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Digital adaptations to arts programme delivery for people living with dementia in response to the COVID-19 pandemic

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ABSTRACT

Background: Learning from the challenges and successes of online arts delivery during the pandemic is crucially important for considering long-term sustainable solutions that enable people living with dementia to remotely participate in meaningful activities.

Methods: Twenty-eight arts workers responded to an online survey exploring i) the meaning of face-to-face arts activities that were replicated online, ii) perceived motivations to attend, iii) successes and challenges in adapting arts for online/socially distanced setting.

Results: Responses described arts giving structure and purpose to people living with dementia and their carers, a sense of community, and a way to reduce physical isolation. Success on digital delivery of arts depended on how inclusive practices were in relation to different abilities, technology experience and support levels.

Conclusions: Despite challenges, the range of interactions across activities demonstrated various ways for people living with dementia to make a contribution, feeding into the feelings of purpose and belonging in the online/digital community.

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Dementia; arts; video-conferencing; technology; COVID-19

Background

Repeated lockdown orders and requirements for social distancing in the UK during the COVID-19 pandemic meant that many services and activities were forced to seek delivery through alternative means, often using online technology and asynchronous means of interaction, or were faced with cancellation over long stretches of time. Due to increased risks of COVID-19 for older adults living with dementia, most face-to-face community and social services for this population were either disrupted or cut off. The removal of these opportunities for meaningful activity and social engagement left many people living with dementia experiencing a loss of self-worth (Talbot & Briggs, 2021) and increased negative mental and cognitive effects (Giebel et al., 2021; Tuijt et al., 2021). Adoption of technology has the potential to mitigate effects of social isolation not only in the context of pandemics but also more generally, including for people living with dementia (Talbot & Briggs, 2021).

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The pandemic caused an acceleration in technology adoption in various contexts, including older adults maintaining connections with others and engaging in social activities (Zhao et al., 2023) and people living with dementia accessing social support services (Giebel et al., 2021). Giebel and colleagues (echoed in Hicks et al., 2023) note this provision was limited to those with existing access to electronic devices and reliable internet connections. Carers reported that for those who could connect online with family and friends or online services, this provided an avenue for social connection and inclusion (Hicks et al., 2023). Elements leading to successful online activities for people living with dementia included relationships (establishing trust between user and supporter), purpose (clear purpose of using technology and motivation to make use of it), technology (itself being flexible, useable for the individual, and aligned with purpose) and community (being able to connect with others once online) (Evans et al., 2022). Roach et al. (2021) call for research that examines the provision of virtual dementia care, exploring the specific challenges and opportunities that online or offline[1] technologies offer, with the aim of reducing bias towards the use of technology for this population and offering insight into areas of future developments. In this paper, we were specifically concerned with the adoption of technology during the pandemic in the context of arts provision for people living with dementia. Using a survey instrument distributed in the UK in July–August 2021, at the point where the government removed all previous stringent restrictions on social gatherings,[2] we aimed to explore what had been organisers' successes and challenges in adapting various arts activities for an online or offline (but socially distanced) setting, and how these experiences might influence the continuation of services from this timepoint.

A growing body of literature examines the potentials and challenges of transitioning from face-to-face to digitally delivered arts activities for people living with dementia primarily using communication technologies (e.g. Zoom or Skype). This includes choral singing groups (Dowson et al., 2021), individual music therapy (Dassa et al., 2021) and case studies of multimodal activities that include cognitive stimulation, reminiscence therapy, music therapy and physical exercise (Quail et al., 2021). Findings point to challenges in engaging people living with dementia related to the use of screens including: difficulties in preserving eye contact with other participants, facilitators being unable to "physically" intervene to assist the person living with dementia, and general disorientation (Dassa et al., 2021). Connectivity issues are reported including poor-quality sound connections and latency problems (particularly relevant during attempts to sing synchronously together in virtual choirs), as well as issues surrounding digital inclusion related to, among others, financial barriers, digital privacy and security and general accessibility (Dowson et al., 2021).

Reports illustrate the extent of creative problem solving required to make arts activities successful in the sometimes limited online environment (e.g. Entelechy Arts for older adults reported in Howlin & Jones, 2021; Intergenerational Music Making, 2020 discussing activities for older adults including those living with dementia; Unlock and Revive project reported in Stewart et al., 2022 on weekly online sessions for people living with dementia provided by several cultural and heritage organisations). Success was attributed to the use of multimodal opportunities for engagement (e.g. tactile resources being sent in the post) and how this created a "space for sharing" (Howlin & Jones, 2021). The importance of tangible objects or reminders of

connecting with others (such as printed pictures, physical objects or handwritten letters) was acknowledged for people living with dementia, especially when some musical interactions (such as watching performances or singing along with others) could feel one-sided in an online format (Intergenerational Music Making, 2020). Participants of culture and heritage online events indicated that weekly digital events provided structure and opportunities to connect with others. People were motivated to attend for various reasons including personal interest in a theme/topic, feeling part of a wider community, and delivery/presentation format of the proposed event (Stewart et al., 2022). Despite technical challenges as mentioned in Dowson et al. (2021), online offerings were thought to increase comfort in attending and engaging as people could join in from their familiar home surroundings (Stewart et al., 2022).

