Digital Health & Care Innovation Centre

Digital Mental Health: Findings of a desktop horizon scan for Global Leaders & digital innovation opportunities

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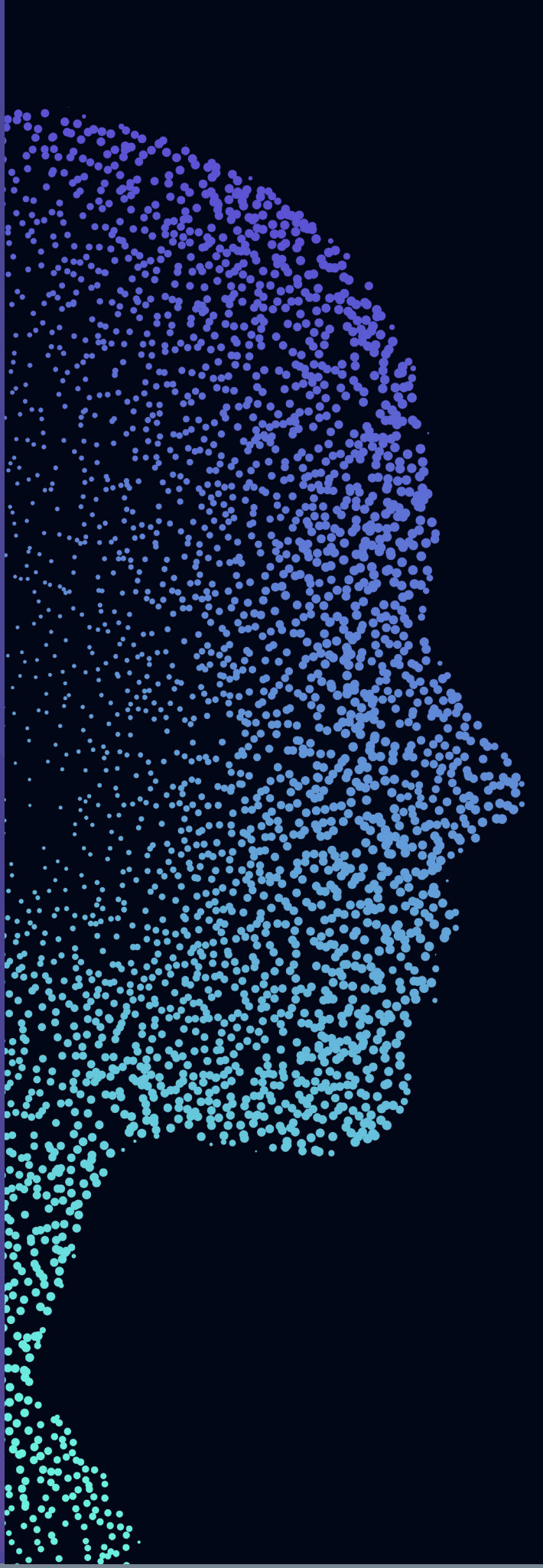
DHI supports innovation between academia, the public and third sectors, and businesses in the area of health and care.



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INNOVATION SCHOOL THE GLASGOW SCHOOL OF ART
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Table of Contents

Introduction

Scotland has had some success in introducing digital innovation in mental health through the national adoption of computerised Cognitive Behavioural Therapy (cCBT) and some software applications to support aspects of mental wellbeing e.g. Sleepio. To further address key challenges contained within the 'Mental health transition and recovery plan' (2021), a national Digital Mental Health Programme Board has been initiated.

As part of its portfolio of activity, the Board aims to use lessons learned from Scotland's previous innovation experiences, to identify additional digital innovation opportunities to support the recovery plan [1]. A Digital Mental Health Innovation Cluster is being introduced as part of this activity.

In 2021, the Digital Health and Care Innovation Centre (DHI) received funding from the Scottish Government to develop and lead the innovation cluster. The funding is being used to establish a post and facilitate activities/events to support the identification, development and spread of small, successful digital, innovation projects in mental health in Scotland. The cluster will build collaboration opportunities and knowledge exchange between academic, business, clinical, practitioners and end-user sectors.

