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“We’re still seeing people on the screen, we still keeping our bodies moving”: exploring the transition from face to face to online dance classes for community-dwelling older adults during the COVID-19 pandemic

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ABSTRACT

Background: The COVID-19 outbreak meant that people were unable to attend art-based community classes such as dance. In response, activities transitioned to digital modes of delivery. In this study, we aimed to explore the feasibility, inclusivity, and impact of transitioning to an online dance class.

Methods: Thirty community-dwelling older adults (59–84 years old) were recruited from community groups in Yorkshire (UK). Participants completed an online survey at baseline and after attending 8 weeks of online dance classes. The survey captured perceived benefits on physical activity and mental wellbeing. Two separate focus groups ($N=12$) were conducted to explore if the online dance transition could be an opportunity to keep this group active and socially connected.

Results: Survey data revealed no significant difference in the amount of time engaged in physical activity, but mental wellbeing significantly improved. Themes from the focus groups included holistic wellbeing related to the experience of dance, inclusive participation of online dance, and online dance facilitating social connection and sense of belonging.

Conclusions: The research provided insight into the online transition of a dance class for older adults, especially regarding inclusivity, sense of belonging and social connection.

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KEYWORDS

Digital; exercise; art-based; inclusivity; holistic wellbeing

Background

In 2019, a report from the World Health Organisation outlined the beneficial effect of engaging in arts-based activities on healthy ageing (Fancourt & Finn, 2019) providing a growing body of evidence on the positive effect of participating in art-based activities on physical, mental, and social health outcomes in older adults (Curtis et al., 2018; Fancourt & Finn, 2019; Fraser et al., 2015). However, delivery of art-based activities were interrupted due to the COVID-19 pandemic when on 20 March 2020, the UK government urged the public to stay home where possible, self-isolate if suffering symptoms or exposure to

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COVID-19, and to observe social distancing in public (Public Health England, 2020). On 6 January 2021, the third UK national lockdown was declared. Public health rules at that time demanded that people in England refrain from leaving their homes except for limited reasons (work, volunteering, essential activities, to provide care, medical reasons, exercise limited to once a day at most). This led to social isolation for many older adults, resulting in negative consequences, such as reduced leisure physical activity, increased feeling of loneliness (Tomaz et al., 2021), and ultimately higher experiences of stress (Ellwardt & Präg, 2021).

Consequently, an increasing need to support older adults to be physically and socially active was evident. With this population unable to attend art-based community classes previously delivered in person, a rapid rise in demand for online activities occurred (Bradbury et al., 2021). In response, community services and art-based activities quickly transitioned to digital modes of activity. This left open the question whether arts-based activities continued to support physical activity, connectivity, and social needs of older adults during the pandemic.

Pre-pandemic, among the range of art-based activities, previous evidence showed that dance is an appropriate form of physical activity in older adults (Keogh et al., 2009). It integrates a natural expression of body's movement with physical, cognitive, and social elements with reduced need of equipment and the possibility of culturally tailored and inclusive approaches (Hwang & Braun, 2015). Dancing in groups with similar interests and goals can reduce social isolation and improve social satisfaction by connecting like-minded individuals (Carapellotti et al., 2020). Indeed, many dance interventions report high levels of attendance and commitment (Britten et al., 2017; Ni Bhriain & Clifford, 2022) with evidence supporting the idea that this form of art-based activity allows people to meet their social needs of belonging and interaction within a community (Keogh et al., 2009). "Dance On" is a well-established art-based dance programme delivered in community spaces and has already shown efficacy in increasing the engagement of older adults in physical activity (Britten et al., 2023), with high rates of attendance and improvements in self-rated health status (Britten et al., 2023).

