

Facilitating the access of the wider community into child and adolescent mental health services in Liverpool and Sefton (UK): The co-customisation of the CYP as One platform with young people; parents and health service providers

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Abstract

Background

Children and young people (CYP) from underrepresented communities in the Liverpool and Sefton regions (UK) experienced an increase in mental health needs, pre-pandemic. The “CYP as One” online platform was introduced via a co-creation schedule, to support the uptake of service users into child and adolescent mental health services. However, post-pandemic, the risk of poor mental health for CYP further increased. The current study co-customised the “CYP as One” platform to facilitate the wider access and inclusion of CYP from underserved communities into relevant mental health services through ensuring their viewpoints are sufficiently represented in the referral process.

Methods

The co-customisation schedule utilised the Living lab approach. Service user feedback was extracted from the “CYP as One” platform and data was generated via seven online focus groups conducted over two months. The focus groups included 16-19-year-old young people; parents of under 16-year-old children and health service providers. Content analysis was conducted on service user feedback, which was covertly presented to focus group participants to aid the conversations during the focus groups. The final data analysis involved conducting a thematic analysis on service user feedback and focus group data.

Findings

The thematic analysis on service user feedback and focus group data returned seven themes. Contrasting preferences of referral methods; the importance of inclusive access to a wide range of platform users; the relevance of demonstrating empathy and sympathy via non-face-to-face referrals; perspective taking aids in the mutual understanding of the needs of stakeholders involved; digital content should account for age and social-development related differences in this context; CYP and parents require timely and relevant mental health information; digital means of referral methods may integrate fragmented services.

Conclusions

Involving insights from service users; the public and health service providers allowed the in-depth exploration of everyday challenges service users may face when using the “CYP as One” platform. The solutions identified by participants to such issues represent a reliable improvement to the platform. Ensuring that the digital content can replace in-person referral processes is of utmost importance to support CYP who previously experienced difficulties in engaging with mental health services.

Plain English Summary

The “CYP as One” platform, an online single point access to child and adolescent mental health services, was created to address inefficiencies of previous referral methods. The primary aim of the current project was to further improve the platform and facilitate the provision of necessary care for children and young people from underserved communities. Through the project, 16-19-year-old young people; parents of under 16-year-old children and health service providers were recruited to participate in focus groups. This was done to evaluate the “CYP as One” platform via identifying everyday challenges faced by service users using this platform and overcome these through relevant solutions. The data acquired from the seven focus groups conducted and the service user feedback previously collected from the platform, showed that participants preferred the “CYP as One” platform but also had reservations about moving away from established referral methods. Participants also discussed the importance of inclusion via recognising the role of gender, ethnic background and sign language barriers. This was followed by establishing the relevance of digital content that is empathetic; takes the perspective of users and considers service users

developmental periods. The “CYP as One” platform or methodology → potentially improve engagement with the research was a significant contribution to improving the platform and to the objective of alleviating the mental health divide in these regions.

Background

Barriers to accessing mental health services for young people

The Liverpool City region experienced a 23% rise in child poverty since 2015 and it is still the third most disability support deprived local authority in England. Both variables are associated with adverse effects in childrens and young people's mental health [1, 2]. Mental health and socio-economic inequalities [1], that exist in underserved groups, limit the uptake of service users into mental health services and increase the mental health needs of underserved communities. In 2021 in the Liverpool City Region, hospital admissions for mental health conditions for school-age CYP were 23% higher in Halton; 29% higher in Knowsley; 14% lower in Liverpool; 14% higher in South Sefton; 78% higher in St Helens and 55% higher in the Wirral, compared to the rest of England [3]. The high need for adequate access to mental health services in the school-age population in this region, demonstrates a need for preventative measures to reduce the instances of hospitalisations. This can be achieved by providing CYP with services and readily available, expert validated information and self-help resources that are more efficient in bypassing present socio-economic barriers. Such efforts may also help those with feelings of being prevented from disclosing mental health difficulties or engaging in professional treatment [4]. Stigmatising attitudes and beliefs toward mental health conditions are found to

be the most prominent obstacles to young people not accessing necessary help [5]. This key attitudinal factor not only impedes mental health service use, it can also foster treatment ineffectiveness [6].