The aim of this report is to provide "a horizon scan" of global leaders and best practice in digital mental health, and to identify new and emerging technologies that may contribute to the work of the digital mental health innovation cluster. The DHI has previously researched digital mental health practices in the UK for the purpose of supporting national activity, including early information on the NHS England Global Digital Exemplars programme, MoodCafe, use of Near Me/Attend Anywhere video consulting and a large number of applications that can be viewed in the 'Review of Current Use of Digital Solutions for Mental Health' report (2020) [2]. Solutions identified in this previous research are not included in this report to avoid duplication and to focus more on the digital innovation aspect.

This report contains;

- the methods used to develop this document,
- a definition of digital mental health & best practice,
- an overview of current practice,
- a summary of potential global leaders in digital mental health,
- and identifies some emerging opportunities for digital mental health innovation.

Method

The findings of this report were identified through desktop research using standard online search engines, including Google, Google Scholar and PubMed, and through search functions within NHS and third party (digital technology company) websites. Searches included key phrases such as 'digital mental health', 'best practice', 'world leader', 'digital health market', and 'mental health technology', these were paired.

These searches utilised search engine functions 'AND', 'OR', and included the quotation search functions to guarantee that results contained the exact criteria of the various searches. The purpose of this form of research is to identify and present a high-level overview of publicly available information, it does not include any in-depth cost-analysis, private or local reports, or a review of technical specifications.

A limitation of the methodology used is that all searches are limited to publications released in English, which could have a significant impact on the search results.

Regions included in the report have previously been identified by the DHI as examples of best practice in digital health outside of Europe. The European region itself did not yield results that differentiated from the current provision of digital mental health services within Scotland and the UK, with many results already included in the previous report.

Definition of digital mental health & best practice

When discussing digital health in this report it will include any form of device, service, clinical management platform, mobile application or process that utilises digital technologies in the prevention, support, management and/or treatment of mental health.

Best practice will be determined as solutions that are accepted or prescribed as the most correct and/or effective as recognised by official clinical bodies and governance.

Current Practice

Across all aspects of healthcare, the field of mental health may be the ripest for digital transformation. The predominant verbal or conversational nature of mental health care allows for this to be more easily provided remotely through digital technology. In recent years, there has been a rapid growth in the number of digital tools for mental health and care services in the form of software applications.

However, many of these solutions have not been proven to be clinically effective [2]. Whilst these applications are publicly available with some included in the UK NHS app library, the onus of evidencing their efficacy is on their developers, with the NHS bearing no liability for their use or effectiveness. Very few solutions appeared to meet the standards for inclusion in the NHS app library, suggesting that the field of digital mental health is still in its infancy [3].

During the COVID-19 pandemic, many mental health services, like all health and care services, were forced from face-to-face delivery into virtual/online delivery during a tight timeframe. While this could be seen as a positive opportunity for digital innovation, the majority of current approaches and tools used in digital mental health appear heavily reliant on deploying traditional methods of treatment within a new medium [4].

These approaches are often digitised versions of current approaches e.g., transitioning from in person or analogue (i.e., tele-communications) to online Cognitive Behavioural Therapy (CBT) video-enabled counselling sessions, on-line peer support groups. This approach may not secure additional opportunities for citizen empowerment where patients can better engage with their own health and care, or support transformational practice.

The following framework (figure 1) has been identified as a useful approach for understanding and describing the various types of digital technologies which currently exist within the field of digital mental health.