"Dance On" in-person sessions started in January 2019 in community centres across the Yorkshire area. Each session included a range of genres of dance (contemporary, ballroom, salsa, and ballet) to include balance, strengthening, low impact aerobics, and multi-directional movements. The dance session was flexible and could be adapted by the instructor to allow the participants to feel included based on their requirements and feelings. In person "Dance On" Sessions stopped on 20 March 2020 as the COVID-19 pandemic was declared. Further restrictions, in addition to the second and third lockdowns, and the fact that older adults were noted as "vulnerable" resulted in no in-person sessions being run until the third lockdown was lifted in July 2021, when they resumed in outdoor spaces. With the reintroduction of COVID-related public health rules, and increasing demand for online transition of art-based community programmes, we decided to move Dance On sessions online arranging classes on Zoom from 17 January 2021. Therefore, with this study we aimed to explore the feasibility, acceptability, and inclusivity of the online transition of dance classes on physical activity levels and wellbeing in older adults. We used survey questions to ascertain if and how online dancing affected physical activity and wellbeing, and adherence to the dance session to assess feasibility. To understand if online dance sessions were acceptable and inclusive, thus offering an

opportunity to keep these older adults active and socially connected during lockdown, we undertook focus groups to explore participants' views of the transition and experience of dancing online.

Research approach and methodology

Participants and study design

This study was a mixed methods study in which a cross-sectional questionnaire and focus groups were used. Participants were included if aged 55+ years, community dwelling (i.e. living independently), and taking part in "Dance On" online classes. Potential participants who had previously attended an "in person class" were invited to attend the pilot of online classes with adverts sent via emails by the stakeholders (Yorkshire Dance and Doncaster Community Arts), snowballing through personal contacts also widened the potential pool of participants. This dance programme has already been described elsewhere and the dance sessions followed the same format (e.g. Britten et al., 2023). Interested parties initially took part in 2 taster sessions which had been identified when co-creating the initial "Dance On" programme as important by older people. After these two taster sessions the research project was introduced. It was made clear to each participant that they could continue dancing even if they did not want to take part in the research. The online sessions were led by dance artists, and we use the term "artists" throughout the paper to avoid language associated with conventional dance, and due to the fact that this work is inclusive, health-focussed, and creative (Yorkshire Dance, 2023). Each dance session included 15 minutes of socialisation where participants and the artists talked to each and navigated technical issues when present. This was followed by a warm-up, the main section of the session; the dancing, with movements to encourage balance, mobility, and flexibility, which was followed by further socialisation of 15 minutes after a cool down. The sessions were adapted by the artists for all abilities, delivered via Zoom, and were performed either seated or standing, with artists always ensuring the need for an appropriate and safe space to dance without obstruction, tailoring each session for their group. Data collection took place from January 2021 to March 2021. Questionnaires were delivered online to the participants at baseline and 8 weeks after taking part in online dance classes. The study was approved by the University of Leeds Faculty of Biological Sciences Research Ethics Committee (ref: BIOSCI 19-040). All participants provided verbal and written informed consent prior to commencing the study.

Questionnaire data collection and analyses

Baseline data collection for questionnaire survey started in January 2021 and ended in March 2021 (after 8 weeks on online dance classes). Demographic data such as age, gender, marital status, self-reported health status, and ethnicity were collected only at baseline, and we then used appropriate descriptive statistics to describe the sample.

The dance artists noted attendance at each session offered and from this we calculated an adherence rate for each participant. For example, if a participant attended 6/8 sessions their adherence rate would be 75% e.g., number of sessions offered/sessions attended multiplied by 100.

Self-reported data on physical activity (light, moderate, and vigorous intensities) were also collected at baseline and at 8 weeks. Questions were adapted for the English Longitudinal Study of Ageing and included questions on the frequency of participation in vigorous (e.g. running/jogging, swimming, cycling, aerobics/gym, tennis, and digging with a spade), moderate (e.g. gardening, cleaning the car, walking at moderate pace, dancing) and light (e.g. laundry and home repairs) physical activities excluding dance online sessions. Response options were more than once per week, once per week, one to three times per month, hardly ever (Hamer et al., 2014). Physical activity patterns were then categorised into three groups: inactive (no moderate or vigorous activity on a weekly basis); moderate activity at least once a week and vigorous activity at least once a week (Hamer et al., 2009).

