

# Sometimes a HUG is all you need

Providing emotional comfort for care home residents has been especially challenging during the pandemic. **Cathy Treadaway, Jackie Pool** and **Asa Johnson** evaluated a playful object called HUG to find out how it could help

**H**uman beings yearn for human contact and the health benefits of giving and receiving hugs have been well documented (Fredrickson 2014, Tanner 2017). By depriving so many of us of physical contact, the pandemic has both shown us how important it is and alerted us to alternative ways of providing emotional comfort. These alternatives may not be as good as the real thing, but they can definitely help make life feel better.

In 2018, we reported on HUG as part of an evaluation of a collection of comforting playful objects for advanced dementia care, designed by LAUGH researchers at Cardiff Metropolitan University (Treadaway 2018). This research, funded by the Arts and Humanities Research Council, investigated ways of improving quality of life for people living with advanced dementia. The outputs from the research included a series of playful objects designed to engage, comfort and bring pleasure ([www.laughproject.info](http://www.laughproject.info)).

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## The HUG: soft and comforting

HUG, now a registered trademark, has been one of the most successful of these playful objects and was selected as a finalist in the 2018 National Dementia Care Awards. It is a soft, comforting object, which contains a simulated beating heart and programmable electronics that can play a personalised playlist of favourite songs or sounds.

Its weighted arms produce the sensation of a human embrace and the soft form of the body shape is designed to trigger emotional memories of nursing a small child. The beating heart is intended to

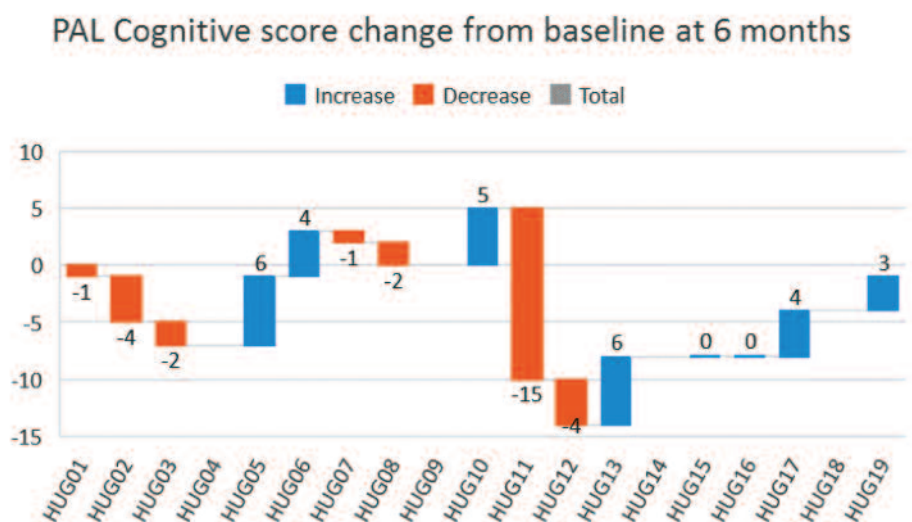


Figure 1



**Above: Sunrise team with HUGs: front (l-r) Jackie Pool and Phil Vale; back (l-r) Negin Meshkati, Sarah Jayne Evans, Michelle Malpas, Danny Langhorn, Sara Reading, Asa Johnson. Right: Sunrise residents and a care worker cuddle with HUG**



evoke the sensation of physical closeness with another person, which is often lacking for someone living in residential care, especially if they receive few visitors.

The prototype for HUG was developed for a lady who was on end of life care. Not only did it give her obvious pleasure, but also had a positive impact on her general health and overall wellbeing (Treadaway *et al* 2019). It led to further research funding from the Welsh Government for a partnership with Sunrise Senior Living and the NHS for a project called LAUGH EMPOWERED PSCI.

Our aim in this follow-up study was to discover whether the wellbeing produced by HUG, identified in the previous evaluation, could be corroborated and quantified with a larger cohort. In addition, the larger study provided real-life case studies relating to the product design in two contexts: residential care and hospital. We wanted to use this data to improve the design in order to commercialise HUG and so make it publicly available.

### Evaluation method

We recruited 40 care home residents and hospital patients to take part in the project. Here, we will report only on part of the project, in which 20 residents with dementia at Sunrise's care home in Cardiff participated. The home has 59 residents, 22 of whom live in the "Reminiscence Neighbourhood" and in most cases were given a HUG.

Every Sunrise community features one of these Reminiscence Neighbourhoods, a

specialised care setting that is devoted entirely to people with dementia or other forms of memory loss. These neighbourhoods are designed to provide comfort, security and life enrichment in an engaging and inviting environment. Resident wellbeing is a priority, involving the use of stimulating and comforting objects as well as activity plans for every resident to engage in meaningful occupation. The HUG evaluation fitted well with this ethos.

Twenty prototype HUGs were made prior to the study with the help of a small group of women who were trained by the research team in small batch textile manufacturing (Taylor *et al*, in press). The prototypes were handed over to Sunrise of Cardiff at a launch event, which gave the researchers an opportunity to get to know the residents, staff and families.

The study started in May 2019 and ran for a year. The HUG prototypes were given to individual residents in the Reminiscence Neighbourhood over a phased period of four months. A team of 26 care staff, led by reminiscence coordinator Danny Langhorn, assisted in the project.

Collection of baseline and outcome measures relied on the Pool Activity Level (PAL) Instrument (Pool 2012). This assessment and profiling tool was developed by co-author Jackie Pool to inform the provision of appropriate activity-based care for people with cognitive impairments by determining levels of cognitive and functional ability. She created a modified version of the instrument specifically for this project, in

addition to which an adapted Bradford Dementia Wellbeing Profile was deployed to help understand HUG's effect on residents' quality of life and how they were faring psychologically and socially.