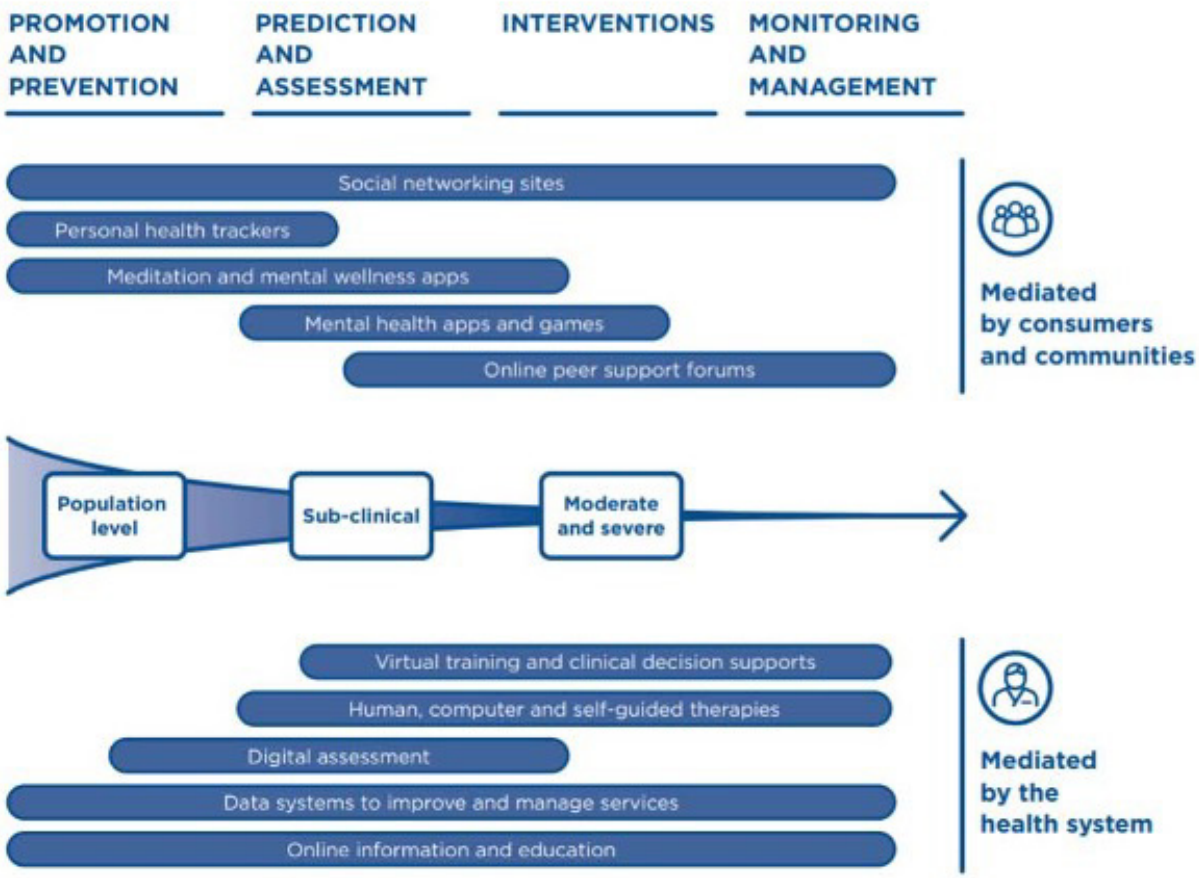

Figure 1. A framework for understanding the different types of digital technologies that exist within the field of digital mental health [4].

Global Leaders?

From an initial analysis, there appear to be small number of global digital mental health exemplar services and organisations that promote a range of digital mental health solutions within their given region/country.

Australia

Australian digital mental health services refer to solutions that are delivered through online and mobile platforms and includes remote health monitoring type solutions, these being solutions that provide healthcare remotely via means of telecommunications technology. These include mobile applications, online support groups, chat solutions (including email) and crisis counselling via telephone.

All solutions endorsed by the Australian Government can be found through the 'Head to Health' online resource that offers search functionality similar to the UK's NHS app library. This includes approximately 687 Australian digital mental health resources including their own evidenced based mental health and wellbeing resources [5]. Solutions and resources have numerous target groups including [6]:

- Carers and carers services
- Child and youth services
- Indigenous and other Cultural services
- LGBTI services
- Older adult services
- Pregnancy and parenting services
- Veteran services

Tackling multiple conditions within these demographics including [6]:

- Anxiety
- Bipolar Disorder
- Depression
- Eating disorders
- Grief and loss
- Relationships
- Stress/Wellbeing
- Substance use and addiction
- Suicide prevention
- Trauma

While not an exhaustive list of what is available, the solutions listed in Table 1 provide some insight into what is available within Australia as Government and/or Medicare (Australia's Universal health insurance programme) approved solutions for use in mental health services.