Enjoyment of online dance classes was rated on a Likert scale scored 1–5 (1, not at all enjoyable and 5, completely enjoyable). To capture mental wellbeing, participants were asked to complete at baseline and at 8 weeks of online dance a series of validated subjective questions from the Office for National Statistics personal wellbeing questions introduced in April 2011 (Hicks et al., 2013). The questions captured information on life satisfaction, worthwhile, happiness, and anxiety answer on a scale of 0 to 10, where 0 is “not at all” and 10 is “completely” (Office for National Statistics, 2018). To avoid participation burden and as the study was performed via online surveys, the questionnaires selected for this study were simple and short. Attendance at each session was noted to allow calculation of adherence to the programme. In addition, at the end of the 8 weeks of online sessions, participants were asked questions about their experience of the online dance. These included questions about the quality of audio and video during the sessions, satisfaction of the variety and intensity of the online dance class, and future preferences on the programme.

Changes in physical activity and wellbeing from baseline to 8 weeks post taking part in online dancing were assessed using separate Wilcoxon signed-rank test, an alpha level of 0.05 was adopted for all analysis. Changes in PA categories were assessed using Friedman test from baseline to 8 weeks post dancing. Data were analysed using IBM SPSS Statistics for Windows, version 25 (IBM Corp., Armonk, NY, USA).

Focus groups and data analysis

Two focus groups were conducted by one of the researchers (LB) with a total of 12 older adults attending online “Dance On” classes (a group of 10 older adults in the first focus group and 2 older adults in the second one). Questions were developed by dance organisations and artists (One Dance UK, Yorkshire Dance, Doncaster Community Arts), Sport and Exercise Scientists at the University of Leeds and an independent panel of community dwelling (i.e. living independently) older adults aged 60–80. Each focus group lasted 35–60 minute and was digitally recorded. The focus groups had a semi-structured approach with follow-up questions on topics of interest. Questions were developed and piloted prior to data collection. The focus group questioned (1) reasons for getting involved in online Dance On sessions (2) changes in health or wellbeing since taking part in the online sessions and (3) facilitators and barriers to participation in dance online programme. Focus groups were audio-recorded with participants’ consent. The digitally

recorded focus groups were then transcribed verbatim. Each interviewee was de-identified (using the participant ID) immediately after transcription.

Data analysis used six steps of thematic analysis. Reflexive thematic analysis was conducted using an inductive approach, with no attempt by the researchers to fit the data into an existing theory (Braun & Clarke, 2019). This method was used to allow for themes generation thanks to its theoretical flexibility to explore lived experiences of online dance activity in older adults during the COVID-19 pandemic. Excel was used to code and track themes in the qualitative data, with new themes and sub-themes being entered into additional columns, with each participant's response aligned to that column. Themes were developed by one coder (IP) and discussed with a second coder (SA). As a result of this iterative process, five themes were developed and reviewed. Potential quotes that were deemed to best represent the nature of each theme were then extracted, discussed by the authors, and a final selection of quotes produced.

Results

Participant characteristics and adherence rate

A total of 30 White British older adults initially joined online dance classes. However, 3 participants decided not to continue, and thus a total of 27 older adults completed 8 weeks of online dance classes, with a mean number of 7.5 (± 6.7) sessions attended and a mean adherence rate of $88.6 \pm 24.1\%$. The mean age of this sample was 70.7 ± 6.1 years, 26 were females and 4 were males. The majority of older adults were married or in a domestic relationship ($N = 19$) and living in an urban area ($N = 26$). A total of 11 participants were living on their own. Descriptive data relating to the sample are presented in Table 1.