This existing research indicates that online arts activity for people living with dementia is feasible and welcomed, particularly when physical interaction is not possible. Information still lacks concerning what specifically is meaningful for people living with dementia about the arts activities being described, and how these activities can be designed digitally to ensure meaning is retained specifically as part of dementia care. For long-term rather than interim solutions, better insight into the challenges and opportunities for meaningful online interaction with arts and through arts is required. Subsequently, our research questions were: (1) What is the meaning in face-to-face arts activities that organisations are aiming to replicate via online services for people living with dementia? (2) How do perceived motivations (and their relative importance) for attending arts activities change for people living with dementia from face-to-face to online formats? (3) How have arts organisations/facilitators practically devised solutions to account for distanced arts provision with/without the use of technology and what are the successes and challenges involved?

To answer these questions, a qualitative and quantitative survey was used to capture UK arts workers' and organisations' experiences in delivering arts activities online for people living with dementia during the pandemic.

Methods

Participants

Arts workers who had professionally delivered creative arts activities online in the UK for people living with dementia during the COVID-19 pandemic were invited to participate. The survey was advertised online via various social media platforms. Additionally, 11 larger and 92 local services that deliver arts for health activities to older adults were contacted. Responses were incentivised with a draw of two gift vouchers. Participants could either complete an online survey, or an online interview with identical questions. After the exclusion process,[3] 28 participants were included.

Materials

The survey comprised 25 questions regarding (i) respondent demographics, (ii) geographic locations and settings of people accessing their services, (iii) types of arts activities

being delivered, and (iv) types of online tools used, (v) Likert-scale ratings for perceived motivations in accessing these services face-to-face and remotely,[4] and open-ended questions to allow description of (vi) activities possible or not possible in an online/remote format, (vii) the successes and challenges of using online tools for this specific population, and (viii) potential solutions if given a "magic wand". This last question was intended to encourage thinking beyond practical adaptations. Questions regarding the types of activities delivered and online tools used were in multiple-choice format, and included an "other" option. Open-ended questions were employed to allow respondents to give greater detail, with space for additional comments at the end. Video interviews employed the same materials as the online survey.

Procedure

The survey was released in mid-July 2021 and was available for approximately two months. The introductory pages included information about the study including contact details should the participants wish to complete an online interview instead. Participants read a set of consent statements to which they indicated their understanding and agreement. Ethics approval was obtained from The University of Sheffield Department of Music (approval number 039045).

Data analysis

For quantitative responses, statistical analyses were performed using R. Cumulative link mixed-effect models (CLMMs) in the R package *ordinal* (Christensen, 2022) were used to analyse the Likert-response questions on the perceived motivations for face-to-face and online arts activities. To avoid assuming that Likert values are separated by proportional distances, the CLMMs map the ordinal-dependent Likert responses onto ordered latent distributions. The mixed effects models can also better take into account individual responses that are different from the population average (Taylor et al., 2022). As we were interested in analysing the change in perceived motivations between formats, one participant's responses were omitted as they had only worked online. After fitting the models by comparing −2LLs with a Chi-square test statistic, we performed a likelihood ratio test, adjusted with Tukey's Honest Significant Difference (HSD) so that the entire set of comparisons has a family error rate of 0.05. Likelihood ratio tests are similar to F-tests but are slightly more conservative. We report the latent means, 95% confidence intervals, and groupings as a result of their comparisons. Motivations that do not share grouping symbols differ significantly from one another (with those sharing grouping symbols showing non-significant findings).

Interviews were transcribed verbatim by a member of the research team and imported into NVivo 12 release 1.6. Open-ended responses were extracted from NVivo and placed alongside the interview transcripts for thematic analysis. An initial codebook was created after a sampling of the data, agreed by authors JM and JC (Braun & Clarke, 2021). They then used the codebook independently to complete a first round of coding the open-ended questions and interviews, giving a Cohen's Kappa inter-rater agreement of 0.48. After discussion, they added several new codes to reflect the role of additional support materials and structures for the interaction (e.g. better audio or video equipment,

gatekeeper, personnel & financial resources, physical materials, and promoting awareness) and removed codes that were no longer necessary or redundant. Divergences in coding were resolved in subsequent discussion. As a result of this iterative process, categories were agreed upon and described in collaboration. Longer sections of text were kept together to allow for richer descriptions and to improve agreement between coders. Author EF who had not been involved in earlier discussions checked the previously agreed-upon coding using the revised codebook, (Cohen's Kappa = 0.733).

Results

Demographics

Twenty-eight arts workers (25 females, mean age = 47, SD = 10.96) delivered music (24 respondents), arts (8), crafts (4), dance (6), drama (3), and word-based activities (1). Respondents had delivered arts activities for people living with dementia for an average of 9 years (SD = 6.9). The sample represented provision over a spread of UK geographical regions (Table 1).

