




RESEARCH ARTICLE

Soothing dementia carers: A pilot evaluation of an imagery-based wellbeing app feature to support family carers of people with dementia during the COVID-19 pandemic [version 1; peer review: awaiting peer review]

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Abstract

Background

The COVID-19 pandemic has presented unprecedented risks to the health of people living with dementia. Confinement to their homes and extra pressure on the health and social care system, left people with dementia and their carers with reduced access to care services. Accordingly, family carers assumed more caring responsibilities and faced a greater risk of social isolation and loneliness, negatively affecting their mental wellbeing. In response, we developed a new imagery-based feature called Project Soothe within an existing app, CogniCare, which aimed to support the wellbeing of family carers looking after someone with dementia at home.

Methods

This new feature aimed to test the utility of our previous research which has shown that viewing soothing images has positive mood benefits on users. In this pilot, we examined the usage of the Project Soothe feature over a one-year period.

Results

Our results indicate the feasibility of the imagery-based app feature as we found that most users found viewing the soothing images to have a positive influence on their mood.

Conclusions

This finding illustrates feasibility of this imagery-based wellbeing app in this population of interest, and suggests that, upon further replication and research, the Project Soothe feature within the CogniCare app has potential to be developed as a digital wellbeing tool for family carers of people with dementia.

Plain Language Summary

The COVID-19 pandemic created heightened risks to the health of people living with dementia. Not being able to their homes and challenges faces by the health and social care system, left people with dementia and their carers with less access than usual to care services. This meant that family carers had to take on more caring responsibilities and faced a greater risk of social isolation and loneliness, negatively affecting their mental wellbeing. To try and support these challenges, we developed a new imagery-based feature called Project Soothe within an existing app, CogniCare. This aimed to support the wellbeing of carers looking after someone with dementia at home. This new feature aimed to test our previous research, which has shown that viewing soothing images has a positive effect on mood, in a usable format. In this initial study, we examined the usage of the Project Soothe feature over a one-year period. Our results show that most users found viewing the soothing images to have a positive influence on their mood. This finding suggests that the imagery-based wellbeing app could be effective for supporting wellbeing in this population of interest. It also suggests that with further research and development, the Project Soothe feature within the CogniCare app could be developed into a digital wellbeing tool for family carers of people with dementia.

Keywords

dementia, telehealth, mental health, carers, wellbeing

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Introduction

There are around 850,000 people living with dementia in the UK (Prince *et al.*, 2014) who, along with family carers, require access to care services and support. The COVID-19 pandemic and associated healthcare policy has had a substantial impact on people with dementia, including reduced access to health, social care, and community support services, resulting in increased distress and heightened risk of mortality, both due to the condition as well as disrupted care delivery (Bacsu *et al.*, 2021; Estabrooks *et al.*, 2020; Hariyanto *et al.*, 2021; RCo, 2020; Williamson *et al.*, 2020). Importantly, this reduction in services has meant that family carers have been required to provide further care duties in addition to existing household, work and healthcare management tasks. Higher hours of care duties put individuals at risk of emotional distress, physical strain, and financial difficulty (Greenberg *et al.*, 2020). Additionally, the increased need for people with dementia and their family carers to shield for an extended period during the COVID-19 pandemic put them at risk of social isolation and loneliness, further compromising their physical and mental wellbeing (Cacioppo *et al.*, 2015; Courtin & Knapp, 2017). There was, and remains to be, an urgent need to create wellbeing resources to support this population.

Underpinned by the compassionate mind theory (Gilbert, 2009), Project Soothe (www.projectsoothe.com) is a global Citizen Science project that has collected 800 soothing images with members of the public. These images were intended to activate the ‘soothe’ affective system that was theoretically predicted to play an important role in emotional regulation (Gilbert, 2009). These images primarily depicted images of nature, aligning with research that has established a link between exposure to nature and wellbeing (Li *et al.*, 2018; Oswald *et al.*, 2020). Our earlier work has shown that viewing these images has a positive effect on mood (MacLennan *et al.*, 2023; Witten *et al.*, 2023), suggesting the potential of using readily accessible Project Soothe images as a means to support wellbeing.