Solution	Desription
Beyond Blue Beyond Now	An app and online platform that involves the creation of a safety plan that the user can work through when they are experiencing suicidal thoughts, in distress or in crisis. Beyond Blue offers the Check-in app 'Youth Beyond Blue' that helps coach younger users to provide peer support. Additionally, Beyond Blue offers a number of forums to support users with their given diagnosis.
OCD Stop! programme	A free online programme to help users manage their OCD.
This Way Up	An online platform that provides over 15 courses for a range of mental health conditions, which have been designed by clinical psychologists, psychiatrists, researchers and web technicians. Some course examples include: - TeenSTRONG: therapist guided course for young people coping with worry or sadness. - Mixed Depression and Anxiety Course: Self-directed or therapist led online course for managing anxiety and depression. - Mindfulness CBT Course.
Depression Online Programme	An online programme designed to help users learn skills and strategies to manage depression and improve their quality of life. Depression Online includes information, videos, exercises, and optional support from a therapist via email, chat or video.
My QuitBuddy App	The My QuitBuddy App was developed to help users quit smoking. Users can choose when to quit and set their own goals. The community forum feature allows users to share success stories and celebrate milestones.
Butterfly National Helpline Online Chat	The Butterfly Online Chat is a service that provides support for those experiencing body image and eating concerns, or an eating disorder, including for their carers, health professionals and those concerned about someone close to them. Online chat can provide support, brief counselling, and treatment referrals.
1800RESPECT Online Counselling	1800RESPECT is a confidential online counselling, information, and referral service available 24 hours a day, 7 days a week. The service is for those experiencing the impacts of sexual assault, domestic and family violence.

Table 1. A list of example digital mental health interventions supported by the Australian Government [5 & 6]

Canada

Similar to Australia and the UK, there are many options for digital mental health solutions in Canada. The Canada Health Infoway, in partnership with the Centre for Addiction and Mental Health, has pooled a number of resources for Canadian health organisations to support decisions on implementing digital mental health tools [7]. A number of these resources list available digital mental health solutions in a similar manner to the NHS App library and Australia's 'Head to Health'. Most solutions are publicly available on iOS and Android App stores and across various regions and nations.

During the COVID-19 pandemic, a small number of solutions have been identified in Canada as promising digital tools that could greatly promote mental health and wellbeing. These include:

Solution	Desription
MindBeacon	MindBeacon is advertised as a private digital space for users to access a wide range of mental health support. MindBeacon aims to act as a virtual therapy clinic that provides [8]: • Short-term counselling support via instant messaging to improve users' wellbeing. • Guided Cognitive Behavioural Therapy (CBT). • Live online sessions with social workers, psychotherapists, or psychologists. • Access to a 24/7 Crisis Text Line. During the COVID-19 pandemic MindBeacon was made freely available to the public via referral [8].
WellCan	WellCan is a free app that provides wellbeing resources to help users develop coping methods and build resilience to mental health and substance abuse concerns during the COVID-19 pandemic. This includes providing a toolkit to support users to adapt to remote work, advice on effective physical distancing and how to use technology to combat loneliness when isolating, as well as access to articles and information surrounding managing mental health conditions [9].

Table 2. Examples of Canadian digital mental health interventions [7 & 8]

Systemic reviews have shown that there is still a limited amount of evidence to support the efficacy and clinical validity for digital mental health solutions, with only a small number undergoing an RCT during their development and a noticeable lack of cross-validation [10]. This is widely mirrored across the field of digital mental health [11].

United States of America (USA)

In the USA, digital health solutions for patients can either be privately purchased/downloaded by the consumer or are provided via the patient's healthcare provider. The solutions available to patients are dependent on those included within their private health insurance policy.

Kaiser Permanente

Kaiser Permanente only provides its customers with access to mobile applications that have been evaluated by their clinicians and meet their safety and privacy standards. They provide two digital mental health apps [12]:

- **Calm:** a meditation and sleep application that provides users with 100+ guided meditations and video lessons on physical and mental exercises to improve mental resilience and sleep.
- **myStrength:** a personalised programme that supports users in changing their behaviours through:
  - coping tools;
  - community support;
  - mindfulness and meditation techniques;
  - personalised programmes for managing depression, stress and anxiety;
  - goal setting and emotional tracking tools.

