From Enthusiasm to the Risk of Disillusionment: Young People's Experiences Using Digitally-Enabled Measurement-Based Care.

Carla Gorban, Min K Chong, Adam Poulsen, Ashlee Turner, Haley M LaMonica, Sarah McKenna, Elizabeth M Scott, Ian B Hickie, Frank Iorfino

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Abstract

Background: Measurement-based care (MBC) uptake is suboptimal in mental healthcare, limiting key opportunities to facilitate data-driven symptom monitoring and progress feedback. This misses critical opportunities for enhanced patient-clinician communication and early intervention.

Objective: To understand young people’s changing perspectives, engagement, and value-add of the digitally-enabled MBC over time.

Methods: As part of a randomised controlled trial, an added human support, the digital navigator (DN), provided technological and engagement assistance for young people to integrate an online platform (digitally-enabled MBC) as part of usual care. The DN conducted 118 semi-structured interviews with 73 young people (mean age 22.7 years, SD = 2.7) at baseline and 3-, 6- and 12-months follow-up visits.

Results: We found that the majority of the young people were enthusiastic about incorporating digitally-enabled MBC in care when they understood its potential to facilitate collaborative care with clinicians and enhance self-awareness about their mental health. Notably, the DN’s support was effective in fostering this understanding at the initial stage of implementation. However, it was evident that the lack of clinician involvement in MBC posed a risk of disillusionment to young people’s sustained engagement. As reported, clinician uptake of digitally-enabled MBC was poor, limiting its perceived value-add and sustainability.

Conclusions: Digital technology shows significant potential for implementing MBC into mental health care. Young people want to use digitally-enabled MBC in their care and DNs can facilitate implementation through ongoing engagement and technical support. However, successful MBC implementation depends on broader systemic factors, particularly clinician and service engagement. Future research should examine how to address these contextual barriers and optimise DN support for implementation and sustained engagement.

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From Enthusiasm to the Risk of Disillusionment: Young People's Experiences Using Digitally-Enabled Measurement-Based Care

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ABSTRACT

Background: Measurement-based care (MBC) uptake is suboptimal in mental healthcare, limiting key opportunities to facilitate data-driven symptom monitoring and progress feedback. This misses critical opportunities for enhanced patient-clinician communication and early intervention.

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Keywords: youth mental health; digital navigator; digital mental health; measurement-based care; health services research

INTRODUCTION

Youth mental health has emerged as a global crisis [1], with mental disorders affecting more than 1 in 10 individuals aged between 5-24 years and accounting for the highest disease burden in this age group [2]. Despite the widespread use of psychotherapies and pharmacotherapies, their overall effectiveness remains modest [3,4], highlighting the need to enhance personalisation and precision in treatment [5].

Measurement-based care (MBC) offers a promising solution by systematically collecting standard measurements to inform and guide mental healthcare. It involves two main components, routine collection and review of client-reported outcomes, to monitor progress, evaluate treatment plans and inform shared decision-making [6]. Digital systems have been introduced in services to facilitate of MBC use, increasing accessibility to multidimensional measures and assisting interpretation by visualising symptom progress[7,8]. Such digitally-enabled MBC demonstrated improvements for detecting at-risk clients [9,10], supporting client-clinician communication [11] and improving treatment engagement and outcomes [12-14]. Gvien the challenges associated with accurately predicting clients who are more likely to deteroriate in care [15], the iterative process of symptom tracking and review in MBC ensures that treatment is data-informed [16] and personalised to individuals' changing needs [17]. This is particularly beneficial for young people who often present with complex and heterogeneous symptoms that do not fit into specific diagnostic criteria [18,19].

Despite its potential, digitally-enabled MBC implementation in mental health services remains challenging. Meaningful engagement with the digital systems and complete integration of MBC into services have been demonstrated as crucial factors for success [20-22]. Yet, barriers to client, clinician and organisational uptake are complex, interdependent, and closely linked to service capacity, including demand, education, training and leadership support [23-25]. Further, conflicting reports exist on the feasibility and acceptability of digital tools. For example, while some clinicians perceive regular monitoring as overly time-consuming for their clients [26,27], a meta-analysis demonstrates high adherence and acceptability rates among people with severe mental illnesses [28]. This discrepancy, along with the suboptimal uptake of digitally-enabled MBC [29,30], indicate a need for a deeper understanding of factors that influence young people's experience and engagement, especially over time.

A potential solution to address these barriers is the introduction of a digital navigator (DN) role into health services [31]. A DN provides technical and engagement support in mental health services to facilitate implementation and adoption of digital technology. They are responsible for improving accessibility, helping services to integrate new digital systems into clinical governance, and enhancing client engagement through regular support [32,33]. Furthermore, a DN with lived experience can provide an added benefit of peer support, fostering trust and accountability for clients using digital tools in care [34].

Therefore, in this study, a DN conducted semi-structured interviews at four time points (baseline, 3-months, 6-months, and 12-months) to explore young people's evolving experiences, engagement, and perspectives on digitally-enabled MBC over time as well as their views on its value-add to care.