In the Liverpool City Region 22.8% of 11–18-year-olds reported a mental health condition before the pandemic, compared to national average of 19.6% [7]. Even though, the COVID-19 fatalities mostly affected the elderly population, CYP were faced with mental health difficulties during the pandemic [8]. Schools being closed during quarantine periods, made previous routine activities inaccessible. Lack of interaction with peers generates social isolation [9] along with stress; anxiety and depression [10]. Although, post-pandemic, young people remain at an increased risk of poorer mental health [10, 11], due to the exacerbation of the already existing mental health crisis amongst CYP [12]. Particularly for low-income families, the economic recession generated financial burdens and higher unemployment rates [13] that are directly associated with childhood stress; conduct disorders; bullying; suicide attempts; illegal substance use and abuse; obesity and eating disorders and maltreatment [14]. However, relevant health services are overloaded and opportunities to access these services are limited [15, 16], as a result of post-pandemic service user accumulation and shortage of necessary access paths to mental health support and interventions [17]. A recent prospective observational study compared child and adolescent service user data collected during and after the pandemic over a 24-month long period in Liverpool and Sefton (UK). The findings demonstrated a statistically significant increase in waiting times to access child and adolescent mental health services (CAMHS) and a 61% increase in referrals to CAMHS [18]. Although, the unprecedented demand by groups who may be more vulnerable than others to the psychosocial effects of pandemics, whilst being at critical periods of development [19], requires increased and a timelier access to mental health services. Thus, the periodic re-stabilisation of mental health services is high priority. Additional funds have been allocated to alleviate the negative effects of the pandemic, however addressing mental health demands appear to be less of a priority in these plans [20, 21].

Facilitating access via Health Information Technologies

The current number of smartphone users was estimated to be 63.5 million [22], for the 67.5 million total population in the UK [23]. This means that 94% of the population has access to a smartphone. Health Information Technologies (HIT) have previously been shown to reduce the cost of travel [24] and necessary presence of the workforce on-site [25] and increase access to care during the COVID-19 pandemic [26], partially due to adequate access to smartphones. Young people were found to have meaningfully increased their engagement with digital mental health during the pandemic, aiding the service user uptake during this period compared to pre-pandemic [27]. The use of HITs provides young people with access to tools that otherwise they may not have previously had access to, such as reliable mental health information; screening tools; mental health news and current research [28]. University students successfully engaging with a web-based self-screening system was indicated to increase help-seeking behaviour and subsequently improve perceived need and problem recognition [29]. 11–17-year-olds were also shown to engage with online health information and took part in internet-based self-help interventions and screening for common mental disorders and perceived such online tools to be acceptable to use by similar age groups [30]. Alongside behavioural motivation, HITs can address various mental health difficulties in a single system, as a wellbeing course, from mild anxiety to post-traumatic stress disorder [31]. Although, for beneficial effects to take place, the target population does not need to exclusively address diverse groups. In support, an online, digital intervention successfully implemented mental health support and therefore facilitated access into relevant services for LGBTQA + youth to foster sense of identity and wellbeing, whilst succeeding in the digital implementation and acceptance of the HIT [32]. Other studies have confirmed satisfaction with digital mental health services; demonstrating low drop-out rates; and safety and trustworthiness [33].

“CYP as One” platform

Regardless of the perceived effectiveness of a mental health support system, communities and local groups require quick and easy access to services that address at least local health service and community level requirements [34] of varying needs. Pre-pandemic, child and adolescent mental health services (CAMHS) referrals were paper based in Liverpool and Sefton (UK), this method created delays in waiting times for appointments decreased the effectiveness of communication between health service providers and service users, subsequently affecting mental health outcomes. During the pandemic, a web-based mental health service was introduced to integrate and accelerate access for CYP into mental health services in the Liverpool and Sefton region. Consequently, the platform was titled as: “CYP as One” [35], the focus of the current study. Digital single points of access were previously shown to improve time related limitations [36] and outcomes of staff mental health training; integrate fragmented services in a specific community [37] and increase resources and awareness of community mental health care [38]. Thus, an integrated single point referral system can provide a solution for socio-economic barriers affecting CYP from disadvantaged groups to access relevant and reliable information.

Through a prior project [35], the “CYP as One” was co-created through five iterations, from problem setting to problem solving. Health service providers validated and captured ideas for the prototype, and CYP and parents proposed improvements; evaluated and approved the improvements via drop-in sessions; focus groups and interviews. The platform is currently live and represents a web-based, single point access referral form, providing access to nine mental health partnership services in the Liverpool and Sefton regions. This administrative tool allows teams to triage; action and forward referrals within the partnership, to ensure timely action. Young people; parents of children and health service providers can refer to mental health services by providing information in relation to personal details; demographics and presenting issues to be described in detail by service users. Also, the platform has an index of professionally validated resources for CYP & families to use pre/post referral and during treatment.