Table 1. Number of responses for each geographical region. Respondents could select all geographical regions that applied.

Geographical region	Number of responses
England (Total)	**34**
East Midlands	4
East of England	4
London	6
North East	3
North West	3
South West	4
South East	4
West Midlands	3
Yorkshire and the Humber	3
Wales (Total)	**4**
Mid and West Wales	1
South East Wales	1
South West Wales	2
Scotland (Total)	**5**
Edinburgh and Lothians	2
Glasgow and Strathclyde	1
Tayside, Central and Fife	2
Northern Ireland (Total)	**1**

During the pandemic respondents most likely worked *often* with people living independently in their own home, *often* with people in community facilities, *often* with people in residential care, and *rarely* with people in hospital (Figure 1).

Respondents self-identified as being an actor (2), artist (6), dancer (2), musician (15), teacher (13), writer (5), or other (6).[5] Within "other", respondents identified themself as being an art therapist, director, music therapist, songwriter, community engagement manager, project manager, or social worker. Their current professional roles fell into the categories of creative arts worker (15; e.g. art therapist (trainee), music therapist, choir director, visiting entertainer), community worker (6), and project manager (6).

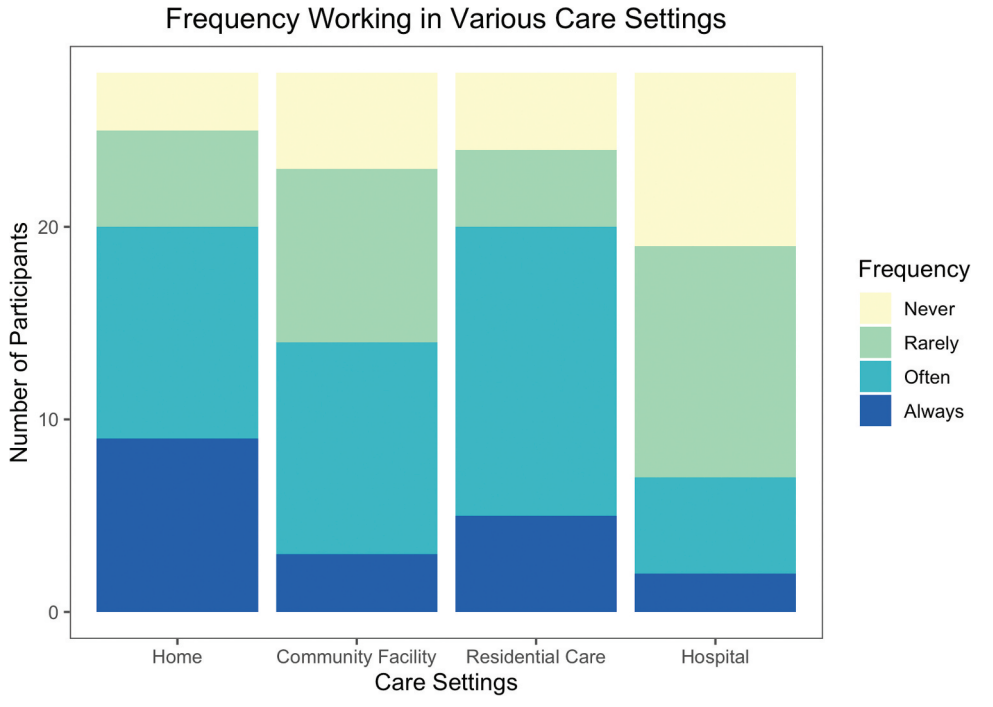

Figure 1. Frequency working in various care settings.

Motivations and importance

The type of motivation was rated significantly differently ($p < .001$), with a significant interaction effect of type of motivation and context ($p = .028$) (Table 2). There was no significant difference in how context was rated. Respondents considered that enjoyment and positive mood, social interaction, keeping minds active, keeping occupied or distracted, and self-expression were significantly more important motivators than maintaining or improving skills ($p < .036$) (Figure 2 and Table 3). In online contexts, arts workers considered that keeping occupied or distracted, enjoyment and positive mood, keeping minds active, and social interaction were significantly more important motivators than maintaining or improving skills ($p < .0001$), while keeping occupied or distracted, and enjoyment and positive mood were significantly more important motivators than self-expression ($p < .037$) (Figure 2 and Table 4).

Table 2. Type II analysis of effects of deviance with likelihood ratio (LR) chi-square tests.

