately, the beneficial effects of AAAs for students have been documented in numerous studies, although due to the COVID-19 pandemic, which has prevented various services from being offered in person, numerous universities that provided AAAs have put a temporary pause on them. To continue to provide an outlet for students to de-stress, virtual AAAs have been implemented by several North American universities with varying session duration, group size, and other organizational elements. Furthermore, AAAs that are in collaboration with other organizations and activities have been gradually gaining interest prior to the pandemic. Due to the nature of virtual events, virtual AAAs may require a collaborative component to increase student engagement, which should be explored further to determine students' interest and input into their design.

Methods

SFU students were surveyed between September to October 2020 to identify students' tastes and gather input into the design of virtual and collaborative AAAs. The survey also compared and contrasted the responses of students who have, and have not, participated in AAAs, as well as evaluated students' experience with virtual AAAs. Students were also asked about their motivations and barriers to in-person AAAs to understand how remote AAAs can address them and use the information gained in their design. Descriptive analysis was performed on all variables and consisted of frequency counts, means, and standard deviations for quantitative variables. Qualitative responses were reviewed and categorized by common themes. Further, trends related to the research objectives were investigated through a two-step cluster analysis. All statistical analysis was conducted using IBM SPSS Statistics (V.26).

Results

Motivations

Cramer's V correlation was conducted for those who had, and had not, participated and was found to be statistically significant ($V = 0.710$; $p = < .001$) in terms of motivation for attending in-person AAAs. Students reported that they went to manage their anxiety and to relax (37%; $n = 161$), were motivated by the mental health effect of AAAs (24%; $n = 104$), attended for the pleasure that comes from seeing animals (21%; $n = 90$), wanted to take a study break (6%; $n = 27$), and wanted to hang out with friends (4%; $n = 18$). Other responses that were mentioned were convenience, nostalgia for their own pets, to help the animals, curiosity about the event, desire to feel included, and desire to find companionship at the events.

Barriers

Participants who had previously attended AAAs were asked what areas for improvements could be identified, or what reasons, if any, they had to be dissatisfied with AAAs. Five themes arose from the 137 responses collected: long wait time (42%; $n = 57$), schedule conflict (22%; $n = 30$), dissatisfaction with sessions being too short (18%; $n = 25$), overcrowding (8%; $n = 11$) and dissatisfaction with the organization of the events (6%; $n = 8$). Other responses (4%; $n = 6$) that were mentioned were rude experiences with the event facilitators, unwillingness to attend without friends (1%; $n = 1$), anxiety from animals (1%; $n = 1$), and disbelief that AAAs have a mental health benefit.

Collaborative AAAs

Overall, the majority of students were interested in all of the collaboration suggestions provided with 78% ($n = 181$) showing interest in animal cafes, 59% ($n = 136$) in animal yoga, 66% ($n = 152$) in animal meditation, 62% ($n = 160$) in animals and arts and crafts, and 69% ($n = 160$) in animals and games. When participants were asked if they had any additional ideas for animal collaboration events, the most common suggestions were to implement educational events on how to train/care for animals ($n = 5$), social events such as watching movies with animals ($n = 3$), incorporating animals in counseling appointments ($n = 2$), reading with animals ($n = 2$), going to a park with animals ($n = 2$), studying with animals ($n = 2$), napping with animals ($n = 2$), taking photos with animals ($n = 1$), and having sports events with animals ($n = 1$).

Virtual Offering

The majority of participants said they had never attended a virtual AAA before (94%; $n = 216$). Only 6% ($n = 13$) reported having previous experiences attending a virtual AAA. When participants were asked about their interest in virtual AAAs, 65% ($n = 149$) of participants did not show interest, while 35% ($n = 80$) of participants did. No difference was found between those who had, and had not, participated in AAAs before. Of those who showed interest in virtual AAAs, the majority (68%; $n = 91$) preferred Facebook or Instagram Live, followed by Zoom (27%; $n = 36$), and a few students had no preference.

Discussion

Overall, our study suggests that students saw less value in virtual AAAs, although this may be due to unfamiliarity with these types of sessions at the time the survey responses were collected and Zoom fatigue. Virtual AAAs may remedy the barriers that students faced for in-person sessions, and students did express interest in virtual platforms like Facebook and/or Instagram Live. Students did express high interest in suggested collaborative AAAs (events that combine animals with another activity). Students in our study expressed high satisfaction rates with all of the suggested animal collaborative events and provided many different suggestions for other collaborative events as well as other ways to provide AAAs remotely.

Future Directions

Since the study occurred near the beginning of the COVID-19 pandemic, future studies may want to reexamine current students' interest in virtual AAAs as the offerings may have changed or become more sophisticated. Students may have also become more familiar with teleconferencing platforms and virtual activities as the pandemic proceeded, which may also change their responses regarding virtual AAAs. Additionally, since this study only evaluated perspectives and interest in collaborative events, future studies may wish to examine the effectiveness and feasibility of running them.

Appendix

Table 3 Demographics for Students Who Have Participated and Not Participated in Animal-Assisted Events

	n (%)	Yes	No
Demographics			
Gender			
Men	44 (13.6%)	19	25
Women	268 (82.7%)	170	97
Other (nonbinary)	12 (3.7%)	9	3
Year of Study			
1	47 (14.5%)	8	39
2	53 (16.4%)	40	13
3	77 (23.8%)	47	29
4	78 (24.1%)	58	20
5+	53 (16.4%)	34	19
Graduate	16 (4.9%)	11	5
Faculty			
Arts and Social Sciences	106 (33.1%)	66	40
Health Sciences	64 (19.8%)	43	21
Applied Sciences	20 (6.2%)	13	7
Beedie School of Business	33 (10.2%)	17	16
Sciences	56 (17.3%)	32	24
Education	15 (4.6%)	11	4
Communications, Arts, and Technology	24 (7.4%)	15	9
Undecided/unsure	4 (1.2%)	1	3
Living Situation			
Living in a family home	243 (76%)	153	90
Living on own	47 (14.6%)	27	20
Living with roommate/partner	6 (1.9%)	1	5
Living on campus	4 (1.2%)	2	2
International student	20 (6.2%)	13	7
Pet owner			
Never	99 (30.7%)	58	41
Yes, previously	73 (22.9%)	47	26
Yes, now	150 (46.4%)	93	57
Ethnicity			
Asian/Pacific Islander	187	116	71
Black	2	0	2
Caucasian	123	78	44
Hispanic	2	2	0
Indigenous	3	0	3
Mixed	5	2	3
Middle Eastern	8	6	2

Acknowledgments

We would like to thank SFU Health and Counselling services for collaborating with us in the design and piloting of this survey, as well as supporting our previous research endeavours.

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