Co-customisation via Living Lab

However, due to the pandemic, user involvement during co-creation of the “CYP as One” platform remained suboptimal from hard-to-reach communities. Although, co-customisation via the Living Lab approach provides an opportunity to improve the platform’s availability to CYP living with mental health difficulties in the wider community. Co-customisation can aid in placing the user at the centre of the design process to facilitate a better use of resources and consequently the establishment of more efficient stigma and pandemic-related access paths via the “CYP as One” platform into CAMHS. The Living Lab approach [39] integrates research and innovation methods as co-design processes in the real-life communities and settings via qualitative co-customisation

focus groups. It provides a subjective space of real-life settings to address macro level public-private-people partnerships, whilst cultivating micro level user-led insights [40]. A partnership of users; parents/ -carers and health service providers, facilitates joint decisions within the co-customisation team via recognising stakeholders as “experts in their own lives” [41]. Living Lab-based research that includes the co-customisation of HIT, strives to understand the individuals` aspects via a participatory design approach that benefits from the implementation of iterative phases [42]. These iterative processes are defined by reoccurring stages of problem evaluations and solutions based on the current needs of participants [42], whilst enabling the research to be flexible and bespoke depending on the needs of the co-creation group(s) [43]. In turn, co-customisation provides individuals with opportunities to address the power dynamics between communities and researchers via teaching communities about the work of the relevant organisations, whilst actively incorporating the input of health service providers [44].

Theoretical underpinning of the co-customisation process

Considering the application of the Living Lab approach in this setting, symbolic interactionism [45] is relevant to guide such enquiry, whilst accounting for macro level social interpretations. This method allows the exploration of individualistic and subjective definitions of platform concepts and platform use behaviours, rather than concepts that are objectively true [46]. In other words, the exploration of, the universal suitability of platform functions and features dependent on relevant situations; the potential for achieving better results with the same or better approaches to platform content; the potential for positive outcomes based on changing individual perceptions and the platform`s universal comprehensibility were supported by the adapted paradigm to improve the “CYP as One” platform. The enquiry was established in the context of social innovation [40], to incorporate new ideas that meet social needs; generate new partnerships via the Quadruple Helix Model [47] and a more beneficial use of “CYP as One” platform-related resources. The context combined with symbolic interactionism, can aid participants in the identification of issues and consequently solutions, whilst enhancing health service providers` capacity to act accordingly to solutions.

Aims

- Involve hard to reach communities/ relevant stakeholders (participants) in the co-customisation process of the “CYP as One” platform.
- Using qualitative enquiries, explore the perceptions of stakeholders and integrate as such into platform development processes.
- Participants identify issues and challenges in relation to using the “CYP as One” platform, based on their everyday needs.
- Participants develop qualities and solutions via initial ideas to improve the existing design by assessing how the product fits into everyday life.
- Participants review the identified improvements and reach a mutual agreement on the new iteration of the platform to be developed.

Methods

Design

Considering the exploratory nature of the current study, a qualitative design was adapted to fulfil the project`s aims. The participants of the research were involved in the context of a Living Lab, to identify issues and challenges with using the “CYP as One” platform as well as solutions to as such, to ultimately create a blueprint for the new platform. The Quadruple Helix Model [47] was utilised to involve individuals from underrepresented communities; health service providers and other key local actors to engage in bottom-up collaborative innovation processes.

Ethical considerations

Participants were informed about their participation being voluntary and their right to withdraw without any reason or explanation, before each focus group. During transcription stage, the participants received pseudonyms, which were used to label codes for data collection to safeguard the participants` anonymity. Also, no real participant names were reported in this study, to protect the confidentiality of participants.

Respondents involved

The focus groups were held with 16-19-year-old young people; parents of under 16-year-olds and health service providers. The participants were recruited using online adverts from Facebook; Twitter; LinkedIn as well youth organisations and parents` associations, from the Liverpool and Sefton area (UK). The participants were recruited using convenience sampling. The sampling required variations due to the changing needs of the study as it progressed and guided the researchers by what is relevant for co-customisation process development to dynamically recruit participants in accordance with the potential drop-out rates [48]. The sampling was stopped when data saturation was reached ergo no new emergent themes were gained from the co-customisation focus groups data.

Additional qualitative data was collected from the “CYP as One” platform, whereby service users and health service providers provided comments and feedback on their experience with using the “CYP as One” platform, after successfully completing a referral.

Inclusion and exclusion criteria

Inclusion criteria

The participant:

- was 16–19 years old or;
- was a parent of a child who is younger than the age of 16 years or;
- was a health service provider or;

- was one of the above and was diagnosed with any form of mental health condition in the past.