	Df	LR Chi-square	*P*-value
Online or face-to-face context	1	1.3017	.25
Type of motivation	5	27.0977	<.001
Interaction of motivation and context	5	12.5581	.028

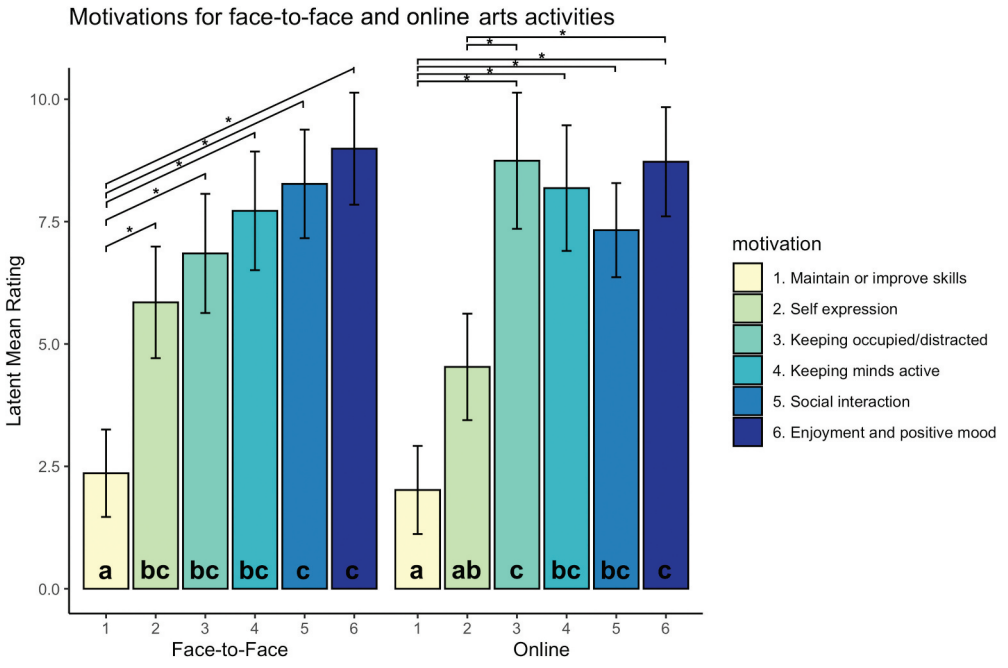

Figure 2. Ratings of the motivations of arts activities face-to-face and online. Asterisks denote significant differences of selected comparisons. All comparisons are reported in Table 3. The letters denote each category's compact letter display (CLD). When a category shares at least one letter in common with another, (e.g. In the face-to-face setting, 5. Social interaction and 6. Enjoyment and positive mood both have the group letter "c"), this indicates a *p* value exceeding alpha (0.05). Means that are significantly different from one another do not have a compact letter display in common, e.g. In the face-to-face setting, 1.Maintain or improve skills which has the group letter "a" compared to any of the other categories in the same setting which do not have "a" in their group letters.

Table 3. Tukey-adjusted pairwise analysis of individual motivations for face-to-face activities motivations are grouped depending on significant differences found in pairwise comparisons. The "group" letters in the table detail their compact letter display (CLD). When a category shares at least one letter in common with another, e.g. social interaction and enjoyment and positive mood both have the group letter "c", this indicates a *p* value exceeding alpha (0.05). Means that are significantly different from one another do not have a compact letter display in common, e.g. The category "maintain or improve skills" which has the group letter "a" compared to any of the other categories which do not have "a" in their group letters.

Face-to-face motivations	latent mean	95% CI	group
maintain or improve skills	2.36	[0.605, 4.11]	a
self-expression	5.85	[3.613, 8.08]	bc
keeping occupied or distracted	6.85	[4.464, 9.23]	bc
keeping minds active	7.72	[5.346, 10.1]	bc
social interaction	8.27	[6.094, 10.44]	c
enjoyment and positive mood	8.99	[6.748, 11.23]	c

Table 4. Tukey-adjusted pairwise analysis of individual motivations for online activities. Motivations are grouped depending on significant differences found in pairwise comparisons. The "group" letters in the table detail their compact letter display (CLD).

Online motivations	latent mean	95% CI	group
maintain or improve skills	1.95	[0.244, 3.65]	a
self-expression	4.38	[2.315, 6.44]	ab
social interaction	7.08	[5.258, 8.9]	bc
keeping minds active	7.91	[5.484, 10.34]	bc
enjoyment and positive mood	8.43	[6.32, 10.55]	c
keeping occupied or distracted	8.45	[5.815, 11.08]	c

Thematic coding

We identified three main themes and 10 sub-themes in the open-ended responses (illustrated in Figure 3):

(1) Why: describes respondents' perceptions of the motivations behind people living with dementia's participation in the arts activities,
(2) What/How: describes details on the types of interaction afforded by the activities, steps taken to modify activities or technology to make them fit-for-purpose, and identifies ways technology could provide opportunities for contribution and sharing amongst attendees.
(3) Access: describes digital access issues, user setup and maintenance, benefits and challenges of interacting through screens, and organisational concerns.