In response to the mental health challenges faced by carers during the COVID-19 pandemic described above, we developed a new Project Soothe feature in an existing app CogniCare designed to provide resources and activities for family carers of people with dementia (<https://apps.apple.com/gb/app/cognicare/id1438950444>). Our new Project Soothe feature aimed to provide users with additional support for wellbeing during this challenging time. Smartphone apps have shown promise of being engaging and to be cost-effective tools that can support wellbeing and mental health (Bakker *et al.*, 2016; Vogl *et al.*, 2016) and can be especially important tools when services are hard to reach, such as in the circumstances during the COVID-19 pandemic.

In this article, we report the functionality of the newly developed Project Soothe feature, users’ demographics, and pilot findings concerning our preliminary user evaluation based on anonymous user data.

Methods

Research design

This was a pilot study to test the feasibility of a new Project Soothe feature in the CogniCare app (CogniHealth Ltd., N.D.). A two-phase approach was adopted, with phase 1 involving development of the Project Soothe feature, and phase 2 involving evaluating feasibility of the feature.

Phase 1: Project Soothe feature design. The Project Soothe feature within the CogniCare app (CogniHealth Ltd., N.D.) was designed for both iOS and android platforms to help improve the wellbeing of familial carers of people living with dementia (Figure 1). The CogniCare app (CogniHealth Ltd., N.D.) was a pre-existing app developed to support people who experience dementia and their families. The Project Soothe feature was developed as an additional feature and was co-produced with people with experience of caring for a loved one with dementia during the pandemic. Co-production in this context meant that local carers approved of the idea for the feature and recognised the need for it, approved of the images chosen for the feature and completed user experience testing to ensure that it was accessible and meaningful. The primary function of the Project Soothe feature was to provide user-controlled viewing of nature-based Project Soothe images. From the bank of Project Soothe

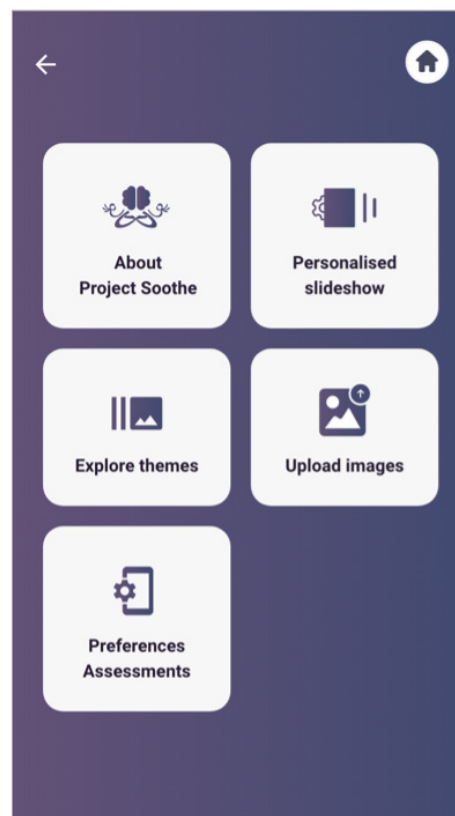


Figure 1. The Project Soothe feature in the CogniCare app.

images, we included 276 good quality images that depicted nature. The final images were categorised into ‘Landscapes’ (n = 103), ‘Water’ (n = 133), ‘Animal’ (n = 43), and ‘Sky’ (n = 128) based on what was most salient in the image, i.e., if an image had both water and sky, we categorised it based on which one was more prominent. The images were also assigned pre-defined tags, which were used to describe the key elements of each image. This categorisation and tagging was agreed through independent coding by three members of the research team (authors PJ, SA, and KGR), and reaching an agreed consensus.