Methods

Study context

This study is part of a larger multisite 24-month randomised control trial of digitally supported, highly personalised, and measurement-based care [35]. The ongoing trial is being conducted at the University of Sydney's Brain and Mind Centre (Australia) and affiliated youth centres that treat young people with mental illnesses. Participant recruitment, screening for eligibility, and obtaining informed consent are facilitated by the trial research team, per the trial protocol published elsewhere [35]. This clinical trial was approved by the Human Research Ethics Committee of the Sydney Local Health District (HREC X22-0042 & 2022/ETH00725) and has been registered with the Australian New Zealand Clinical Trial Registry (ACTRN12622000882729).

Both treatment arms have access to the digital MBC system – Innowell – and receive ongoing support from a DN. Innowell is an online platform that seeks to promote better mental health outcomes by facilitating access to comprehensive multidimensional assessment and real-time results to inform clinical and non-clinical care options decision-making [36]. The DN role focuses on providing peer support to participants, aiding their understanding of how to use the platform for personalised and MBC. This includes motivating them to use Innowell, developing strategies to enhance their engagement, resolving technical issues experienced by participants, carers, and clinicians, and performing data collection.

Data collection

The trial protocol [35] details the full set of data items and collection processes (e.g., standardised clinical assessments, ongoing data collected via Innowell, etc.). Relevant data collected and analysed here includes research observations and field notes recorded by the DN during four 'study visits' with young people conducted at key time points: baseline, 3-, 6-, and 12-months. A final visit will occur at the trial's end (24 months). Study visits were initiated by a research assessor, i.e., a member of the research team who conducted clinical assessments with participants. After that, the DN had a brief follow-up discussion (approximately 5 minutes) with participants to provide ongoing support and complete data collection.

Box 1 details the discussion topics that guided the discussion between the DN and participants, and Supplementary Material 1 collates the most common questions asked by the DN. The discussion topics and questions were adapted to ensure a natural conversational flow and account for various other factors, including, for instance, a participant's current level of care, previous MBC experience, and mood. Study visits were conducted in person, over the phone, or via Zoom teleconferencing software, and ranged between 5 to 30 minutes. Multiple participation modalities were offered to enable young people to participate via their preferred method to maximise safety, comfort, and scheduling. In-person study visits were conducted at the Brain and Mind Centre to provide participants with a safe, comfortable, and private environment, with a nearby supporting mental health clinician made readily available. Similarly, as an equal member of a participant's care team, a crucial factor in encouraging engagement with Innowell [37], a DN is well positioned to inspire a safe and comfortable environment, open feedback, and familiarity among participants as a data collector.

Box 1. Discussion topic guide

- Your Innowell use
- Introduction to personalised and MBC model
- Clinician use
- Current care
- Improving accessibility

Data collected included research observations and field notes to document; views on how the DN role functions (from the participant's and DN's perspective); participant experiences with their care and Innowell (e.g., Innowell onboarding completion and duration of use); contextual information (e.g., participant demographics, trial enrolment status and time point, changes in participant's care delivery and life circumstances, regularity of clinical appointments, etc.); and verbatim responses to questions during the discussion. Field notes enable researchers to collect rich contextual information about the participants' lives and study engagement [38], and thus are suitable for constructing rich descriptions of the study visits, participant responses, and research observations as data. Data was later deidentified, collated, and organised by individual participants in question-response format for data analysis.

Data analysis

This study utilised reflexive thematic analysis to develop and report themes based on patterns of shared meaning in the interview data [39,40]. Established thematic techniques reported by Braun and Clarke [41] guided this study, informing six iterative, flexible phases: familiarising yourself with the data, generating initial codes, searching for themes, reviewing potential themes, defining and naming themes, and producing the report. The data was interpreted using an inductive approach. NVivo 14 was used to collate and code interview transcripts.

Here, the following thematic analysis processes were completed. First, three coauthors (CG, MKC and AP) independently reviewed five interview transcripts and generated initial codes. In discussion, the initial codes were reviewed, combined, and revised, and new codes were developed. Importantly, noting an adaption of the reflexive thematic analysis method here [42], a mutable coding framework was created collaboratively to be used as a flexible guide for the remaining analysis to ensure that the multiple coauthors could independently code using a shared language. After that, using the flexible coding framework, four coauthors (CG, MKC, AP, and AT) each independently reviewed and coded a part of the total remaining transcripts. Then, on two occasions, the four coauthors (CG, MKC, AP, and AT) met to iteratively develop, review, and label the themes in consultation with the senior author (FI).

RESULTS

Participants

Seventy-three young people aged between 15 to 25 years participated in this study. A total of 118 interviews were conducted: 69 at baseline, five at 3-month, 29 at 6-month, and two at 12-month follow-up visits. The mean age of participants was 22.7 years (SD = 2.7) and 51 (69.9%) were female. The mental health diagnoses of participants is provided in Table 1.