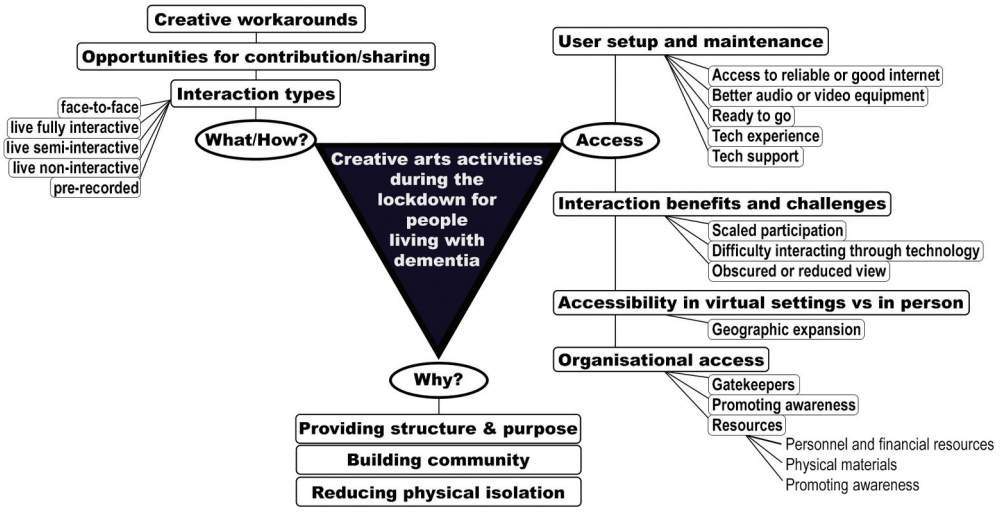

Figure 3. Main themes and subthemes of open-ended responses.

Why?

The three sub-themes that discussed the motivation behind participating in arts activities online were: *structure and purpose, building community* and *reducing physical isolation*.

Structure and purpose

Statements in this sub-theme reported arts activities contributing to a meaningful routine, or regular structure of the day or week, especially when people living with dementia were shielding[6] during lockdowns. One participant reported activities helping to serve as "landmarks" when "one day was exactly the same as the other" (P1) whilst another observed the utility of such creative activities to "break up the day" (P2). The function of these activities was reported as multi-faceted, allowing people living with dementia to participate in creative practice ("making new things is an important element", P13) whether this be a new activity, or something that was related to their earlier years ("continuation of lifelong habits of musical engagement and the sense of identity associated with that", P21).

Building community

Statements in this sub-theme suggested that continuation of these activities online allowed people living with dementia to keep "a sense of community" (P1) or "feeling of togetherness" (P6). These groups were acknowledged as "lifelines" where people could find peer support and could spend time with others in a similar position. Seeing familiar people (other participants or the activity facilitator) was suggested as contributing to a "sense of normality" (P25). One participant reported "even if they didn't remember who the names meant, they knew that there were other people" as "they kept saying that they felt they had been forgotten" (P2). Arts workers often reported online communities evolving around a particular activity (e.g. a weekly singalong session held on a YouTube channel), where audience members unfamiliar with each other would use the chat function to say hello and ask each other questions.

Reducing physical isolation

In this sub-theme, one participant reported that online activities provided "contact, even though frustrating at times" (P17) as many statements suggested this was something that filled the void, or kept people connected in a way until groups could gather together physically again. Other statements emphasised this feeling, suggesting that although online activities provided a way to mitigate the effects of isolation, people living with dementia and their carers wanted "an arm around their shoulder" (P2) which wasn't possible with current technology.

What/How?

The three sub-themes relating to the types of activity delivered and how these were technologically realised comprised *types of interaction, creative workarounds*, and *opportunities for contribution/sharing*.

Types of interaction

Statements describing activities were grouped based on four of Dowson et al.s' (2021) five types of interaction: live fully interactive, live semi-interactive, live non-interactive, pre-recorded.[7] Live fully interactive sessions were described including arts classes or group singing for people living with dementia carried out over communication technologies (Zoom, Skype, or Microsoft Teams) which allowed participants to see and hear the facilitator and other participants live. Live semi-interactive sessions were described, primarily choir, singalong or music concerts held on social media sites (Facebook Live or YouTube), where attendees could see and hear the facilitator, but interaction was limited to text-based comments. Few live non-interactive sessions were described, one example being a choir performance comprising pre-recorded single singer tracks that were multi-tracked together in a studio. Finally, pre-recorded sessions including videos or Zoom webinars were described that were hosted on the internet, or in some cases burned to DVD and posted to audiences. Other examples included digital newsletters sent via email which contained pictures, poems, or links to pre-recorded YouTube videos.

The type "physical materials" described two instances where workers mentioned non-digital materials being sent to participants, e.g. arts and crafts packs, or physical props to "add interest" to digital interactive sessions. Although facilitators were asked if they used online digital instruments or environments to deliver arts activities, only one participant reported using iPad apps (GarageBand and Thumbjam) to explore making music with people living with dementia. An additional interaction type "face-to-face" included activities that were either in physical presence of one another (e.g. in-person "socially-distanced" concerts in a car park or garden) or comparisons made with pre-pandemic in-person activities.