We collected data before each resident had been given a HUG, then at three months and six months after they had received it, while also carrying out qualitative interviews with care staff and family members. This qualitative mixed method approach enabled us to investigate whether findings from the initial LAUGH research could be corroborated and also to provide vital feedback on the design specification and usability of HUG. Residents retained their HUGs following completion of the evaluation.

Staff first assigned one of four levels of ability – or "activity levels" – in using the HUG to each resident, having assessed them against the nine activity domains set out in the PAL Checklist. The resulting PAL Profile gave an overview of the way that a person best engaged with the HUG and how to create a facilitating environment. The four activity levels, as named by the PAL Profile, were: planned

(numerical score = 4), exploratory (3), sensory (2), and reflex (1).

Although there was value in assigning an overall activity level to each resident, we were also able to determine finer changes by adding up numerical scores from each of the nine activity domains. Score ranges could therefore vary between residents from a minimum of 9 to a maximum of 36.

## Results

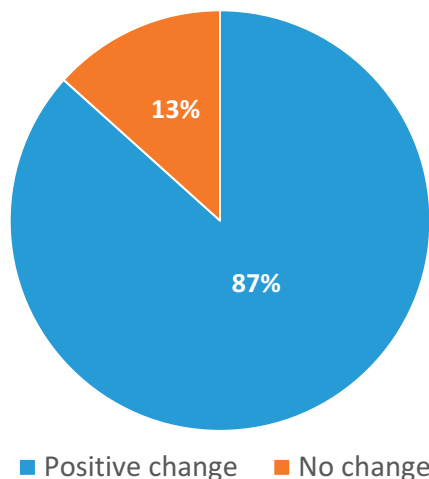
Our analysis of the findings found that, while six residents overall improved by one activity level (e.g. from “reflex” to “sensory”) after three months, nine residents overall improved by score. After six months, five residents had improved by one activity level while six residents had improved by score (see figure 1, p32).

These results are significant, particularly in the context of a neurodegenerative disease in which the assumed trajectory of a person is towards reduced activity and limited cognitive response. Where dementia is concerned “no change” over the six-month evaluation might be perceived as positive, given that it suggests no deterioration in the person’s condition. Findings from the adapted Bradford Wellbeing Profile indicate that wellbeing improved for 87% of residents who had a HUG for six months (see figure 2, right).

Although not every resident benefitted from using HUG, the overall findings from the study confirm that it can play an important role in improving residents’ quality of life and maintaining a person’s connection and communication with the world around them.

Staff were encouraged to complete a HUG engagement plan and to use their knowledge of residents to specify whether the activity should be accompanied by music, length of session, preferred seating arrangements, and top tips for promoting engagement such as what to say to the resident. Further work is now needed in order to fully understand the effect of care staff on our findings, including the ways in which HUG was introduced to residents and how it was used in the care environment.

The human story behind this research has been beautifully narrated and captured through the words of relatives documented during qualitative interviews with the university researchers. One of these stories features in an interview with Alison Webb and her mother Margaret that was filmed at Sunrise Cardiff by the BBC and can be found at [www.bbc.co.uk/news/uk-wales-50237366](http://www.bbc.co.uk/news/uk-wales-50237366). In the TV interview, Alison comments on how using HUG seems to have “brought my mum back”.



**Figure 2: Wellbeing score for people who had a HUG for six months**

She also explained to researchers:

*She is just in a much better place and I mean she wasn't sad before, but she was very, very distant and sometimes you would see glimpses of my mum but now I'm seeing them, a lot more of them... To see her coming back is just amazing... just brilliant!*

HUG was designed to provide the reciprocal sensation of both giving and receiving a hug. Having something to nurture, love and caress seems to fulfil a deep human need and the emotional benefits of gentle stroking have been evidenced in research (Tai *et al* 2011, Tanner 2017). One relative commented on her mother’s response to HUG:

*She finds it very comforting, I'm not sure what her perception is. I know she talks to it, and she kisses the head and she strokes it...she absolutely loves it. Honestly when I saw her with it the first time, I cried, cos she was getting so much comfort from it and I just can't praise it enough.*

The simulated heartbeat seems to be a significant aspect of the design and provides a soothing sensation that encourages residents to hold on to HUG. A member of care staff observed that when a resident touched one, “they automatically start to bring it closer because of the heartbeat.”

According to Danny Langhorn, loneliness and dissociation from the everyday world is a major stress factor for people with dementia. He advocates using HUG with residents “when they’re feeling lonely because it just brings them that comfort [they need]”. The team at Sunrise Cardiff also noted that it stimulated greater interaction and communication, not only with staff and relatives but also between residents. As Danny put it:

*They will share and interact together with it... It's great if it brings about connections,*

*conversation, whether it's with you... and especially with other residents, as that's pretty amazing, because often they will be very much within their own world rather than a shared world.*

Improvements in residents’ posture were observed, body position sometimes becoming more upright when cuddling a HUG. Where residents had a tendency to fall forward, it helped restore posture and alleviate the associated pain. The internal electronics can also accommodate people’s personalised music playlists, which users found soothing and pleasurable.

The specification for HUG will be adjusted in the light of the feedback we have collected during the project with the aim of producing a marketable product available to all. With this in mind a new business, HUG by LAUGH, has been established with the support of Cardiff Metropolitan University and assistance from Alzheimer’s Society, which is championing the product through its Accelerator Programme.

More information about the product and the research can be found on [www.hug.world](http://www.hug.world) where it is also possible to register interest and keep up to date with developments.

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