BlueCross

BlueCross is an umbrella organisation for multiple healthcare providers that provide health care for almost 1/3 of America. BlueCross offers different digital solutions in different states.

Capital BlueCross, based in Pennsylvania, offers customers access to the NeuroFlow app [13]. NeuroFlow is described as a secure application that support users in managing their health and wellbeing. Users can:

- perform self-care activities;
- track their mood, sleep, stress and pain;
- access the app in any region at all times;
- earn rewards to promote adherence.

BlueCross Anthem, in Missouri, provides users with access to the LiveHealth telehealth app. The LiveHealth app allows users to have video calls with their medical doctor, psychiatrist, or psychologist [14]. As more states provide access to LiveHealth, BlueCross advise it aims to drive down costs of mental healthcare for its customers.

Veterans Affairs

The United States Government's Department of Veterans Affairs (VA) offers veterans, active military personnel, their dependents and their caregiver's access to the My HealtheVet online health care portal [15]. Its goal is to provide its users with all-encompassing online platform to manage their health and care. The platform provides users with the ability to [15]:

- Refill and track their prescriptions
- Securely communicate with their health and care team via email
- Schedule, track and receive reminders of VA medical appointments
- View, print or download their lab results, medical notes, images, and other health information
- Access their personal health record to record, track and store their personal health information from other health care providers
- Access a trusted online medical library

In addition to these services the VA offers a variety of mobile apps for users to manage their health and wellbeing. This includes [15]:

- PTSD coach: a mobile and online platform that support those with post-traumatic stress disorder (PTSD). The app provides users with education n on PTSD, information on professional care, a PTSD self-assessment and access to support and tools to help manage PTSD. The app is available on both the App store and Google play

- VA Mental Health Checkup for Veterans: an app for veterans to monitor, assess and access information for mental health conditions. Allowing users to evaluate symptoms related to the mental health condition they would like to treat.

- Mindfulness Coach: the app was developed to help users learn to practice mindfulness via a gradual, self-guided training program. It offers a library of information about mindfulness, audio-guided mindfulness exercises. As well as a catalogue of additional exercises and goal setting and tracking features.

- Insomnia Coach: the app was created to help users manage their insomnia. Based on cognitive behavioural therapy the app provides:
  - Guided weekly training,
  - Access to a sleep coach,
  - An interactive sleep diary, and
  - 17 tools to help users get their sleep back on track

- COVID Coach: this app was designed to support users' self-care and mental health during the COVID pandemic. The app provides
  - Education about coping during the pandemic
  - Tools for self-care and to improve emotional well-being
  - Trackers to check your mood and measure your growth toward personal goals
  - Graphs to visualize progress over time

Emerging Digital Innovations

Artificial Intelligence (AI)

The growing demand for mental health services and the limitations in resources to deliver these face-to-face has created more opportunity to introduce digital solutions in the field, including the use of AI. In May 2021, Dawoodbhoy et al., examined how the application of AI was used to improve patient flow in NHS mental health services [16].

Their research highlighted the complex nature of mental health care that digital solutions can address, such as the need for personalised, flexible care plans. The research also highlights tools that are already in use in supporting patient flow at the NHS.

These are non-digital but emphasise the opportunities for the application of AI in health and care, which are summarised in Figure 2 below. Again, it is important to note that these are labelled as possible uses of AI, as currently the use of AI in mental healthcare appears to be limited to using chatbots and language/voice analysis through Natural Language Processing (NLP) technologies [17].

Figure 2. The possibilities for AI in health and care (Dawoodbhoy *et al, 2021*) [16]

Overall, as concluded by Dawoodbhoy et al (2021), AI offers many promising opportunities for mental health and care services, however greater investment and infrastructure development is required to deliver emerging clinically valid solutions. Additionally, further research is required to identify and evaluate examples of these solutions working within a clinical environment.

Digital Phenotyping

The use of AI in digital mental health could be greatly expanded through the use of 'Digital Phenotyping', a term coined by Torous et al (2016) that refers to the "moment-by-moment quantification of the individual-level human phenotype in-situ using data from smartphones and other personal digital devices" [18]. This means using mobile devices as digital nets to capture specific data to help predict, diagnose and/or treat mental health condition. Several studies have examined the use of digital phenotyping in mental health care and have shown that digital phenotyping shows promise in remote monitoring of mental health [19].