Creative workarounds

Statements in this sub-theme typically described procedures put in place to either make existing technology fit for purpose in helping deliver arts activities remotely, or to modify the arts activities so they could be delivered by existing resources. Examples of technology workarounds were in enabling online choir rehearsals or singalongs. Respondents noted options including muting participants so that multiple people weren't trying to sing at once (resulting in noticeable latency differences), or recording each singer separately and piecing together a "performance" offline in the studio. Activities that included large group discussions were confusing for people living with dementia, and so a different option was to use virtual breakout rooms/spaces to make discussions smaller. Other technology workarounds were sought to overcome visibility issues, e.g. the use of multiple cameras so remote facilitators could see everyone in a group setting, or access issues, e.g. creating and distributing printed newsletters or DVDs of material to people who could not access online resources. Another example was facilitators using Microsoft Teams to enable a landline-based conference call. Here, people living with dementia only had to answer the phone when it rang, rather than needing to work online with Microsoft Teams itself.

In terms of modifying the content of arts activities to suit an online format, respondents noted diversifying their offerings and including more arts, crafts and spoken-word formats (e.g. poetry and creative writing). Specific activities such as music therapy were also reported to be "tweaked" to the online setting where there was more of an expectation for the therapist to be the onscreen leader than would have been in a typical face-to-face session.

Opportunities for sharing and contribution

Statements in this sub-theme described different platforms or procedures across the many synchronous and asynchronous arts activities delivered that would allow participants the opportunity to contribute to the activity, or share something with the facilitator/group. Contribution could be in the form of online voting, or commenting on an ongoing session or music performance via a YouTube/Facebook chat/comments box. Live song requests were often taken for those arts workers delivering musical singalongs or concerts, and live voting was used for choir participants. Participants were often encouraged to contribute a favourite picture, poem or song for facilitators who created digital or printed newsletters to share with others. More synchronous forms of sharing were described as moments where participants could hear or look at each other's work.

Access

Four sub-themes contributed to the main theme of Access: *user setup and maintenance, interaction benefits and challenges, accessibility in-person vs virtual,* and *organisational access.*

User setup and maintenance

In statements coded in this sub-theme, people living with dementia were perceived to access these online activities most successfully with the *tech support* of a carer or family member, although some reported the facilitator aiming to give this support remotely and others reported people living with dementia accessing these services successfully on their own. Previous *technology experience* of the participants and their carers/family members also played into how successful these online activities were, with many respondents noting challenges in joining the live fully interactive sessions via Zoom. Participants who relied on others to provide support or access experienced *Gatekeeping* to the arts activities online: access was noted to be dependent on levels of carer confidence, or need for connection. Respondents also noted a growing appreciation for the arts during the isolation of the COVID-19 pandemic lockdowns, in comparison to them feeling that the creative arts were previously undervalued.

A desire for *Better audio/video equipment* was expressed through various statements regarding technology used by participants (and by the facilitators). This included specific items such as better microphones, or discussed more general ways to ensure "high quality sound and visuals" and being able to "hear individuals" (P8).

Statements further described *access to reliable internet* being critical to the success of online activities. Where internet was available (as some previous face-to-face participants were noted to not have access at all), responses described difficulties in maintaining a good connection ("network issues", P17), and expressing needs for a clear image and sound, "good enough internet to stream videos" (P9) and even consistent coverage either geographically, or within the same location (e.g. in different parts of a care-home setting). Whereas *tech support* noted times where facilitators or carers could step in to facilitate taking part online, it was noted that for those participants or settings who didn't already have the technology to go online, that it was just not possible to support them in setting this up. Respondents also discussed *latency issues*, mainly the lag and distortion experienced when trying to sing/make music simultaneously with each other. Latency issues were

reported in general interaction between participants, which made it "hard to hear residents" (P6) and equally a desire for the facilitator to be "clearly transmitted to all group members clearly" (P8). On one occasion, connection and latency issues were a source of humour. Here, the facilitator was providing group singing through conference calling through Microsoft Teams (as described above). They noted that "just occasionally, it would turn us all into Daleks", and that "it makes them laugh like trains. They just love it" (P2).

The interfaces and platforms participants used to access an online session were discussed as part of this sub-theme. The conference-call group singing through Teams was again discussed here, as the setup allowed participants to simply answer the phone call on their landline/mobile rather than have to access a Teams app or webpage. Some respondents mentioned that the one-click joining of Zoom was easier to log into than Teams, whilst others stated that the Zoom link was not particularly user-friendly. Respondents would often send these links out to email lists of users on the day (so less likely to be misplaced), and reported making the links to broadcasts or videos available over a number of different platforms (Facebook, Twitter, and Patreon posts). Statements expressed the need for large, easy-to-access tablet or laptop interfaces with minimal buttons for participants, as well as easier controls to navigate (simple easy-to-see locations to mute/unmute or start video) which would be the same across all devices (presumably so the facilitator could better assist different individuals at the same time).

Interaction benefits and issues

This sub-theme included statements concerning the benefits and challenges of interacting through digital screens, and elements such as vision being obscured. Potential benefits noted were around social concerns, e.g. one respondent (P10) spoke about a group of older men living with dementia who they felt were more able to participate online than in face-to-face settings. The proposed reasoning was that any social awkwardness or anxiety felt in face-to-face settings was reduced via interaction on a screen. They continued with "you have to meet people where they're at", and that online activities can offer *scaled participation* that can match individual needs or desires of engagement. Other statements suggested a new ability to quickly and gracefully bow out of a session if a "song hit a nerve" (P1) just by logging off.