When engaging with the feature, users were first given the opportunity to share their current mood using simple emojis (Figure 2). Eight emojis representing happy, soothed, confident, energetic, anxious, sad, worn-out and irritable were used. These were based on basic emotions identified in standardised mood measures commonly used in psychological research in particular the Profile of Mood States questionnaire (McNair, 1971), and the Positive and Negative Affect Scale (Karim *et al.*, 2011) as well as mood states that are particularly relevant for the purpose of this app (e.g. soothed). After reporting their mood state, users could then view predefined images that had been categorised, as well as creating their own personalised slideshow from the Project Soothe images. While viewing a slideshow of images, the user could ‘like’ images. At the end of the slideshow, the user was asked to report their mood again using the same emoji. The feature also allowed users to provide additional information as to whether they interacted with the feature by themselves or with someone, and what they felt

had influenced their mood changes, from the following set of statements: “The images were soothing”, “My environment was relaxing”, “No change in mood” and “I took time for myself”. Usage was not controlled; therefore, users had the choice of which features of the app they engaged with and the length and frequency of use.

Phase 2: Feasibility. To evaluate feasibility of the app feature, we examined user engagement with and usage of the feature (number of images viewed and ‘liked’) and the mood impact of using the feature based on the emoji they chose (i.e., changes in mood states from before to after use). Anonymised data were collected across the first 12 months of the launch of the app feature.

Ethical consideration

Engagement with the Project Soothe feature was voluntary, and users were not directly recruited. The introductory card within the app (‘About Project Soothe’) informed users that the feature was informed by research and the user privacy notice stated that by using the app, users consented to their data being used for research purposes. The research team had no access to identifiable data and the Terms and Conditions of the app provided users with information regarding how their data would be stored, used, and shared. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of University of Reading (2021-129-SC).

Users

A total of 621 sessions were completed across a one-year period (30th September 2021 – 31st August 2022). A session constitutes the data collected when users have opened and interacted with the feature, which means multiple sessions could belong to the same user. Of the documented sessions, 9.98% were engagement from registered users of CogniCare, whilst 89.53% were from unregistered users, meaning we were not able to obtain more detailed demographic information for most users. Users in 53 sessions (8.53%) submitted whether they used the feature alone or with someone. Of these, the majority (84.91%) of the users stated that they used the feature alone. Given the above, the sample size for each analysis varied and will be clearly indicated below.

Information regarding user location for each session was also acquired. Most sessions were from users located in Great Britain (GB, 35.64%), followed by the United States (US, 19.35%), Italy (IT, 12.22%), India (IN, 8.55%), Australia (AU, 5.1%), and Canada (CA, 3.05%). A smaller proportion of sessions were from users located across 35 other countries.

Analyses

To evaluate feasibility of the Project Soothe feature, we first examined feature usage relating to how users engaged with viewing and ‘liking’ images as well as the mood ratings.

Second, we evaluated how feature usage was related to mood ratings to understand if users experienced positive mood effects from using the app. We conducted a chi-square goodness of fit test to examine if there were significant differences in



Figure 2. The mood status ratings in the Project Soothe feature.

the percentage of sessions in which users reported improved mood (i.e., those who selected a negative mood state pre-viewing and a positive mood state post-viewing the images), positively maintained mood (i.e., those who selected a positive mood state pre- and post-viewing the images), and negatively maintained mood (i.e., those who selected a negative mood state pre- and post-viewing the images) from using the feature. Although there were also sessions where users reported declined or a mixed mood (i.e., reporting a positive mood rating pre-viewing, then a negative mood rating post-viewing the images, or reporting both a positive and negative mood in the same rating point), this group was excluded from this and subsequent analysis due to their extremely small sample sizes ($n = 3$ in each group).

Lastly, we examined how engagement with functions in the feature, including the number of images viewed and 'liked', related to mood ratings to understand if certain engagement with the feature was more likely to have a positive impact on mood. We conducted a Wilcoxon Signed-Ranks test to examine if the amount of viewed and 'liked' images were different in users who experienced a positive mood change (i.e., those who reported negative mood pre-session and change to positive mood post-session) compared to those who maintained a negative mood (i.e., those who reported negative mood both before and after session).