Table 1. Demographic and clinical presentation of participants

Lifetime diagnosis of mental disorders	Total (n = 73)
Major Depressive disorder	53 (72.6)
Anxiety Disorder	60 (82.2)
Bipolar I Disorder	4 (5.5)
Bipolar II Disorder	7 (9.6)
Substance Use Disorder	1 (1.4)

Thematic analysis

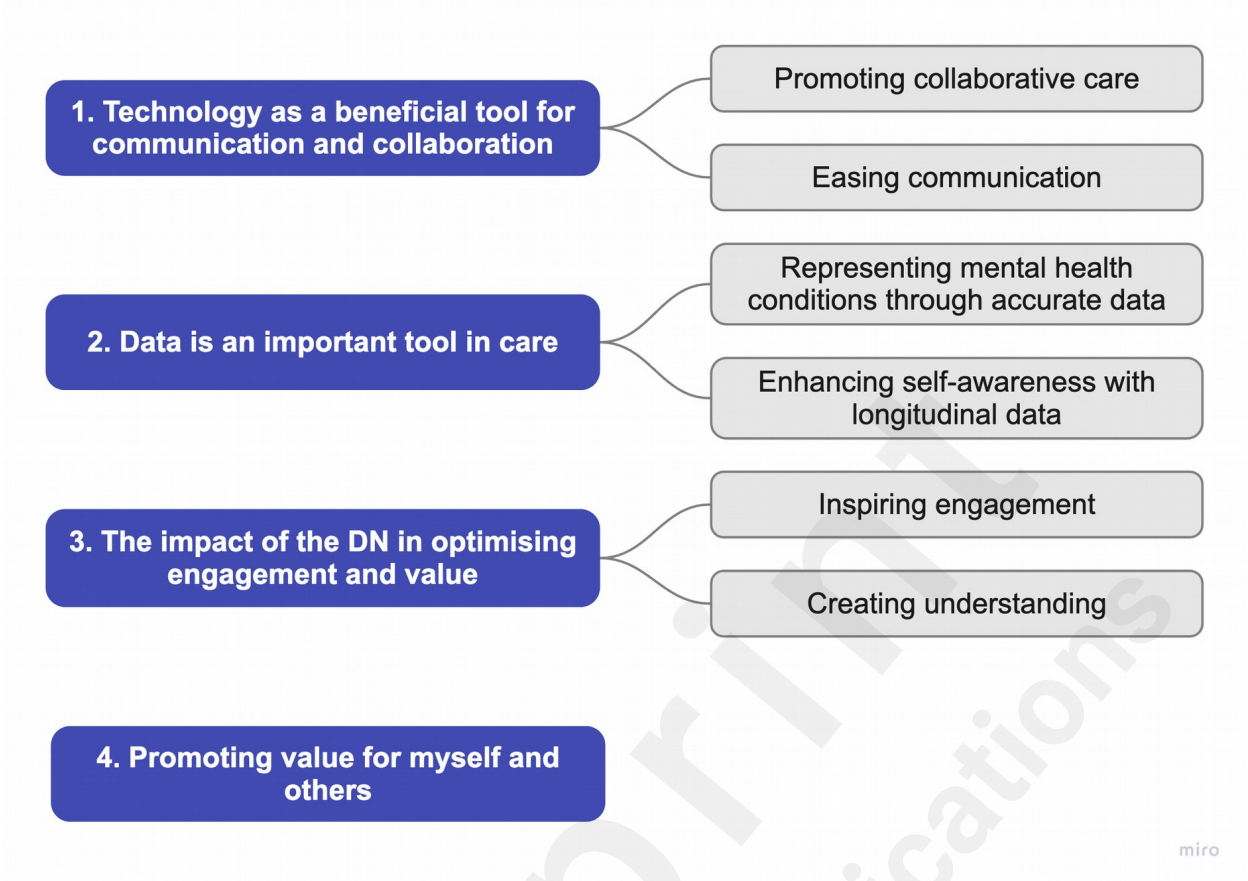
Four themes and six sub-themes were developed based on patterns of shared meaning in the data using reflexive thematic analysis (Table 2). The themes (and sub-themes) include *Technology as a beneficial tool for communication and collaboration* (sub-themes Promoting collaborative care and Easing communication), *Data is an important tool in care* (sub-themes Representing mental health conditions through accurate data and Enhancing self-awareness with longitudinal data), *The impact of the DN in optimising engagement and value* (sub-themes Inspiring engagement and Creating understanding), and *Promoting value for myself and others*.

Table 2. Theme names and descriptions

Theme name	Theme description
Technology as a beneficial tool for communication and collaboration	Relationships and communication in care and the introduced role of technology
Data is an important tool in care	How data is impactful and used by young people and clinicians in care
The impact of the digital navitagor (DN) in optimising engagement and value	Key roles of the DN for improving technology understanding and engagement to advance towards personalisation
Promoting value for myself and others	Meaningful ways technology can be used to add value to oneself and for the broader community via informing service provision change

Figure 1 visualises the final thematic map, indicating the four themes developed during analysis. Per best practices for reporting thematic analysis [41], the complete process of thematic development has been provided in Supplementary Material 2.

Figure 1. Final thematic map



Technology as a beneficial tool for communication and collaboration

Promoting collaborative care

Young people experienced a positive change in quality of their care when their multidimensional assessment data was collaboratively discussed with clinicians. They found that the digital system, Innowell, effectively coordinated care between various health professionals (e.g., general practitioner, psychologist, psychiatrist), tracked medication response, and informed care plans based on individual progress.

Notably, participants' perceived value of Innowell increased when their data was collaboratively reviewed with clinicians to inform and modify treatment plans in response to their changing needs. For example, a participant found Innowell "*most helpful*" when it allowed them to "*bring it up with [psychiatrist] and use it as a tool to review data together*". They knew "*from Innowell that this is how [they've] been and being able to pull it up and show [their psychiatrist]*" led them go into "*immediate damage control*" (Participant 1, 3-months visit). Similarly, participants liked that collaborative data reivew could facilitate proactive care. They were hopeful that regular data input and review will allow clinicians to detect changes in their mental health early, so that they could be "*addressed now, rather than later when it's too late or missed it*" (Participant 2, Baseline visit). Additional quotes that illustrate participants' emphasis on the impact of the collaborative nature of Innowell have been provided in Supplementary Material 3.