However, it is important to view this research in the right context. In the research setting, study participants are volunteers from outside the clinical setting, who are fully aware of the appropriate ethical procedures that are in place and have consented to these. If wider use of digital phenotyping is to be implemented a larger discussion on the ethics of using digital phenotyping needs to take place [20]. This need for stringent ethical consideration is of more importance in digital mental health as technology will be applied to vulnerable and/or at-risk individuals who may not have the ability to provide informed consent for the implementation of digital phenotyping in their care. While this is a concern for all aspects of digital mental health, digital phenotyping involves the use of very personal and sensitive data.

Gamification

Gamification is the application of game design techniques and methods within non-game environments. It is an emerging domain in the field of digital health, with the most commonly used features in digital mental health being levels/progression feedback, points/ranking/scoring, achievements/awards and narratives [21].

These features aim to make the use of digital solutions a more enjoyable, rewarding and engaging experience, and to boost adherence to digital mental health programmes. Gamification is presumed to enhance motivation via the satisfaction of basic psychological needs of autonomy and socially mediated reinforcement [21]. Figure 3 outlines the advantages gamification can bring to digital mental health.

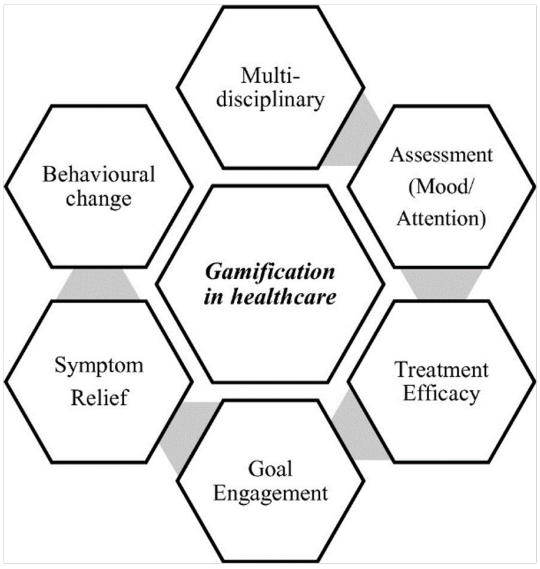

Figure 3. The possible advantages gamification can bring to the digital mental health domain [22].

While the primary application of gamification has been applied in physical health interventions, a small number of studies have examined the impact of the incorporation of gamification in digital health solutions. There is an emerging evidence base for the use of gamification to treat mental health conditions such as depression and anxiety [21].

These studies have found that gamified solutions are superior to their non-gamified versions in terms of reducing anxiety and increasing adherence to digitalised therapies [21]. These techniques have yet to appear in the mainstream of digital mental health. This could be due to controversial aspects of embedding gaming elements into mental health interventions [22].

Similarly, to the application of AI within digital mental health, gamification is likely to be embedded throughout future solutions but there is currently insufficient evidence to determine best practice in the use of gamification within the field of digital mental health.

Virtual Reality

Virtual reality (VR) utilises interactive, computer simulated environments via headset. This enables the creation and control of exposure to simulated real-world environments for the purposes of mental health assessment and treatment.

VR allows clinical staff to capture real-time data on how patients respond to stimuli in controlled environments and provides them with insight into how mental health conditions may present in the real world.

To date the majority of research into VR exposure predominantly focussed on anxiety disorders and PTSD [23]. A small number of studies have examined the use of VR in psychiatric disorders and have found that VR may be effective in treating depression, schizophrenia and eating disorders [23].

However, when VR has been compared to traditional care methods there is little evidence to suggest that VR has superior efficacy [23]. Furthermore, the small sample sizes used in these studies means the economic effectiveness and clinical validity of VR in mental health has yet to be established [23]. A major limiting factor for the implementation of VR in digital mental health is the current hardware costs required to implement VR solutions and the socioeconomic inequality concerns these costs present to health and care services [24].