Non-parametric tests were used, as stated above, due to the data being not normally distributed.

Results

Feature usage

On average, users viewed a median of 10 images per session, and 'liked' a median of 0 pictures. Users interacted with the mood rating screen in 83.09% of sessions, with pre- and post-viewing mood ratings being provided in 24.32% of sessions. Most frequently, users gave their pre- mood rating only, whereas in 0.97% of sessions the post- mood rating was completed without a pre- mood rating.

Feature usage related to mood ratings

Firstly, we evaluated how feature usage related to mood ratings, and whether users commonly reported positive mood benefits.

Overall, users appeared to be experiencing negative mood states at pre-rating, with positive mood adjectives being selected in only 36.47% of the sessions versus negative mood adjectives being selected in 77.64% of the sessions. Conversely, for the post- ratings, positive mood adjectives were selected in 75.16% of the sessions and negative mood adjectives were selected in 24.84% of the sessions. The summary of the specific mood adjectives that were selected by app users can be found in [Table 1](#).

For the 151 sessions where users reported pre- and post- mood ratings, we found that 37.75% indicated their mood improved, 35.1% indicated their mood positively maintained, 23.18% indicated their mood negatively maintained, and 1.99% indicated their mood declined or a mixed mood. Chi-square

Table 1. Overall frequency of the mood adjectives used in the pre- and post-viewing mood ratings.

Mood adjectives	Pre-viewing rating	Post-viewing rating
Positive		
Happy	62 (12.16%)	27 (17.2%)
Confident	35 (6.86%)	16 (10.19%)
Soothed	47 (9.22%)	67 (42.68%)
Energetic	42 (8.24%)	8 (5.1%)
Negative		
Sad	62 (12.16%)	9 (5.73%)
Anxious	117 (22.94%)	10 (6.37%)
Worn-out	163 (31.96%)	16 (10.19%)
Irritable	54 (10.59%)	4 (2.55%)

Note. Frequencies include instances where two adjectives were used to describe mood, for example, happy and confident; sad and irritable; worn-out and happy.

goodness of fit test showed that there were significantly more user sessions where improved mood or maintained positive mood was reported in the feature usage, compared with negatively maintained mood ($X^2(3, N = 148) = 49.08, p < .001$).

The relation between images viewed and 'liked' and mood ratings

Secondly, we evaluated usages of the feature in terms of the images being viewed and 'liked' by users, and how this related to mood ratings.

Although raw data suggest that on average users whose mood improved viewed and 'liked' more images than those who maintained negative mood, these differences were not statistically significant (images viewed: $p = .18$, effect size $r = 0.134$; images 'liked': $p = .41$, effect size $r = 0.09$). These suggest that the positive mood changes experienced by some users may not be due to them viewing and 'liking' more images when compared to those whose mood did not improve ([Table 2](#)).

As mentioned above, users were further asked to indicate what they think might have influenced their mood response to the images using a set of statements. Users in 48 (7.73%) sessions submitted this information, out of which approximately half (52.1%) of respondents reported that their mood change was because "The images were soothing", whereas 16.66% reported it was because "My environment is relaxing", 14.58% reported it was because "I took time for myself" and 16.66% reported "No change in mood". All users who submitted this information reported their mood improved or positively maintained in the sessions.

Discussion

The present work extends our knowledge by testing the potential of the Project Soothe images in an app that can be used

Table 2. Summary of images viewed, and images 'liked' in each mood change groups.