However, most young people expressed that clinicians did not deeply incorporate digitally-enabled MBC in their care. At baseline visits, most participants were enthusiastic to use Innowell when they learnt about its potential to enhance collaborative care with their health professionals. However, their

initial motivation quickly diminished when collected multidiminesional assessment data was not acknowledged or discussed with their clinicians during care. The following feedback from a participant at two study time points illustrates this view:

> *"I want to talk more about myself, share my emotions more during the therapy. I feel Innowell will help me communicate this to [my psychiatrist]."* (Participant 3, Baseline visit)

> *"[my psychiatrist] never talked about it [Innowell] but I'm just doing it because of this trial... but it's not that helpful. Talking with a real person, like now, would be inherently better. It's just a website now, so I'm just inputting the data, like on auto-mode".* (Participant 3, 6-months visit)

Easing communication

Innowell was an effective tool for participants who carried guilt and shame around their mental health. Participants found it challenging to overcome these emotions and openly communicate their deteriorating mental health to their clinicians. During these periods, showing their multidimensional assessment data on Innowell made *"it a lot easier to communicate how [they were] feeling. [It was] really helpful for [them] to tell the truth about [their] emotions*" and it was *"easier to answer the questionnaires without feeling the guilt and shame to bring it up to [clinicians]"* (Participant 4, 12-months visit).

Additionally, the symptom data collected between sessions helped participants to effectively communicate important mental health changes during their appointments. Having data that illustrates their changes in mental health gave them confidence. A participant who used Innowell consistently for few months siad that Innowell allowed them to "*actually* [be] *able to voice [symptom changes], and* [feel] *confident to voice it [to clinician] because all the information was there"*(Participant 1, 3-months visit). They felt that Innowell helped them to feel more prepared for appointments because their data provided "*a point of reference for [psychiatrist] but also a very good point of reference for [themselves]."* (Participant 5, 6-months visit). They reported that this sense of readiness and made the sessions more efficient.

Data is an important tool in care

Representing mental health conditions through accurate data

Participants expressed different and sometimes contrasting perspectives on the value of standardised assessments for tracking treatment progress. Some participants expressed that they could "*trust the answers more because [they knew] it was legitimate"* (Participant 6, 3-months visit). Further, the multidimensional measures allowed participants to break down and "*differentiate those components that make up [their] mental health and better identify where that underlying feeling [they are] having lies*" (Participant 6, 3-months visit) and helped them to "*conceptualise what's going on for [them]*" (Participants 7, 3-months visit).

Some contrasting views about standardised assessments were also reported. Although a quantitative representation of mental health provided insights into their longitudinal symptom trajectory, this was not always useful as "*some of those questions feel imprecise*" and "*[it] doesn't necessarily capture things as deeply*" (Participant 8, 6-months visit). Participants believed that their answers to the assessment were "*a lot more of a complicated issue [and the assessment on Innowell] maybe doesn't*

go into enough detail" (Participant 5, 6-months visit). The inability to provide the context to these assessments made participants question "*the accuracy in terms of what the data is looking at*" (Participant 8, 6-months visit).

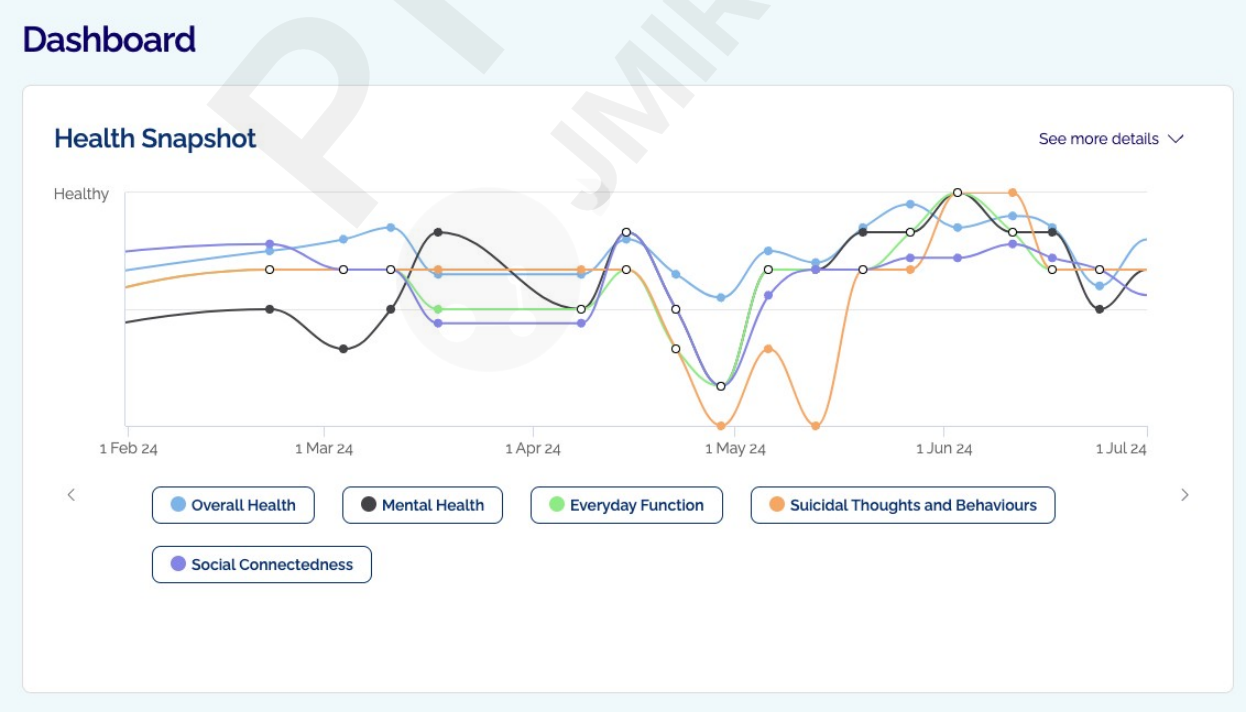
Enhancing self-awareness with longitudinal data