Physical activity and wellbeing

No significant changes in self-reported levels of physical activity (minutes per week) between baseline and 8 weeks were found for light ($z = -1.63$, $p = 0.10$), moderate ($z = -0.25$, $p = 0.80$), or vigorous ($z = -1.63$, $p = 0.11$) intensities. At the 8 week-time point, 4 participants were classified into the inactive group, 14 participants were classified into the moderate activity group, and 9 participants were classified into the vigorous activity group, although these changes from one category of intensity of physical activity to another were non-significant ($\chi^2(2) = 0.80$, $p = 0.43$).

Figure 1 shows changes in wellbeing responses at baseline and 8 weeks. As Figure 1 indicates, satisfaction ($z = -3.21$, $p < 0.001$), happiness ($z = -1.96$, $p = 0.04$), and anxiety ($z = -2.13$, $p = 0.03$) significantly improved between baseline and 8 weeks of online dance classes. No significant differences were observed for enjoyment between baseline and 8 weeks ($z = -0.33$, $p = 0.74$).

Experiences of dance on classes delivered digitally

Twenty participants had attended in-person Dance On classes prior to the COVID-19 pandemic. Most participants reported being satisfied with the quality of audio and video during the dance sessions (completely satisfied with video quality 16 out of 27).

Table 1. Participants characteristics at baseline.

Variables	Participants (n = 30)
Age (years)	70.7 (6.1)
Gender – female (n,%)	26 (86.7)
Marital status (n,%)	
Single	11 (36.7)
Married or domestic relationship	19 (63.3)
Living status	
Live on their own	11 (36.7)
Live with one other person	16 (53.3)
Live with 2 or more people	3 (10.0)
Self-reported health status (n,%)	
No health issue	16 (53.3)
Mobility issue	5 (16.7)
Hearing and/or visual impairment	4 (13.3)
Weakened immune system	2 (6.7)
Chronic respiratory condition	2 (6.7)
Chronic neurological condition	1 (3.3)
Ethnicity – White British (n,%)	30 (100.0)
Area of living (n,%)	
Urban	26 (87.0)
Rural	4 (13.0)
Participating in Dance On classes prior to the COVID-19 pandemic -yes (n,%)	20 (66.7)
Self-reported physical activity groups (n,%)	
Inactive	4 (13.3)
Moderate activity	21 (70.0)
Vigorous activity	5 (16.7)

Options for self-reported health status were: diabetes (type 1 or 2), chronic respiratory condition (e.g. asthma, COPD, bronchitis), chronic heart disease, chronic kidney disease, chronic liver disease, chronic neurological conditions, weakened immune system, mobility issues, visual impairment, hearing impairment, none of these apply to me, I prefer not to say, other. Physical activity categories were defined as inactive (no moderate or vigorous activity on a weekly basis), moderate activity at least once a week, and vigorous activity at least once a week.

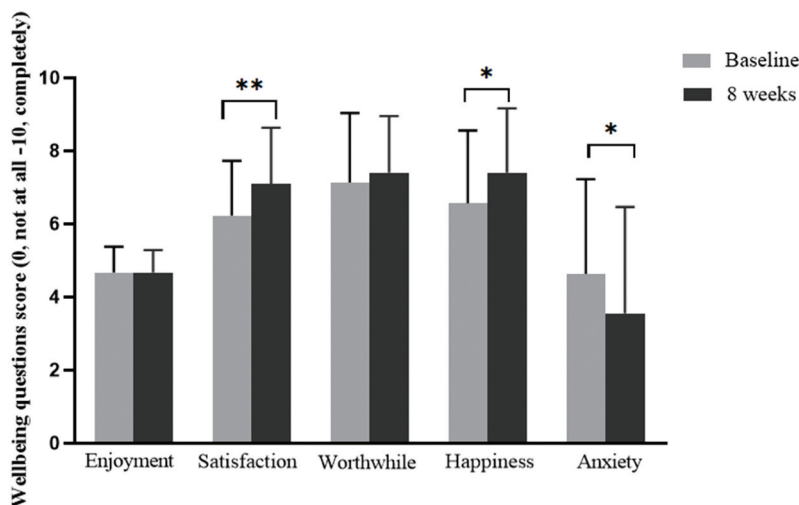


Figure 1. Median baseline and 8 weeks values from subjective questions from the office for national statistics personal wellbeing questions and enjoyment of dance online classes (* denotes significance at $p < 0.05$, ** reflects significance at $p < 0.01$).