People living with dementia were suggested to have varying experiences of interacting through screens. This could depend on the stage of progression of dementia, as well as previous experiences using Zoom and Skype to talk with family members. One respondent noted that although people living with dementia were often used to Skyping their grandchildren and so familiar with the general process of interacting online, they often found there was "visual overload" (P2) which could interfere with processing what people were saying verbally. Others noted difficulties in concentrating on the screen, although one respondent noted that "some participants' attention was drawn much more to a screen than watching me in person! Although the reverse was also true for different people" (P27). Generally, respondents suggested a mismatch between feedback from carers and reports from people living with dementia in using online tools, essentially that the former would be far more positive than the latter: "the carers sometimes are more keen to take part than the people living with dementia … looking at a screen is weird … it's not really what they are looking for sometimes." (P4).

The changes to interaction that came with being online were noted in terms of how interactive the people living with dementia could be in the session. For example, in musical activities, respondents noted more listening rather than active participation online. Interacting online also changed the type of support that could be offered through these meetings: it tended to limit the possibility for one-to-one conversations. Providing sessions online appeared to have varying success in encouraging participation: some respondents reported that they had several new people join the session as a result of it being online; others reported several people were unwilling, unmotivated or unable to use the technology to participate.

Accessibility in-person vs virtual

Statements in this sub-theme described the advantages and disadvantages of online arts activities. Positive statements for online interactions described participants being able to take part from the comfort of their own homes, and even in their pyjamas if they'd faced difficulties getting up in the morning. Negative statements for online interactions described missing participants all "singing at the top of their voices . . . I miss that audible feedback" (P6). Depending on the activity, facilitators reported mixed feelings about the online format. Some mentioned that it increased access massively, certainly to *expand the geographical reach* of any one activity or organisation, but also particularly to those who were particularly unwell, physically housebound, and that some people with dementia might prefer it entirely to face-to-face activities. One participant described the benefits of face-to-face interaction as allowing for "more subtle, tailored forms of engagement" and that the online format wasn't "as personally reflexive and responsive – something that can be critical in working with people at more advanced stages" (P27).

Discussion

Our first research question asked how arts workers perceived the meaning of activities they were replicating online for people living with dementia during the lockdown period. Our results (sub-codes *Structure and purpose, Building community, and Reducing physical isolation*) indicated that arts workers felt this mainly to be in building (or maintaining) a feeling of community in the absence of physical connection and providing a sense of structure and purpose. Although this was perhaps pronounced in a time of mass social isolation, these are characteristics that are worthwhile pursuing when concerning any future digital/technology-aided activities for people living with dementia. What our results helped to explore was how these forms of meaning were sought through various digital synchronous and asynchronous forms of interaction and the extent to which meaningful engagement was successful. The range of potential interactions exploited across these activities (as in our sub-code, *Interaction benefits and issues: scaled participation*) demonstrated various ways for people living with dementia to make a contribution, which we suggest fed in some way to the feelings of purpose and belonging in the online/digital community. What was unclear was the extent to which participants found these individual forms of interaction meaningful. Examples found in our sub-code *Opportunities for sharing or contribution*, include options to vote on content. Simply having the option to vote on a particular song that was to be performed in a session is offering a choice, but to what extent is that choice personally meaningful? Other examples were more

obviously tied to individual contributions, such as asking participants to share their artworks, or to send in a poem or picture that had personal meaning to be included in a digital newsletter or video. This is supported by Zhao et al. (2023) who suggest opportunities for creating or sharing digital content were important for sustaining older adults' relationships with others.

The second research question asked arts facilitators their perceptions on how various motivations of participating in arts activities changed between remote and online settings. Our results showed that motivations *Keeping Mind Active, Keeping Occupied or Distracted, Social Interaction* and *Enjoyment and Positive Mood* were all rated highly in terms of importance, and this rating didn't significantly change between the online and face-to-face settings. Ratings showed *Maintaining or Improving Skills* was considered less important than these first four motivations, and this also didn't significantly change between formats. Ratings for *Self-Expression* changed between formats such that it was considered more important than *Maintaining or Improving Skills* in a face-to-face context, but not in an online context. Essentially, arts organisers perceived the main motivations for people living with dementia being involved in arts activities to be in gaining a mixture of cognitive, social and emotional benefits, and the results in our thematic analysis showed how facilitators attempted to provide a range of interactions available to meet these varied needs (*Interaction benefits and issues: scaled participation*). Self-expression obtained lower priority in face-to-face contexts and the novel online context may have further reduced that. Self-expression may have been harder to achieve and may have suffered as a result.