Participants found the longitudinal symptom data from Innowell to be insightful for self-reflection. In particular, the visual presentation enhanced participants' understanding of their mental health trajectory over time (Figure 2). This data-driven self-awareness empowered them to identify "*slightest of dips on the graph*" and to take proactive steps to "*help [them] manage [their] symptoms by catching it in time*" (Participant 9, 6-months visit).

The insights gained from their personal mental health trajectory served as a motivational factor for some participants. They reported feeling hopeful even during difficult periods because they understood the dynamic nature of mental health from previous data. This reminded them that positive periods would return. For example, one participant who consistently used Innowell recalled that *"I've never had the opportunity to look back and see when things have been good. In my head, I think you focus on the times you've been bad so that becomes all you see in yourself, but it's nice to look at it [the graphs] and be able to go 'hey, I was pretty good there"* (Participant 10, 6-months visit).

Furthermore, longitudinal data was used as an extension to care, particularly for those who had irregular or infrequent appointments (e.g., every 3 or 6 months). For these participants, access to Innowell helped them to "*keep engaged in [their] mental health*" between appointments and meant they "*don't have to check-out completely*" (Participant 6, 6-months visit). Additionally, using Innowell as a personal record keeping tool was useful when explaining their condition to new health professionals.

Figure 2. Graph summary of a client's Innowell



The impact of the DN in optimising engagement and value

Inspiring engagement

One of the key responsibilities of the DN within the trial was to routinely encourage young people to complete questionnaires on Innowell to enable routine outcome monitoring. Participants' feedback indicated that the DN played a critical role in galvanising young people to use Innowell from the beginning and sustaining their engagement throughout the trial.

The rapport formed between participants and the DN through regular contact served as a strong motivator for engagement. The genuine empathy, compassion and lived experience of the DN made participants feel that the DN "*actually care about [them] using the technology as part of [their] appointments.*" (Participant 7, 6-months visit). The importance of human support is exemplified by a participant's feedback stating that the DN's personalised text reminders for Innowell completion were "*honestly been the most helpful*" for Innowell's ongoing use and "*very useful in terms of helping someone feel supported to use it*" (Participant 11, 6-months visit). Additionally, another participant described that it was *"a relief to know that a DN is looking at it and monitoring [their] Innowell when updated"* and "*nice knowing that there's someone there to support [them] with it if [they] ever need it"* (Participant 12, 6-months visit).

Beyond providing engagement support, the DN helped participants to alleviate technical barriers of using Innowell, although the approach and outcome differed case by case. Exemplary approaches revolved around offering in-person support where possible, providing accessibility tips, and supporting creative problem-solving. These are examples from different participants at 6-months follow up visits, who initially were not using Innowell regularly due to difficulties with access. These quotes ilustrate the added value of the DN in collaborating with young people to find individualised solutions to alleviate barriers and inspire engagement:

> *"[Innowell] only really works for me when it's in person…Every time I've been in the clinic, [the DN] has been really good at motivating me to do it…In-person support [from the DN] is absolutely the way to go."* (Participant 13, 6-months visit)

> *"That's much better [after the DN explained how to access the log in page]. Now I'll be able to access it [Innowell] easier. I can see myself doing the questions more consistently now."* (Participant 14, 6-months visit)

There were limitations to alleviating barriers that extended beyond the control of the DN. In most cases, these barriers revolve around clinician engagement with integrating MBC into clinical practice, appointment frequency, duration and type of care, and external technological factors. Participant quotes that illustrate this have been provided in Supplementary Material 3.

Creating understanding

For participants, understanding the benefits of digitally-enabled MBC and knowing practical implementation strategies as part of their care were important drivers for ongoing engagement. Informed by their lived experience, the DN had a substantial understanding of young people's needs and challenges within the mental healthcare system. Therefore, the DN was effective in communicating how participants' current needs can be addressed through digitally-enabled MBC. Providing explanation on complex concepts such as MBC, self-advocacy and shared decision-making further supported participants' understanding of the benefits of digitally-enabled MBC.

Establishing this understanding made the implementation of Innowell *"[make] a lot more sense… behind why I should do it and knowing when to do it too"* (Participant 15, Baseline visit). The tailored suggestions of the DN on how participants could *"use Innowell in a way that aligned with my goals for using it in my care"* (Participant 1, 6-months visit) were deemed especially helpful.