Exclusion criteria

The participant:

- had intellectual impairment [49]
- was presently diagnosed with any form of mental health condition or;
- did not reside in the Liverpool or Sefton regions (UK).

Participant characteristics

Table 1 and Table 2 demonstrate brief descriptions of demographics and ethnic distributions of the participants.

Table 1
Participant demographics

	Young people / n= *; (mean age=*; age range=* [gender distribution])	Parents / n= *; (mean age=*; age range=* [gender distribution])	Health service providers / n= *; (mean age=*; age range=* [gender distribution])
Focus group 1	12 (17.42; 16–19 [9 males; 3 females])	11 (37.10; 30–43 [6 males; 5 females])	8 (37.25; 22–50 [2 males; 6 females])
Focus group 2	7 (17.29; 16–19 [5 males; 2 females])	10 (39.7; 30–53 [2 males; 8 females])	4 (41.75; 32–50 [4 females])
Focus group 3	10 (33.5; 16–53 [2 males; 8 females])		

Table 2
Ethnic distribution of participants

	Young people / n= *	Parents / n= *	Professionals / n= *
Black or British-African	8	3	-
Mixed-White and Black African	7	2	-
White-British	1	7	9
Black or British-Caribbean	1	1	-
Asian	-	1	-
Mixed-White and Black Caribbean	-	2	-
Black or British-Any other Black background	-	1	1

Data collection

Data was collected between May 2022 and July 2022. Demographic data was collected on age; gender and place of residence. See Table 3 for focus group guide. The focus group guide was developed based on a review of the literature, that addressed the development or redesign of health services via the involvement of relevant stakeholders. The original intent was to conduct the focus groups in-person, however surge in COVID-19 infection rates limited the conduct of the sessions to online means. Seven online focus groups were conducted, and each focus group was 1 hour long. The note taker took notes during each focus group on the main points covered by each participant. The recorded audio was transcribed by the lead author. Also, an online, web-based presentation board was used to demonstrate the “CYP as One” platform features and functions and for the focus group follow-up tasks.

Table 3
Focus group guide

Workshop 1	Challenges of the type of product or service to be developed	<ul style="list-style-type: none"> - accessibility - inequities (e.g., electricity; internet) - digitalisation - previous experience - digital exclusion - trust (social perspective)
	Qualities of the type of product or service to be developed	<ul style="list-style-type: none"> - information quality; (e.g., reliability; trustworthiness) - usability - interface (design)
Workshop 2	Exploring participants` everyday needs	<ul style="list-style-type: none"> - information presented - intention to use
	Evaluating the existing design by assessing how the product fits into everyday life	<ul style="list-style-type: none"> - performance expectancy - effort expectancy - social influence - facilitating conditions
Workshop 3	Improving the qualities of the platform to be developed	<ul style="list-style-type: none"> - developing initial ideas to potential solutions: to address the above
Workshop 4	Dissemination of participants` findings from previous workshops in relation to platform improvements	<ul style="list-style-type: none"> - a summary of what has been achieved during the previous workshops - demonstration of plan/ timeline of implementation - future utilisation of the platform in communities in Liverpool and potentially nationwide

Focus groups and respondents` level of involvement

Parents, young people and health service providers formed three groups to avoid response bias, whereby a group is influenced by the insights of the other group [50]. Before each focus group, all participants received an information pack about the upcoming focus groups and the informal nature of the conversations. The first focus group introduced participants to the web-based platform; explored participants

everyday needs and evaluated the existing design by assessing how the product fits into everyday life if relevant if y ∈ issues and challenges ≤ r

perception of the platform. This method allowed the participants rich and free expression of their views in their own terms as opposed to surveys and structured interviews, whilst providing an opportunity to make reflections whilst considering their own comfort levels. The research`s original aim was to conduct ten focus groups, and systematically address each section as per the focus group guide (Table 3). However, allowing the participants to describe their inputs in their own pace created a more effective use of their time and enabled the conversations to flow better, whilst fully addressing the points of the focus group guide in detail without restricting participants to engage with topics they did not see relevant. This is characteristic of the Living Lab and co-customisation approaches [35], where the focus groups were steered by the participants and guided by the researchers via the use of the focus group guide as prompt to facilitate the flexible and balanced exploration of aims and their properties, whilst enabling participants` views to inform the conceptualisation process.