Our third research question asked how arts organisations had adapted to the online context to account for these motivations to participate and the meaning participants would take from the activity. Our results showed that arts organisations and facilitators had devised many different solutions for taking previously face-to-face arts activities online during the pandemic (sub-code *Creative workarounds*). The extent to which this meaningfulness was achieved in online versions of the arts activities could be said to depend on how inclusive the practices were in relation to different abilities, tech experience and support levels, and comfort with interacting through screens (code *Access*). One of the notable challenges here were the access barriers and limitations in terms of people living with dementia's previous experiences with technology and need for support. These are in line with observations made during online group singing activities (Dowson et al., 2021) and in using smartphones and tablets for cognitive reminders (Wilson et al., 2022). Although this is reflective of continued support required to assist many older adults to use technologies for online arts activities (e.g. in music instrument lessons, MacRitchie et al., 2023; in arts sessions, Howlin and Jones, 2021), there are also a wide range of previous experiences with technology and willingness to use them. Our results showed a range of interactions with people living with dementia: differences in how well they could interact in-person vs onscreen; differences in how well they could access physical spaces or technology-driven ones, and different preferences they had in interacting socially with a group in-person or online. For instance, although comments noted that online interaction couldn't replace the "physical hand on the shoulder", other comments noted that being online meant anxiety for some participants about face-to-face social interactions was somewhat abated. A participant could also remove themselves or duck-out quickly from the group if they needed to. This aligns with reports from arts, culture and heritage

organisations that indicate that although there was a general feeling that online activities could not replace the social connection offered by face-to-face events, online formats could specifically offer a form of "digital comfort", provided digital access needs were met (Stewart et al., 2022).

The implications of this study are concerned with design features that encourage the long-term sustained use of online or hybrid arts activities for people living with dementia. As Wilson et al. (2022) call for more research into the use of smartphones and tablets for cognitive support for people living with dementia, we would also suggest further research into accommodations or "creative workarounds" for using social media and communication platforms that would allow them to access remote arts activities in a social context. Our results suggest many benefits of having a remote offering available, whether it be for people living with dementia who are more socially comfortable to interact online, are hampered by availability of local offerings, or cannot leave the house. That being said, this cannot be recommended without acknowledging the pressure this puts on facilitators to be both online and in-person, something that is challenging to do simultaneously.

Limitations

Although our study is limited by the number of respondents (28) and so particularly the statistical results may need to be interpreted with caution, we feel this still represents a relevant snapshot of the experiences of arts facilitators across the UK who work specifically with people living with dementia online, due to their geographical spread. Our sample predominantly contains facilitators who were delivering music activities as opposed to different types of arts. Here there may be a potential bias to the limiting nature of being able to carry out synchronous activities (such as online group singing) whereas other arts activities would not feature such noticeable latency issues. We also only survey people who successfully delivered online arts programs and in doing so, do not consider the views of those who ceased face-to-face programs entirely. This group could provide relevant information on why they could not (or chose not to) replicate their activities in a digital, distanced or hybrid format.

This study specifically asks the perception of the facilitators in terms of the successes and challenges for participants in their sessions. Although this provides us an idea of how these activities are received over a large number of individuals, and background information on how these activities were "tweaked" to fit the online format, the results on specific meaning of interactions for people living with dementia is speculative. The missing voice is the person living with dementia and their carers. Although this article gives an insight into the experience of running these types of activities, and the accommodations that could be made, further research needs to be done to see how this translates into meaningful contribution, activity or membership of a community.

Conclusions

From our survey study, we can conclude that online arts activities for people living with dementia was feasible during the pandemic when face-to-face interaction was not possible. Feasibility of online interaction is important to confirm, as it constitutes

a major shift in working practices that prioritised in person interaction for people living with dementia. Our findings point to online arts offerings being a valuable contribution continuing on in the future, and one which could be turned towards increasing inclusivity. Overlapping with in person scheduled activities, online offerings are seen to be experienced as meaningful through the structure and purpose they provide, community building and providing opportunities for sharing and contribution. These are feasible through online platforms for people with dementia and can be strengthened through further technical developments.

Notes

1. Offline technologies include sharing material like audio/video recordings or newsletters where recipients can also respond via phone or mail.
2. https://www.gov.uk/government/publications/covid-19-response-summer-2021-roadmap/covid-19-response-summer-2021#fn:7
3. After independent examinations by two raters, 16 respondents were excluded due to "straightlining,". i.e. making questionable and thoughtless responses. In all likelihood, most of these responses were made by the same individual given idiosyncratic phrasing and time of completion.
4. Participants were asked to rank the importance of six different motivations (maintain or improve skills, keeping occupied or distracted, self-expression, keeping minds active, social interaction, and enjoyment and positive mood). These motivations were selected based on the findings of (Lazar & Nguyen, 2017).
5. Responses to multiple categories were allowed.
6. A measurement put in place to protect those with the highest risk of mortality or being hospitalised by COVID-19, having them stay at home and avoid all non-essential contact.
7. The type "carer-facilitated" from Dowson et al. (2021) categorisation was not used in this context, as the survey focus was facilitator-led activities

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Ethics statement

Ethics approval was obtained from the Department of Music, University of Sheffield (approval number 039045).

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