An exemplary scenario demonstrates the role of the DN in creating understanding of Innowell to motivate engagement. One participant, initially hesitant to use Innowell due to a negative experience at a different mental health service, discussed their concerns with the DN. Recognising that Innowell had previously been misused with this participant, the DN allayed their reluctance by explaining its purpose and how it could be effectively integrated into their care. The following is a segment from that conversation:

> *"Explaining the intent of it was really helpful. It [Innowell] was never explained to me how it should be used. It's really helpful to know not just how I'm meant to use it but also knowing how a clinician is supposed to use it. I can see that when your clinician understands this intent too, it has the potential to be really helpful for the person…I can see how Innowell can work when it's used properly." (Participant 16, Baseline visit)*

Promoting value for myself and others

Participants often expressed a broad, altruistic perspective on the potential of digitally-enabled MBC when discussing their expectations and goals for using Innowell as part of their care. Many felt that Innowell could catalyse meaningful and essential transformations across all levels of the mental healthcare system – from organisational change to empowering young people to shape the improvements they seek in their care.

Multiple young people reported to the DN that they were actively seeking ways to improve their care, explaining that *"the therapeutic relationship hasn't evolved with the needs that [they] have as [they've] grown up … even though [they] would like something different"* (Participant 17, Baseline visit). Participants welcomed the integration of digitally-enabled MBC, seeing it as a way to address perceived limitations in their current care. They felt that *"Innowell can help [them] to advocate for what [they] really need"* (Participant 17, Baseline visit), and it *"could make care more well-rounded, more progressive"* by *"break[ing] down a lot of barriers for young people who receive care"* (Participant 18, Baseline visit).

However, across different time points, participants voiced concerns about the potential for digital solutions to be implemented poorly. When Innowell was not incorporated into their sessions, one participant expressed that they would "*like the Innowell platform to be seen as part of [their] care. It needs to be seen as an integral component to how clinicians and a service operate."* The participant wanted to "*see the platform be more driven and encouraged by clinicians"* (Participant 19, 6-months visit). The delay and reluctance of services to integrate digital technologies in care was seen as a sign that the healthcare system needs to adapt to young people's needs and views.

On a broader level, participants viewed their involvement in the trial as an opportunity to create meaningful change in mental healthcare delivery, benefiting future help-seeking young people. They expressed a desire *"to be involved in helping develop mental health systems that can better support others"* (Participant 15, Baseline visit). They believed that "*this kind of stuff makes things better for people in the future"* (Participant 1, 6-months visit) and that "*change will only happen when [their]*

needs and voices are represented in research, that is linked to empirical evidence to support that change that needs to happen" (Participant 20, Baseline visit).

DISCUSSION

Principal findings

This study explores young people's longitudinal experiences and evolving engagement with digitally-enabled MBC as facilitated by Innowell. The repeated observations and interviews conducted during care captured young people's perspectives in real-time, revealing that their motivation to adopt digitally-enabled MBC was a means to enhance their care. Young people were enthusiastic about integrating this model of care when they understood how MBC can facilitate self-reflection, communication, and shared decision-making with their clinicians. The four themes developed here demonstrate the value of MBC for improving communication and collaboration in care, the usefulness of data as a tool, the significance of promoting its value, and the DN's role in translating the utility of MBC into practical applications. Overall, this study shows that most young people were motivated to adopt the digitally-enabled MBC to improve their mental healthcare. While most young people initially expressed interest in integrating MBC into their care, their sustained engagement with digital technology depended on its relevance during therapeutic appointments and service-wide integration of the care model.

Young people want to use technology

Contrary to views of some mental health professionals [26,43], this study demonstrates that young people are eager to integrate digitally-enabled MBC into their care. Participants reported that data collected using validated measures helped them feel more prepared for therapy sessions, provided an objective overview of their symptoms, and reduced guilt, shame and anxiety associated with discussing their mental health condition with their clinicians. MBC facilitated more open and honest conversations, allowing individuals to use their routine outcome data to express their need for a change in care. For young people, the primary value-add of MBC was that it improved communication with their clinician, leading to more efficient, highly-personalised appointments that proactively addressed to their changing needs. Further, the value of MBC in giving them an equal voice, enhancing self-advocacy, and supporting shared decision-making with clinicians were essential motivators for engagement.

Similarly, positive experiences with using longitudinal multidimensional data served as a motivator for sustained engagement. Some young people leveraged their longitudinal data to gain accurate insights into their mental health trajectories, ultimately inspiring self-driven engagement [44]. A self-reinforcing loop developed for those who consistently used Innowell over a prolonged period: they entered symptom data, gained insights, and continued tracking due to their positive experiences. Interestingly, these individuals exhibited an inherent drive to continue monitoring their symptoms without clinician involvement. However, as observed from qualitative interviews, there was a substantial drop in engagement shortly after the trial began. Therefore, this experience of benefiting from longitudinal data was reported only among a minority of participants. The majority disengaged from the tool before they could discover the benefits of longitudinal data. Hence, the study highlights that without positive experiences during the initial phases of engagement, prolonged use of digitally-enabled MBC is at risk of being minimal.