Method of Analysis

Content analysis [51] through an inductive process was used to combine the descriptions of platform users` qualitative feedback, that was provided to participants at the end of the first wave of focus groups. To interpret patterns and explore explicit and implicit meanings within the data, thematic analysis [52] with inductive process was carried out by thematically coding the focus group and user feedback materials. Thematic analysis is a flexible method, capable of continuous data collection in parallel with iterative constant comparative analysis through analytical rigour provided interconnections that are central to the research questions and the hypothetical framework. Therefore, thematic analysis was the most suitable technique to employ for the study, enabling the systematic conceptualisation of perspectives. Using all the available workshop artefacts (e.g., data), common themes that captured important ideas and patterns of responses were identified. The data was analysed without undue influence by the researchers, in stages: familiarisation with the data; generating initial codes; matching codes with sub-themes; matching sub-themes with themes; defining and naming themes. Memo writing was in progress during all stages. Memo writing aided in theme generation and increased the sensitivity of themes. Thus, the researchers were able to track the emergence of provisional ideas for the explored themes while enabling the tracking; development and refinement of the final thematic framework.

Results

In this section analysed qualitative data was included from two types of sources. Qualitative feedback from service users; health service providers and parents after completing a referral via the “CYP as One” platform. Also, focus group data from parents; young people and health service providers. The data from both types of sources were joined together to conceptualise the themes presented below. Quotes that represent conversations between focus group participants include the numbering of participating speakers e.g., Parent 1; Parent 2. Although, these distinctions between participants across focus groups could not be made as the focus groups were only audio recorded.

“CYP as One” versus traditional referral methods

Previously for CAMHS in Liverpool and Sefton, there were multiple referral forms which tended to be either paper referrals or word document templates. These referral forms differed depending on which service received the referral and could lead to CYP having to complete multiple referral forms. This created a time-consuming process and at times led to repetitions in the referral processes. There were participants who felt that a new, digital referral form would be a positive change, but others expressed their concerns. Although, there were no clear distinctions between groups in relation to preference of referral methods. Accordingly, a parent highlighted the need for the implementation of a digital referral method to provide service users with a referral pathway that has a higher likelihood of referring service users to the right service.

“If all the information is there, hopefully it will put them (service users) in the right place rather than them going on the pathway to other places where you are picking something to do with eating disorders and you are finding out it is not, so hopefully with all the information that has been given there (section of the platform where service users can describe their difficulties in detail) it will be more okay, now we know whom we should refer to rather than at the end of all of this, just going to a GP and seeing what they say.” (Parent)

Service users supported these claims by emphasizing the easier and more straightforward nature of a digital referral represented by “CYP as One”, compared to previously employed traditional referral methods.

“Really find the online form much easier than the usual paper forms!” (Service User)

“Better completing referrals like this online, instead of sending emails etc.” (Service User)

Service users and young people also highlighted their preference for efficiency and independence through being able to self-refer via the “CYP as One” platform.

“I think being able to self-refer is so much more efficient.” (Service User)

“Often, it can be like parents who are in the way of children, it can be a pressure for them to talk to a medical professional. I think this is a really good opportunity to give them the independence that they need sometimes.” (Young Person)

The appealing aspects of the platform to young people was recognised by health service providers as well.

“This is a much easier way to refer young people as a professional.” (Health Service Provider)

In contrast, a parent felt that digital literacy may be a contributing factor in completing a digital referral and having someone to talk to via a traditional referral method would ensure being “better” heard, whereas a digital referral would facilitate the automatization of service user uptake and subsequently remove the individual from the process.

“I am slightly concerned about this whole digital assessment/ questionnaire referral. I know that the NHS are going digital, and I am slightly concerned that this will take over from triaging. So, if we start putting in things like documents, I would be concerned that actually this would then become the triage and young people are then become forgotten. What is the word? You know, if a parent or a young person who is filling this in does not know how to fill it in correctly or does one-worded, two-worded answers etcetera, or does not get all the way through it all, they might get missed.” (Parent)

Service users also expressed their preference for traditional methods of referral to have an actual person to talk to during this process.

“Would have preferred to do referral over the phone.” (Service User)

“No, I would rather talk in-person to someone please.” (Service User)

Inclusive access via “CYP as One”: The role of gender and language

The “CYP as One” platform’s primary aim is to facilitate access for CYP into mental health services and provide underrepresented groups with the type of care they may not have previously had the opportunity to access. It is important that service users accessing the platform feel the form is relevant to them and has the capability to be a medium they can rely on, to effectively communicate their personal and private difficulties. When asked about the inclusion of gender-related terms on the “CYP as One” platform, a young person said that,

“I do not see that there is much problem, it includes gender neutral terms and gender specific terms, so I think it is quite inclusive.” (Young Person)

Parents and health service providers suggested that not only the potential CYP service users ≥ ndershod_bent if iedbutal.socarers/ parents` as well, to alleviate barriers in communication that might exist between parent and health service provider [53] during referring CYP.