However, scores for audio quality were lower than video quality (completely satisfied with audio 12 out of 27). Most of the participants reported being satisfied with the instructions provided during the dance sessions (20 out of 27) and felt that enough personal attention was provided during the online sessions (14 out of 27). All participants reported the willingness to continue with the online “Dance On” sessions in the future if COVID-19 regulations continue. However, 13 participants reported the preference for in-person dance classes, 6 participants preferred online classes, 5 participants expressed a preference for a mixture of online and in-person session, while 3 of the participants have not experienced in-person dance classes before.

Themes from focus groups

The three overarching themes from the analysis were: holistic wellbeing related to the experience of dance, inclusive participation of online dance classes, and online dance facilitating social connection and sense of belonging. Themes are presented and their relationships are presented in [Figure 2](#). Unless otherwise stated, all data extracts apply to participants from the two focus groups.

Holistic wellbeing related to the experience of dance

Within this main theme, two sub-themes were identified: how dance classes contributed to physical exercise needs and supported participants’ mental wellbeing. Participants stated that they began to participate in the “Dance On” online programme for the movement and exercise needs during the national lockdown, particularly after a perceived increase in body weight: *“I needed the motivation and I need to lose weight, I need to*

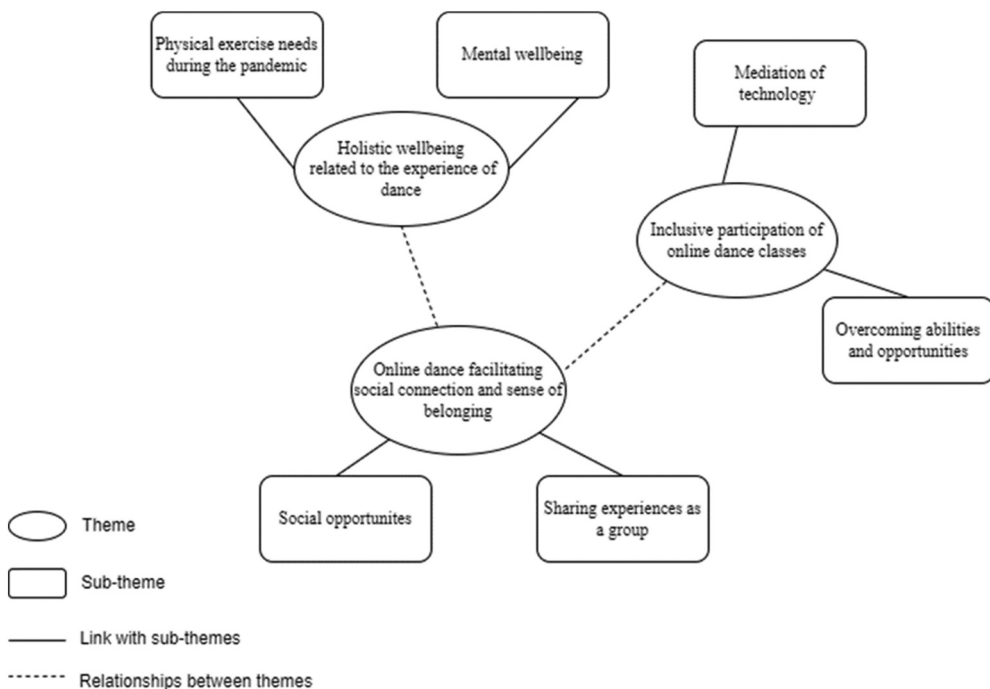


Figure 2. Themes and relationships map.

do something aerobic and moving." (Female, 69 years old). Also, the participants felt that online dance was a more effective aerobic activity than walking as it involved whole-body movements, including the lower and upper limbs: *'Moving and grooving involves more parts of the body than only walking.'* (Male, 67 years old). Participants also commented on how the music that accompanied the sessions also motivated them to move more: *'You use also your upper body with those dances, every exercise is different, and I find very much that I'm doing a lot more our movement with the song.'* (Female, 69 years old)."