Collaboration is key for meaningful engagement

Two interdependent factors were identified as enhancing sustained engagement with Innowell and creating understanding of digitally-enabled MBC: the support of a DN with lived experience and collaborative use with clinicians. In this study, incorporating a DN provided young people with both engagement and technological support alongside their regular care teams. The DN offered continuous communication about the rationale and value of digitally-enabled MBC through frequent check-ins, engaged in meaningful discussions regarding the young people's care and health priorities, and subsequently developed tailored, highly-personalised plans for utilising Innowell to facilitate MBC. Supporting previous studies that emphasise on client's understanding on the rationale of digitally-enabled MBC [45,46] for successful implementation, our findings show that young people's misunderstanding or concerns about using a digital technology as part of care were alleviated when its purpose and functionality were clearly explained (e.g., advising that the technology is not a substitute for in-person clinical care, how to access the login page correctly, and best practices for questionnaire response frequency). Furthermore, the positive benefits of DN depended on their ability to build a strong rapport with clients. Hence, a DN's experience, empathy and compassion were crucial characteristics may be essential factors that could determine the effectiveness of the role, which highlights the importance of standardised protocols for training future DNs [33].

In addition to the DN's support, clinicians' collaborative use of data was essential for fostering meaningful engagement by young people by enhancing the clinical relevance of digitally-enabled MBC in their care. Clinician feedback, open communication, and shared decision-making are established motivators for engagement and improved treatment outcomes [20,46-48]. Similarly, participants in this study viewed clinician feedback as a critical element in appreciating MBC, particularly for contextualising the standardised measures. When clinicians did not discuss collected symptom data during appointments or when appointments were infrequent (e.g. every 3 or 6 months), young people felt a reduced sense of clinical relevance in using digitally-enabled MBC, which led to disengagement. Echoing previous findings, the reluctance of clinicians and services to review progress reflected in routine outcome monitoring data were perceived as indifference to their needs [49,50]. In contrast, collaboratively reviewing longitudinal data enabled proactive responses to young people's changing needs, such as re-evaluating medication and expediting appointment schedules.

Young people highlight the critical need for collaborationg between clinicians and DNs in digitally-enabled MBC. For instance, young people were enthusiastic about engaging with Innowell to achieve their goals immediately after their enrolment visit with the DN. However, over time, some individuals became more sporadic in their engagement as their clinicians showed reticence to incorporate Innowell into their sessions. The majority of their frustrations came from clinicians not utilising Innowell effectively or not meeting young people's expectations. This reiterates already established systematic challenges including inadequate traning for clinicians and service staff, and supportive environments, such as clear protocols, leadership, and resources such as a DN [51,52]. In particular, DN has been shown to support communication between the client-clincian dyad and helping clinicians to make effective use of the digital technology to facilitate a collaborative care [37,53].

Implementation implication

A plethora of research demonstrates the multifaceted challenges associated with the uptake of digitally-enabled MBC in mental health services. These challenges include time and resource burdens [54], performance anxiety [55], difficulties integrating with existing electronic systems [54],

and insufficient training and leadership support [25,55,56]. However, the growing evidence of its effectiveness [57-59] and young people's willingness to adopt this model calls for a concerted effort from all stakeholders to integrate digitally-enabled MBC effectively into mental health services[60]. Findings from this study indicate that DNs play a key role in alleviating barriers to engagement in digitally-enabled MBC among youth. Emerging recommendations for DN-driven approaches to address these barriers and support engagement are collated in Box 2. Future research should explore longitudinal systematic integration of digital technologies in services. Beyond initial deployment of tools, studies should explore how the adoption of the digitally-enabled MBC can be effectively sustained in services over time.

Box 2. Recommendations for digitally-enabled MBC engagement in youth mental health

1. **Provide hands-on onboarding support:** Assist young people with setting up accounts and completing initial assessments.
2. **Explain the purpose and benefits of MBC:** Ensure young people understand how digitally-enabled MBC can enhance their care (e.g. through enhanced communication, progress monitoring, and personalised care coordination).
3. **Support symptom tracking integration:** Help young people to interpret and utilise their longitudinal data during appointments.
4. **Foster ongoing engagement:** Maintain regular communication with young people (e.g. sending reminders for completing questionnaires)
5. **Facilitate collaboration for meaningful use:** Alert clinicians or managers of deteriorations, and assist young people's progress

Limitations

Despite the strengths of this study, including longitudinal observation data and the large sample size, the results should be interpreted in consideration of its limitations. Firstly, the study focuses solely on young people's perspectives, leaving the persepctives of clinicians and services unknown. Examining clinicians' perspectives may reveal different ways they engage with digital tools, such as Innowell, to support MBC that may not be apparent to clients. Secondly, the study lacks quantitative measurements of young people's use of the digital platform, such as the frequency of questionnaire completion and their symptom trajectories over time. Such metrics could have complemented the qualitative data by characterising the type of individuals who are more likely to benefit from using digital tools and engaging in MBC. Thirdly, qualitative data indicates that the study sample consisted primarily of young people with prior care experiences. While this may limit the generalisability of the findings to those who are new to care, these participants' previous experiences provided deeper insights into how digitally-enabled MBC could be better integrated into care. Lastly, wider evaluation across multiple clinical settings and contexts would be useful in the future to investigate how different service characteristics and settings shape user experiences and the impact of DNs on

implementation of digitally-enabled MBC.

CONCLUSION

Digital technology holds great promise for the implementation of MBC. Young people recognise the value of digitally-enabled MBC, and DNs play an important role in its implementation by reinforcing the rationale behind the care model and providing engagement and technical support. However, the fidelity of MBC and the sustained engagement of young people are contingent on wider contextual factors (e.g. clinician and service engagement). Therefore, it is essential to explore how these factors can be address and how DNs can further support services to utilise this care model and support long-term engagement.

