

Research approach

Understanding the impact of brain in Hand

Brain in Hand has been designed to improve outcomes and save money. Since its launch, we have engaged with researchers, commissioners, end users, and the academic community to understand the impact it makes and its acceptability to users.

Research on digital support systems in the area of autism and mental health is nascent. The evidence base is growing, but there is much that is not known and, in many regards, traditional research methods are not suitable.

Mindful of these challenges, there are three principles that inform research and development at Brain in Hand:

- (1) Make the most of existing published research to inform product development
- (2) Be nimble: make the most of every opportunity to gather data and get insight on how Brain in Hand is working
- (3) Be open to collaboration with partner organisations and academic institutions.

Our research programme is informed by the NICE Evidence standard framework for digital health.

We have strong evidence for Tier 2 of the standard and are working towards Tier 3a.

We have documented our thinking about the mechanisms behind Brain in Hand in this white paper 'How Brain in Hand Works'. Our understanding of how Brain in Hand works is constantly evolving, so we want and expect this document to change in light of new insights and feedback from end users, funders, and researchers.

You can download our white paper and further research documents at www.braininhand.co.uk

Research and evaluation studies

When Brain in Hand was in the pilot stage, two invaluable studies were conducted to understand if a digital support system would be acceptable to autistic people and the impact it could have. The first study of autistic adults was undertaken by Devon Partnership Trust in 2013. It reported that over three quarters (77%) of users felt the system had a very positive impact on their lives: for example, by reducing anxiety and improving the ability to self-manage. BiH was partly attributed with enabling a transition from residential to independent living, and with a reduction in the number of weekly contacts that a user had with clinical support; this was early evidence that Brain in Hand could achieve cashable savings for services. This was followed by a study of autistic students by the National Autistic Society in 2015, which found that half of users reported being better able to implement strategies for coping with difficulties; a similar proportion reported increased confidence.

As a result of interest in Brain in Hand's suitability for people with an Acquired Brain Injury (ABI), we supported a study led by Professor das Nair at Nottingham University. The study, which used a single-case experimental design to examine the acceptability and impact of BiH on a cohort of adults with ABI, showed that BiH has potential to ease the burden of care on carers and to reduce the number of hours of care provided, as well as to help users make progress towards their goals and increase their levels of participation (for example, in social activities, work, or education). The research was conducted by Dr Jade Kettlewell for her PhD, and included a fascinating systematic review of the evidence of smart technologies to improve outcomes in adults with ABI.

More recently, we have worked closely with local authority partners to track how the benefits Brain in Hand brings to users translate into financial benefits for health and social care services. Work with Kirklees Council tracking a cohort of users over one year, and their use of services, indicated that savings of up to £6,500 per annum for a single user are possible. Direct cost savings come from reduced support with travel, reduced contact with clinical staff, and reduced use of day care services.

Collaborations

We have three exciting academic collaborations currently underway. First, we have a long-standing relationship with Dr Jenny Limond, Consultant Clinical Neuropsychologist and Research Supervisor for trainee clinical psychologists at Exeter University. One of her students is looking at Brain in Hand as a tool to support executive function coaching in young people. Second, we are working with data scientists from the Alan Turing Institute at Exeter University. They are applying exploratory techniques to the large dataset created by user interactions with the Brain in Hand system. This work is the foundation to understanding the predictive potential of the data, which would inform development to the product to help users anticipate and prepare for stressful events. Finally, we are delighted to be working with Professor Marios Adamou, who is the academic advisor to the deployment of Brain in Hand in the autism diagnostic pathway, as part of a research project funded by NHS England.

At Brain in Hand we respect and value research and are committed to using evidence to improve the product for our end users and clients. We also hugely value the involvement of our end users in the product development process; to this end, we use multiple methods (phone interviews, observations, surveys) to routinely collect feedback and actively encourage users to report bugs and suggestions for product improvement. To help us understand the wishes, needs, and perspectives of our users, we have engaged autistic consultant and vlogger Connor Ward to advise on user engagement and the creation of a user panel for product development.

Studies

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For these study papers email us at:
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