Other participants highlighted how online dance classes helped their mood and emotional wellbeing, with positive feelings derived from exercising with music as beneficial to their mental health: *"It's uplifting you forget all your worries".* (Male, 72 years old). The structured appointment with online dance classes provided a routine during the pandemic crisis, promoting wellbeing in challenging times: *But I think there's something about dance in terms of my mental health definitely that just lifts me, you know I just love it so even if you know something comes on the radio, I will dance to it".* (Female, 61 years old) and *"I think it gives me a structure and so I really need to kind of structure to my week and knowing that I'm doing certain things on certain days has become very important, very important to me during lockdown."* (Female, 70 years old).

The examples above show that the online transition provided alternative opportunities for people to continue or start their participation in dance activities. These contributed to holistic wellbeing of people taking part in the online classes fostering mental and physical health in difficult times during the pandemic.

Inclusive participation of online dance classes

Participants highlighted the inclusivity of the online dance classes, regardless of mobility issues, need of travelling to the class location, and seasonality (winter times particularly hard): *"I am having to do a lot of it seated now. . . adapted for both seated and they always say if you seated do this, which is lovely you know so you're totally inclusive".* (Female, 70 years old) and *"It (doing online dance class) takes less time because it just takes the hour, whereas you go you've got to get there and get back."* (Male, 72 years old). This was particularly important during the pandemic, as some of the participants needed to shield during this time: *"I joined these online sessions at zoom I had to shield so initially we weren't allowed out at all, even for an hour to exercise a day."* (Male, 75 years old).

Accessibility to laptop and/or internet and lack of confidence in using technology were noted as concerns for participation: *"I think it's about a lack of confidence in terms of technology, but also, I know that some people just don't have the technology".* (Female, 70 years old) and *"it's a self-confidence being self-conscious thinking, oh no I can't do that (use Zoom)"* (Female, 73 years old) and *"Generally, really, as the older we get actually, the more we, we have to stay on top of the technology, whether we like it or not".* (Female, 61 years old). To overcome this limitation, participants asked for extra support to be provided and help prior to the start of the class (e.g. provide with a letter in advance with a list of items that the instructor can help with, provide instructions on how to use online platforms): *"A letter like that saying we can help you show you how to do it and I'll tell you so"* (Female, 69 years old). Also, a good practice highlighted by the participants was for the artist to check if any adaptations were needed (e.g. hearing aids and audio from the online class): *"what I really like about I think (the instructor) is a really good teacher and what I like about her is the fact that she checks our needs and I think that's you know, really, really useful"* (Female, 80

years old). The data extracts above show how the online transition allowed people to be involved in the dance activities promoting inclusivity thanks to the flexibility and convenience of the online option.

Online dance facilitating social connection and sense of belonging

Participants reported how online dance classes functioned as means of creating and maintaining social connections with others, by facilitating social opportunities during national lockdown: *"Initially, I just liked the sound of it, and when it's made so many friends there's no way that I would stop now."* (Female, 63 years old) and *"We're still seeing people on the screen we still keeping our bodies moving."* (Female, 69 years old). The online dance classes provided the opportunity for a positive and non-judgmental environment involving like-minded people brought together by the enjoyment for music and dance. Also, the online transition of dance classes provided an opportunity to share experiences within people from a similar group: *"It's good to be with people who are enjoying what you're enjoying as well."* (Male, 75 years old).