VR could potentially play a key role in the future of digital mental health, especially in regard to training and education. This would require greater understanding of its costs and benefits. VR is unlikely to play as much of a role as AI or Gamification as they are likely to prove more cost-effective moving forwards.

Conclusion

The solutions identified as part of this short, desktop analysis of publicly available information from various international countries largely fall within the categories outlined in the framework in Figure 1. No country, including Australia, Canada and the USA, appeared to stand out as exemplars of world leading best practice, instead every country appeared to show that the primary provision of current digital mental health solutions were digitised versions of traditional services.

Research into European digital mental health resulted in the same types of solutions as identified in previous DHI work. Research into Asian regions showed that while some solutions exist, mental health, and in turn digital mental health, would benefit from major innovative change in the immediate future. This indicates that the pressing issue facing digital mental health is not the lack of available solutions but rather a lack of clinically validated fully integrated services or infrastructures that can incorporate separate digital solutions into clinical systems and patient interfaces along with an exploration of what digital innovation could bring to mental health.

The research performed in the production of report was unable to identify digital solutions that could be definitively labelled as being best practice or services operating as world leaders in digital mental health. The solutions detailed the DHI's "Review of Current Use of Digital Solutions for Mental Health digital solutions currently in use within the UK" list the most utilised digital solutions in our own region but again these may not fit the definition of "best practice" as they are simply "current practice" [3].

The field of digital mental health is still predominantly made up of numerous digital solutions, applications, and services that exist within disparate silos. What constitutes as world leading or global best practice has yet to emerge but will likely include solutions that can integrate with patient management platforms as well as other digital solutions.

Ideally these solutions would simultaneously involve AI-based features and utilise gamification techniques, if appropriate. While the lack of "best practice" could be seen as a negative, it opens up the opportunity for Scotland to step up and set the standard for what this best practice can be.

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Solution	Desription
Be Mindful	Be Mindful is an online course that aims to reduce stress and anxiety using mindfulness-based cognitive therapy. More information can be accessed here: https://www.nhs.uk/apps-library/be-mindful/
Beat Panic	Beat Panic is a mobile application designed to guide users through panic attacks or raised anxiety levels. It uses a series of soothing coloured flashcards with messages designed to help users in a gentle manner. More information can be accessed here: https://www.nhs.uk/apps-library/beat-panic/
Big White Wall	Big White Wall is an online community for people who are stressed, anxious or feeling low. The service provides an active forum with 24-hour support from trained professionals. More information can be accessed here: https://www.nhs.uk/apps-library/big-white-wall/
BlueIce	BlueIce is an evidence-based app that helps young users manage their emotions to help reduce urges to self-harm. It hosts a toolbox of evidence-based techniques that reduces distress, a mood diary and provides automatic routing to emergency numbers when required. More information can be accessed here: https://www.nhs.uk/apps-library/blueice/
My QuitBuddy App	The My QuitBuddy App was developed to help users quit smoking. Users can choose when to quit and set their own goals. The community forum feature allows users to share success stories and celebrate milestones.
Calm Harm	Calm Harm is an app that is designed to help users resist or manage the urge to self-harm. It is based on the principles of dialectical behaviour therapy, a talking therapy that can be effective with mood disorders. More information can be accessed here: https://www.nhs.uk/apps-library/calm-harm/
Catch It	Catch It aims to help users manage their feelings like anxiety and depression. Catch It utilises CBT to help users change the way they think and feel about things. More information can be accessed here: https://www.nhs.uk/apps-library/catch-it/
Chill Panda	Chill Panda teaches users to relax, manage their emotions and improve their wellbeing. The app measures the users heart rate and suggests tasks to suit their state of mind. These tasks are designed to relax the user. More information can be accessed here: https://www.nhs.uk/apps-library/chill-panda/
Cove	Cove allows users to create music that captures their mood in a more creative mood journal. More information can be accessed here: https://www.nhs.uk/apps-library/cove/
Cypher	Cypher acts as an anonymous peer-to-peer social network, allowing users to share feelings an secrets, while providing and receiving support to and from others. More information can be accessed here: https://www.nhs.uk/apps-library/cypher/