	Images viewed					Images 'liked'			
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Mdn</i>	<i>IQR</i>	<i>M</i>	<i>SD</i>	<i>Mdn</i>	<i>IQR</i>
Overall	151	17.85	10.88	20	10	5.53	6.07	4	9
Improved	57	20.42	14.44	20	10	6.46	7.37	6	10
Positively Maintained	53	16.28	7.53	18	10	5.25	5.57	4	8
Negatively Maintained	35	16.51	7.99	12	10	4.6	4	4	4
Declined	3	16.66	11.55	10	10	5	8.66	0	7.5
Mixed	3	13.33	5.77	10	5	4.33	6.66	1	6

Note. *N*: frequency; *M*: mean; *SD*: standard deviation; *Mdn*: median; *IQR*: interquartile range.

in everyday life by people facing everyday challenges. Our pilot study aimed to test if the Project Soothe feature in the Cogni-Care app (CogniHealth Ltd., N.D.) can be developed as a digital wellbeing tool for family carers of people with dementia, whose unmet mental health needs were often overlooked and further worsen during the COVID-19 pandemic. Overall, we found that most users reported positive mood change after viewing the soothing images. This is consistent with our earlier research that found the soothing images to have a positive effect on mood (MacLennan *et al.*, 2023; Witten *et al.*, 2023). The present work further extended previous findings in suggesting that the mood benefits of the images can translate into an app format, having application in everyday life with everyday stress and challenges for family carers of people with dementia. This work has provided essential proof of concept data and preliminary evidence for the feasibility of an imagery-based wellbeing app.

This pilot evaluation of the Project Soothe feature has also provided insights to guide future developments of the app feature as an independent app for other populations. At present there are no limits on how many/few images the users can view, but it may be worthwhile exploring whether the mood effects could be boosted by providing a more prescriptive structure as to how many images users are exposed to in a session. This hypothesis was raised by our findings which found a non-significant trend that users who experienced positive mood effects viewed more images on average than those who did not experience mood benefits. It is however difficult to make conclusions about the impact of the 'like' functionality as it was rarely engaged with by users. The current pilot study also only used simple emoji to assess mood states. Therefore, in further developments of these features, it would be beneficial to interview users to get their perspectives on how to enhance engagement and understand more about the potential mood benefits, as well as conducting more formal mood assessments to verify the current findings.

It is also important to understand if there are additional reasons why certain users may not benefit from engaging with

the Project Soothe app feature. For instance, individuals who have positive and engaging experiences of using mental health apps have been shown to have more substantial positive changes in affect (Bakker & Rickard, 2018). Therefore, it would be beneficial to understand more about user experience and how the feature can be further adapted and improved. This could be achieved by involving users in the co-production of future app developments.

In conclusion, our key findings suggest that users reported positive mood changes after viewing images in the Project Soothe app feature. These findings provide preliminary evidence for the feasibility of the app feature. Our preliminary evaluation therefore suggests that, upon further research and replication in a larger and more controlled study, the app feature could be a beneficial digital wellbeing tool for family carers of people with dementia.

Ethics and consent

Engagement with the Project Soothe feature was voluntary, and users were not directly recruited. The introductory card within the app ('About Project Soothe') informed users that the feature was informed by research and the user privacy notice stated that by using the app, users consented to their data being used for research purposes. The research team had no access to identifiable data and the Terms and Conditions of the app provided users with information regarding how their data would be stored, used, and shared. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of University of Reading (2021-129-SC).

Data availability

Data are restricted as they are under license by a third party, CogniHealth Ltd. Anonymised data was obtained by the researchers for the study through direct request with CogniHealth Ltd. This data is not available for open access and all requests must be directed to CogniHealth Ltd. (Pooja Jain: pooja@cognihealth.co.uk).

Software availability

Software for this research is not publicly available due to copyright being held by CogniHealth Ltd. Software is stored in this in-text citation reference: [CogniHealth Ltd. \(N.D.\)](#). All requests for access should be sought from CogniHealth Ltd. (Pooja Jain: pooja@cognihealth.co.uk).