“In my opinion, I think there is no harm in asking the question, it is such a trigger point with people especially if you have got to speak to the parents. So, I think there is no harm in asking the question, give them the option to say, but they do not have to answer the question.” (Parent)

“Potential option for the parents to inform you of the gender they identify as, so to avoid confusion in the future.” (Health Service Provider)

Although, other parents emphasized that the digital referral form is about CYP, and the quicker the form can be completed, the better. This means the exclusion of parents' gender identification from the "CYP as One" platform.

"I do not think it is necessary, gender does not add anything." (Parent)

"I do not think it would be very necessary to have an identification of gender." (Parent)

Ethnicity and language were also a focal point of the discussions in relation to relevant platform features [54]. Such discussions helped in identifying how all ethnicities can feel prioritised in the referral process. Health service providers explored the importance of accurate specification of all potential ethnic groups, rather than the group-based identification of ethnicities established as per representation in the overall population.

"What I mean is, if I am Chinese does that mean I am in this other ethnic group? Whereas, could it not be Chinese first on the list." (Health Service Provider)
Service users; young people and parents recognised the relevance of specifying the first language of the household as well, as part of appropriate facilitation of access for ethnicities.

"Although this form has an ethnicity section, it does not ask about the first language of the family." (Service User)

"And would it be beneficial to provide the first language of the household? (Facilitator) I think it should be added, yes. (Young Person 1) Yeah. Yeah, definitely." (Young Person 2)

In particular, a parent highlighted that the identification of the first language of the household can aid in establishing effective ways of communication between parent and health service providers when it comes to face-to-face conversations in such settings.

"I think it would make a really big difference because of the fact some of these young people might speak English themselves, but their parents may not. So, although they may highlight that they do not need a translator, later on they may need a translator." (Parent)

The importance of exclusive English language use may present challenges in its verbal as well as written form [55]. Since the primary content of the digital platform is in a written format, individuals lacking in English language proficiency may experience difficulties in utilising the platform and consequently experience a slower access to relevant mental health services.

"Is there going to be anything to enable someone to change the language at the start of the platform?" (Parent)

Parents also pointed out the role of a sign-language interpreter [55] for young peoples' digital referrals, which can be extrapolated on → the carers / parents' potential need for sign-language support when referring a CYP.

"So, you mean a young person with a different language I am presuming, but what if the child needs an interpreter because they are deaf." (Parent)

Empathetic approach via digital means

Part of having a referral service that is inclusive to the target user base and beyond, dictates the implementation of relevant content that is empathetic toward service users. As such, it has to represent efforts of taking service users' feelings; concerns and expectations into consideration, as a reassurance of awareness of the various levels of support required during referrals that are often emotionally charged [56]. These efforts aid in emphasizing the significance of the individual in the process, ultimately overcoming the non-personal nature of digital referrals.

Service users' general perception of the platform in this context was:

"The questions are worded sympathetically and in an easy style to answer." (Service User)

"It is good that the questions are optional, so if it was too difficult for you to answer then you have that choice." (Service User)

An empathetic approach can address complex issues as well. Service user- health service provider communication requires health service providers to apply sensitive language [57], this requirement is not different via the digital approach of "CYP as One", whereby service users cannot associate the text with a person and sympathetic language has an even larger role. A health service provider highlighted as such:

"The only thing I would possibly change is the language, because I know a lot of time from our side. We do not use challenging behaviours. We put behaviours that challenge care." (Health Service Provider)

Not only the specific use of language but the way it is presented can also create a more empathetic route of access to care. When asked about ways of making individuals from underserved communities more likely to access the necessary care through sympathetic approach, a health service provider responded by:

"Can I just say about the ethnicities as well? I have been with some involvement in this before and another place and some of themes that came out, so what ... was saying. I think it is really important, how ethnicities grouped and whether that might make people feel equal, the opportunity to rewrite things. But you know the society that we are living in is predominantly a white British society and that is top of the list ("CYP as One" platform service user's ethnicity selection list based on a standard NHS list), that is top choice. But you have got the ability to change that around and mix things up, you know you could make it alphabetical, you know you could make it that someone else is at the top of the list or you could play around with it." (Health Service Provider)

Feelings of reassurance and a positive atmosphere may be provided via non-face-to-face means in this context as well. A young person highlighted how visual aids currently included on the "CYP as One" platform may help service users make decisions, potentially under stress. The young person stated that:

"I like the fact that it (Resources page) has some visuals, so that feels kind of uplifting, so that is my first impression. So, it is all entangled together is a really good idea, I like it." (Young Person)

Taking the perspective of health service providers drives narrative conveyance of service users

A platform, like “CYP as One”, may incorporate content that is empathetic and aware of the potential appearance of service users’ specific feelings. Although, taking the perspective of the service users and health service providers aids in finding a common ground and generating a more effective atmosphere for communication between involved parties [58]. Conversations between participants explored concepts and subjective perceptions of what contributes to health service providers receiving the referral having a satisfactory overview of service user information.