The social element that used to characterise in-person classes with meetings after a class has been replaced with Whatsapp group chats or dedicated social time on Zoom with breakout rooms: *"We always meet after as well on we do it on Whatsapp actually and we all get together and have a chat because we always used to go down to the coffee shop, ...after the zoom session now and will connect to up"* (Female, 75 years old). These examples show how the transition to an online dance activity in response to the lockdown helped participants to maintain the continuity of previous social relationships but also provided opportunities for them to create new relationships with like-minded people.

Discussion

The aim of this study was to assess the feasibility, acceptability, and inclusivity of the transition from in-person dance classes to online during the COVID pandemic. We investigated the impact of engaging in dance classes on physical activity levels and wellbeing in older adults, and explored participants' views of the online transition. We have shown that participation in an online dance programme was high with an adherence rate >88%, and thus suggesting that providing the dance session online was feasible. While no significant changes in PA were observed, participants reported a better mental wellbeing with higher levels of happiness and satisfaction at 8 weeks post-online classes than baseline (see [Figure 1](#)). The results of this study indicate that engagement in online dance classes was driven by the perceived mental health benefits, the opportunity to join an accessible routinely available online dance programme, and the social support achieved through the online group format. Thus, online dance activities can be an acceptable, inclusive, and effective approach to provide an accessible option for supporting older adults' mental health.

No significant changes in physical activity (excluding time spent in dance classes) were found after 8 weeks attending the online programme both for time spent in different physical activity intensities and for physical activity categories. However, a greater number of participants at 8 weeks post attending online dancing were classified into the vigorous activity group than at baseline. In addition, participants reported higher scores for satisfaction, happiness, and improvements in anxiety after 8 weeks of the online

programme. Our finding is in line with previous evidence supporting the idea that arts-based activities, in particular dance (Keogh et al., 2009), can provide relevant benefits to depression, quality of life, perceived stress, and mental health in the ageing population (Ronzi et al., 2018). In the context of the COVID-19 outbreak, mental wellbeing and the risk of social isolation and feeling of loneliness among older adults has become an even more urgent concern (Gorenko et al., 2021; Robb et al., 2020). Consequently, from community organisations there was a need to provide opportunities to facilitate social connectedness. Our findings support previously published evidence on online transition of art-based programmes with positive responses of how technology can facilitate engagement for older participants (Bek et al., 2022; Groot et al., 2021). Therefore, art-based programmes should consider the possibility of providing an online option to facilitate supportive activities of older adults' physical and social health.

The adherence rate for the online dance classes was high >88%, however we found some variation in the number of sessions attended by the participants (mean adherence rate of $88.6 \pm 24.1\%$). Three participants dropped out after the initial taster sessions. Qualitative data suggest actions that could help improve the delivery of online art-based activities and support remote participation. These included providing technical support and assistance in using the software and promoting socialisation. While there is evidence of an increased use and integration of online media among older adults (Lee & Coughlin, 2015), they are still more likely to have different levels of familiarity and proficiency in using online videoconferencing resources. Thus, providing technology-related support with step-by-step instructions ahead of the online activities could help overcoming technical issues (Mitzner et al., 2022).

The focus groups also highlighted the need for a dedicated time to socialise with other participants. For example, participants noted the importance of having 15 minutes before and after the online dance class to engage and socialise or the use of breakout rooms. This finding supports the idea that social interaction is particularly important due to the detrimental effects of loneliness and social isolation in older adults (Beridze et al., 2020). Indeed, previous studies suggest that incorporating socialisation in online-based programmes could help increase adherence (Tallner et al., 2016). In addition, in previous studies, older adults reported the efficacy of in-person dance programmes could be due to the social aspects of attending and how it builds community (Britten et al., 2017), suggesting that socialisation is a relevant reason for participating in community-based programs (Pardasani, 2010). Our finding is in line with recent guidelines for delivering group exercise programmes via videoconferencing (Mitzner et al., 2022) that this paper also proposed the inclusion of built-in time for social interaction with guided discussion. Therefore, future online art-based activities should include and balance instruction with dedicated time to socially interact pre and/or post the class.