AUTHOR CONTRIBUTIONS

CG and MKC are joint co-lead authors. CG, MKC and FI conceptualised and designed the study. AP and AT assisted with conceptualisation. CG was the digital navigator and collected the data. CG, MKC, AP, AT, and FI analysed and interpreted the data. AP designed and developed the thematic map. MKC and CG wrote the manuscript. AP, AT, and FI substantively edited and revised the manuscript. All authors (CG, MKC, AP, AT, HML, SM, EMS, IBH and FI) edited and revised the manuscript, and approved the final version of the manuscript.

CONFLICTS OF INTEREST

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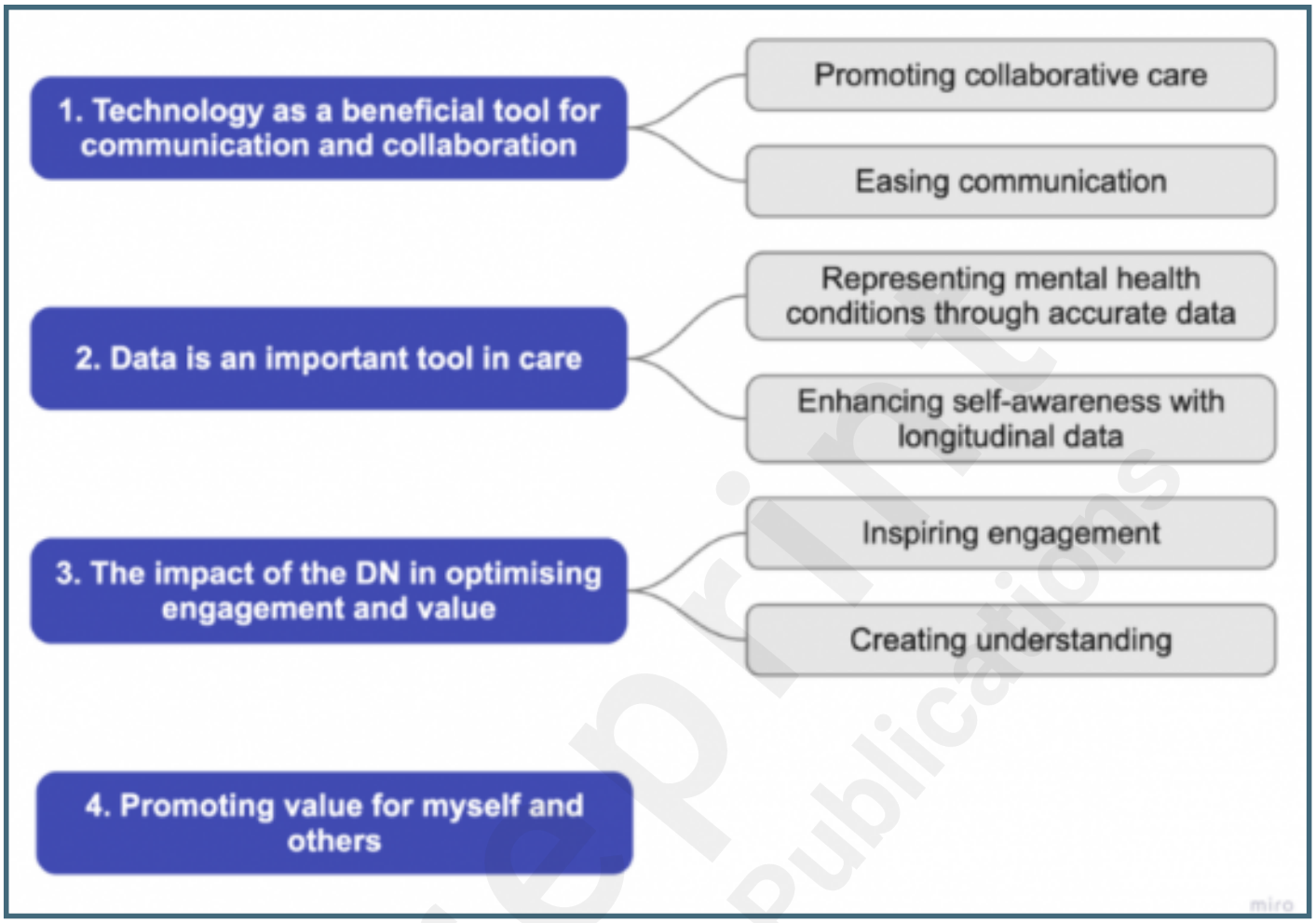
Supplementary Files

Untitled.
URL: http://asset.jmir.pub/assets/8deaffbbceaa70348c57d48444f5c087.docx

Figures

Final thematic map.



Graph summary of a client's Innowell.

Multimedia Appendixes

Most common questions asked by the DN.
URL: http://asset.jmir.pub/assets/f7f2bdce89f6e021a8e51532b680ad67.docx

Development of themes.
URL: http://asset.jmir.pub/assets/1e38d2517de7f3431632a2f766d9abc1.docx

Additional quotes for each themes.
URL: http://asset.jmir.pub/assets/da3b7d9e124986b377a4753e897693b9.docx