Parents determined the questions and sections related to mental health conditions to be relevant in this context.

“It made me feel more comfortable making the referral and I am confident you have the information you need to consider the care my child may need.” (Parent)

“Lots of detail so that I can make sure I mentioned everything about my daughter and her issues.” (Parent)

Health service providers built on the comments from parents and felt that the more information can be provided the better. When asked about the inclusion of additional categories on the “CYP as One” platform to have access to extensive service user information, a health service provider replied by:

“I was just going to say, one of the main difficulties we sometimes have is incomplete referrals or we assess a young child or young person, and we find that we have to kind of go chase some other services because there is not enough information. So, I don't think it will be a bad thing to add, I think the more information the better, I think.” (Health Service Provider)

The platform provides tick boxes to pinpoint perceived mental health difficulties as well as textboxes to describe these difficulties in detail. When health service providers were asked about whether they feel that the received referrals include sufficient and relevant information they responded by:

“I was just going back to the tick boxes (Tick boxes: where service users can select mental health difficulties before providing more information on the form). I think it is quite challenging, I think at times because, obviously as a facet of stress, sometimes every single one of them gets ticked. So, it is not very discerning because people just obviously worried. And then we also sometimes find that a large proportion of them are ticked, but there's no context.” (Health Service Provider)

“So, what is the worry and then we want to know more a bit ideally. I am thinking just when I am sort of triaging and you know, I want to know a bit about the family context, I want to know what is happening at school, and I want to know who was involved in the minute taking or who has been involved previously.” (Health Service Provider)

Health Service providers expanded on these points and highlighted the importance of enquiring about family and school context for CYP, to acquire a significantly better overview of the relevant history of service users.

“Last time, someone suggested that it may be more beneficial to ask for more information on family and school context. Has anyone got any suggestions on important points to implement on this? (Facilitator) Yeah, it might be useful. For example, it would be if there were any ACEs (Adverse Childhood Experiences) say domestic violence or alcohol abuse, that kind of thing. And whether or not that was covered later on, I don't know (Health Service Provider 1). Just thinking about school context as well. I know that attendance and concentration levels are part of assessment stage for CYP so that might be helpful to know prior because it just gives an indication of where they are with their mental health sometimes.” (Health Service Provider 2)

“So, someone else said, it may be beneficial to ask for the past involvement of parents and health professionals in relation to the child's or young person's mental health issues. Anyone got any suggestions approaching or implementing this as such. (Facilitator) Maybe, if you had, I don't know, if there was a box about, is this child already known to CAMHS services? I don't know how you would word it though. Because you almost want to say. You know, were the parents helpful? This CYP has mental health issues or were they... the word, not negative. There's a word... they do not believe in them, that sort of thing. They are not supportive. Maybe it is just that, whether they are supportive with their mental health or are they not supportive?” (Health Service Provider)

Although, it was highlighted by health service providers that the use of a digital platform to complete a referral, need similar considerations of perspectives toward content to make sure the communication between service user and health service provider is uninterrupted and does not require the service user to engage in repetitive formal procedures comparably to more traditional referral methods. A health service provider outlined this by saying:

“Suppose the comment here and I know why it is there anyway, is the fact that it is stopping you before you get to far ahead, isn't it, with filling in the information and then finding out you have not got consent (the platform confirms whether consent was provided by the patient), if you done all that, you have wasted not only your time but the child's time if you are doing it with them.” (Health Service Provider)

Age and socially sensitive content and terminology

Alongside empathy and perspective taking, CYP is affected by cognitive capability-related factors in terms of verbalising mental health difficulties, which can vary based on age [59]. Therefore, supporting their engagement, via age and socially appropriate content, with a digital platform of single point referral access can aid them in expressing their mental health difficulties more accurately. A parent felt that expressions with abstract meaning may be difficult for children to respond to.

“In regard to triggers, even when I speak to my 14-year-old child, he does not understand the word triggers.” (Parent)

Another parent using the digital platform stated that, their child struggled to verbalise difficult feelings.