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References

- Bacsu JDR, O'Connell ME, Webster C, *et al.*: **A scoping review of COVID-19 experiences of people living with dementia.** *Can J Public Health.* 2021; **112**(3): 400–411.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Bakker D, Kazantzis N, Rickwood D, *et al.*: **Mental Health Smartphone Apps: Review and Evidence-Based Recommendations for Future Developments.** *JMIR Ment Health.* 2016; **3**(1): e7.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Bakker D, Rickard N: **Engagement in mobile phone app for self-monitoring of emotional wellbeing predicts changes in mental health: MoodPrism.** *J Affect Disord.* 2018; **227**: 432–442.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Cacioppo JT, Cacioppo S, Capitanio JP, *et al.*: **The Neuroendocrinology of Social Isolation.** *Annu Rev Psychol.* 2015; **66**(1): 733–767.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- CogniHealth Ltd: **CogniCare application.** (N.D.); [accessed 29/02/2024].
[Reference Source](#)
- Courtin E, Knapp M: **Social isolation, loneliness and health in old age: A scoping review.** *Health Soc Care Community.* 2017; **25**(3): 799–812.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Estabrooks CA, Straus SE, Flood CM, *et al.*: **Restoring trust: COVID-19 and the future of long-term care in Canada.** *FACETS.* 2020; **5**(1): 651–691.
[Publisher Full Text](#)
- Gilbert P: **The compassionate mind.** Robinson, 2009.
[Reference Source](#)
- Greenberg NE, Wallick A, Brown LM: **Impact of COVID-19 pandemic restrictions on community-dwelling caregivers and persons with dementia.** *Psychol Trauma.* 2020; **12**(S1): S220–S221.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Hariyanto TI, Putri C, Situmeang RFV, *et al.*: **Dementia is a predictor for mortality outcome from coronavirus disease 2019 (COVID-19) infection.** *Eur Arch Psychiatry Clin Neurosci.* 2021; **271**(2): 393–395.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Karim J, Weisz R, Rehman SU: **International positive and negative affect schedule short-form (I-PANAS-SF): Testing for factorial invariance across cultures.** *Procedia Soc Behav Sci.* 2011; **15**(3): 2016–2022.
[Publisher Full Text](#)
- Li D, Deal B, Zhou X, *et al.*: **Moving beyond the neighborhood: Daily exposure to nature and adolescents' mood.** *Landsc Urban Plan.* 2018; **173**(10): 33–43.
[Publisher Full Text](#)
- MacLennan K, Schwannauer M, McLaughlin AL, *et al.*: **Project Soothe: A pilot study evaluating the mood effects of soothing images collected using a citizen science approach [version 2; peer review: 2 approved with reservations].** *Wellcome Open Res.* 2023; **8**: 218.
[Publisher Full Text](#)
- McNair W: **Manual for the Profile of Mood States.** Educational and Industrial Testing Service, 1971.
- Oswald TK, Rumbold AR, Kedzior SGE, *et al.*: **Psychological impacts of “screen time” and “green time” for children and adolescents: A systematic scoping review.** *PLoS One.* 2020; **15**(9): e0237725.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Prince M, Knapp M, Guerchet M, *et al.*: **Dementia UK: -overview.** 2014.
- Royal College of Psychiatrists: **Impact of the COVID-19 pandemic on hospital care for people with dementia: Feedback from carers/families and hospital leads for dementia.** London: Royal College of Psychiatrists, 2020.
- Vogl G, Ratnaik D, Ivancic L, *et al.*: **One click away? Insights into mental health digital self-help by young Australians.** Sydney: EY and ReachOut, 2016.
[Reference Source](#)
- Williamson EJ, Walker AJ, Bhaskaran K, *et al.*: **Factors associated with COVID-19-related death using OpenSAFELY.** *Nature.* 2020; **584**(7821): 430–436.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Witten E, Ryyanen J, Wisdom S, *et al.*: **Effects of soothing images and soothing sounds on mood and well-being.** *Br J Clin Psychol.* 2023; **62**(1): 158–179.
[PubMed Abstract](#) | [Publisher Full Text](#)