Solution	Desription
distrACT	The distrACT app provides users with fast, easy and discreet access to information and advice about self-harm and suicidal thoughts. The content within the app has been created by doctors and experts in self-harming and suicide prevention More information can be accessed here: https://www.nhs.uk/apps-library/distract/
Feeling Good: positive mindset	Feeling good is a CBT base application that consists of a series of audio tracks that are designed to help users build confidence, energy and a positive mindset. More information can be accessed here: https://www.nhs.uk/apps-library/feeling-good-positive-mindset/
Ieso	Leso is an online course that uses instant messaging for people with mental health problems. It uses CBT to help users change how they think and feel. More information can be accessed here: https://www.nhs.uk/apps-library/ieso/
MeeTwo	The MeeTwo app provides a secure forum for teens who want to discuss issues that affect their lives with their peers and mental health experts. More information can be accessed here: https://www.nhs.uk/apps-library/meetwo/
My Possible Self: The Mental Health App	The My Possible Self app provides learning modules to help users manage their fear, anxiety and stress. Additionally, it contains a mood tracker for users that highlights the activities, people and places that affect the users mood. More information can be accessed here: https://www.nhs.uk/apps-library/my-possible-self/
SilverCloud	SilverCloud uses CBT in online courses to help users manage their stress, anxiety and depression. Users wok through a series of topics that are selected by a therapist. More information can be accessed here: https://www.nhs.uk/apps-library/silvercloud/
Sleepio	Sleepio is an online sleep improvement programme that is clinically proven to improve several aspects of sleep. It is a CBT based programme that teaches users cognitive techniques and behavioural strategies to improve sleep without the aid of medication. More information can be accessed here: https://www.nhs.uk/apps-library/sleepio/
Sleepstation	Sleepstatiopn is a 6-week online course for people struggling with their sleep. It is a user tailored course and provides expert advice ad support throughout the course. More information can be accessed here: https://www.nhs.uk/apps-library/sleepstation/
Stress & Anxiety Companion	Stress & Anxiety Companion uses CBT to help users handle stress and anxiety on-the-go. Users can access breathing exercises, relaxin music and games that are designed to calm the mind. More information can be accessed here: https://www.nhs.uk/apps-library/stress-anxiety-companion/
Student Health App	The Student Health App provides users with access to over 900 pages of reliable health information. It is available both on and offline so that content is always available. More information can be accessed here: https://www.nhs.uk/apps-library/student-health-app/

Solution	Desription
Thrive	Thrive is a game-based app that helps users prevent and manage their stress, anxiety and related conditions. More information can be accessed here: https://www.nhs.uk/apps-library/thrive/
Bee Appy App	Developed for younger users Bee Appy provides top tips to take control of their emotional wellbeing. It allows users to track and monitor their mood over time.
Elefriends	Developed by the mental health charity Mind, Elefriends is a supportive community where users can share their experiences and listen to and learn from others.
Five ways to wellbeing	Five ways to wellbeing offers a practical way to help users feel and function better in the world. It allows users to set activities to help them improve their wellbeing and track their own progress at their own pace.
For me app	Available only on iPhone, the For me App was developed by Childline to provide all of its services in application form.
SAM app	The SAM app allows users to understand and manage their anxiety.
SAMH Know where to go (for iphone only)	SAMH Know where to go is a guide that provides users with the information and tools to address any mental health issues they may be dealing with.
Stressheads	Sleepstatiopn is a 6-week online course for people struggling with their sleep. It is a user tailored course and provides expert advice ad support throughout the course. More information can be accessed here: https://www.nhs.uk/apps-library/sleepstation/
STOPP	The STOPP App utilises CBT practices to help users address their stress, anxiety, depression, negative thinking, over or under-eating, drinking, smoking, gambling, aggression, self-harm and/or other unhelpful habits.
TrueColours	TrueColours is an application that enables users to monitor their health throught texting or emailing simple health-related questions. Answers are recorded and can be displayed online, or printed out, by both users and members of their care team. The TrueColours development team are working with other specialists in innovation and health and care to introduce other patient reported outcome measures to the app [19].

Table 3. A list of solutions identified in the DHI's Review of Current Use of Digital Solutions for Mental Health [2]