The participants noted a perceived increase in body weight and motivation to move as reasons to take part in the online dance classes. This finding is in contrast with previous studies on the relationship between exercise and body-shape perception in older adults (Schuler et al., 2004). Indeed, previous evidence reported improvements in physical health and in physical ability as the most powerful exercise motivations in older adults (Schuler et al., 2004). This could be explained by the perceived negative consequences of physical inactivity previously reported by older adults in a recent qualitative study (Stehr et al., 2021), ranging from a loss in mobility to gain in body weight (Stehr et al., 2021). Therefore,

increases in body weight seem to be perceived as a negative consequence of physical inactivity rather than a motivator to exercise. In addition, from the focus groups, participants reported preferences for aerobic activities and movement with music. Previous evidence showed that movements with music improves the exercise experience by lessening the perceptions of difficulty, monotony, and discomforts associated with exercise (Schutzer et al., 2004). Particularly, dance has been reported as an enjoyable activity for older adults (Demers & McKinley, 2015). Consequently, future interventions aiming to increase physical activity levels and engagement in physical activity programmes in older adult populations should consider these aspects.

During the focus groups, participants reported accessibility and inclusivity of the online dance classes (regardless of mobility issues) and the idea that classes provided a structured routine to the week during lockdown as key benefits of the online transition. Indeed, one important barrier to engagement with in-person art-based activities is travel (effort, time, and cost). Particularly, for those who have mobility restrictions, for clinically vulnerable populations, and for those living in rural areas where in-person attendance is not possible. Indeed, 13% of the participants in this study were living in rural areas and data from the focus groups showed that some of them reported physical limitations that prevented in-person attendance. Thus, the transition to online art-based programmes has the potential to enhance the accessibility of these activities to previously limited audiences.

Participants also highlighted the lack of confidence in using the technology, lack of access to technology, and affordable internet connection as main barriers to the progress of online approaches in arts. This finding is supported by recent evidence on digital inequalities including age, education, income, broadband access, and rural residence as limiting factors to engagement in art-based programmes (Khilnani et al., 2020; Misek et al., 2022). Socio-economic inequalities pose significant challenges to equal access to the use of online services. Indeed, 60% of the participants in this study were classified as living in the least deprived areas, according to IMD. This suggests that low socioeconomic status is a potential major barrier to accessing online programmes. Finally, participants saw potential for the hybrid combination of in-person and online dancing, in part driven by concerns related to the COVID-19 pandemic. Therefore, future studies should explore the feasibility of hybrid art-based programmes, including dance, to incorporate the benefits of online accessibility to the traditional in-person activities.

Our findings are promising; however, they must be viewed with some caution given our small sample size. Larger sample sizes and inclusion of randomised control groups would clarify changes were due to dancing and be able to highlight consistency or change in measures even with high baseline scores. In addition, the ratio of male to female participants in our study was not equal and future research might examine gender dynamics and attitudes towards online art-based programmes. The current study did not collect data on occupational and caring status. Future studies should screen for the status, especially if including older adults as participants.

Conclusions

Our results demonstrated that participation in an online dance programme during the COVID-19 pandemic provided community-dwelling older adults with mental and social

wellbeing benefits. Participants reported improvements in life satisfaction, happiness, and anxiety levels after 8 weeks of attending online dance classes. Participants' high attendance rates and responses indicate that the online dance classes successfully met their needs. The results from qualitative data indicate that engagement in online dance classes was associated with the perceived holistic health benefits of the programme, the opportunity to join an accessible regular online dance programme, and the social support achieved through the online group format. However, future studies should consider adjustments to online programmes to facilitate remote participation. Focus groups suggest the inclusion of dedicated time before and after the online dance class to socialise. Indeed, engaging in online dance classes with other people fostered a sense of community and social connectedness. In addition, we show that future online programmes, if they are to be more inclusive, should be supported by training and instructions for all participants. Online art-based dance classes have the potential to extend in-person dancing benefits beyond the traditional domains of practice.

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Data availability statement

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

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