“Some of the questions made my child think about how she feels, a bit confusing but otherwise easy.” (Parent)

Consequently, health service providers were asked about how CYP would be better able to define the information requested from them. In relation to gender identity, they responded by considering the potential meaning of expression to CYP.

"I think unsure (gender identity) is a little bit misleading, like maybe they are sure about their, you know, identity (Health Service Provider 1) Maybe questioning, might sound better. I read it as "questioning" before and not felt the way I feel now that you pointed it out about "unsure", but "questioning" sounds better." (Health Service Provider 2)

Parents suggested that CYP might have difficulties completing a long form, regardless whether the amount of information requested is necessary. A parent stated that bullet points could be used in such instances where a webpage includes a potentially significant amount of information.

"Maybe it could be replaced with a couple of bullet points, so you know what the page is, and then have the wall of text, so you do not have to go through a wall of text to get the main points. So yeah, just have a short description about what it actually is, just that would scare me seeing that much text." (Parent) Although, another parent suggested the implementation of animations and short videos for this purpose.

"Maybe a short YouTube clip or something, so if people are not good readers or like you are saying, do not want to sit and read through all of that, maybe they can watch." (Parent)

Content corresponding with comprehensible expressions of social relationships were also highlighted by health service providers to indicate the effects of negative connotations evoked by relationships between mental health difficulties and the way its associated terminology is presented [58]. Health service providers felt that in similar cases the use of more specific expressions for CYP may be more beneficial.

"Does any of the terminology of these tick boxes need to be changed to make it more child friendly? Or is it child friendly enough? (Facilitator) I think with trouble socialising. Maybe put trouble socialising with people, just because if a 13-year-old is reading this, trouble making friends trouble with friendship groups. And the drinking and drugs, I am assuming you mean alcohol, but that is not clear. Maybe excessive alcohol drinking alcohol, drinking alcohol and/or taking illegal drugs. (Parent 1) You talked about wanting to hurt themselves or feeling like they wanted to hurt themselves? Maybe change it to, self-harming to having hurt myself? Because you have got that the feeling that you want to. And then actually you have done but you want to get help with that. Does that make sense?" (Parent 2)

Similarly to social relationships in the context of educational settings, the importance of family structure aware content were discussed by parents to highlight the possible variations and their suitability to CYP.

"You know where it says a young person being a carer for an adult, some young people, especially my child, my daughter sometimes she is classified as a young carer but also have siblings so not necessarily an adult, so would you not put that in? Even though, she is not a carer for a parent." (Parent)

Other parents felt that terms linked to relationships should be kept simple, as cared for CYP might be unsure about the categorisation of their parent/ carer, and consequently hinder their progress of completing the form.

"Would it not make more sense to have parent/carer because that encompasses parent, foster parent, guardian etc., and at some other point in the form there is that option of parent/carer so you are using the same categories all the way through. (Parent 1) I think I agree with P1, that you should just have parent/carer, because that makes it a lot more, like, easily readable, especially if those options are coming up later in the format, then it's good to keep that, um, consistency." (Parent 2)

Service users and *parents* access to information on "CYP as One"

The provision of various levels of information that fits the various needs of service users is paramount. Emergency information; routine referral progress check function; available self-help resources and so on, may all be required by the same service user. Although, service users may not be aware what information is most suitable for their current situation, therefore it is important that the digital platform is user friendly and easy to navigate and locate information on.

Parents highlighted the need for easy access to information that relates to emergency help, whereby a parent said:

"On some things though, that little "I" above the "in an emergency", if you click on that it could tell you more information. So, you clarify what is classified as an emergency." (Parent)

Young people and parents agreed that during emergency situations, service users need to be provided with information as quick as possible, that is accurate and readily available to avoid potential hospitalisations. When asked about the currently existing emergency section on the "CYP as One" platform, a young person responded as follows:

"I like the urgent help page, that it is more like for emergencies, really nice. You do not have to keep wrecking your brain, you just go for it." (Young Person)

Parents supported these claims and when asked about further optimising the Urgent Help page, they responded by indicating the disadvantages of having too much information on the page.

"If we put too much information on this, it is taking away from what you need if you are in an emergency.". The implementation of precautionary measures can confirm to the user what steps to take during situations of uncertainty. (Parent)

"You need to know what to do in an emergency first, before anything else." (Parent)

The importance of keeping service users informed was confirmed by young people and they felt that being aware of routine actions they are required to take, can ensure they are fully informed about the referral process. A young person said:

"I think I like the part where you can create an account, because sometimes you just want to know the result of the referral you made." (Young Person)

Similarly, parents were asked whether it would be beneficial to them to be informed of the documents and information necessary to be submitted with mental health referrals. A parent replied by saying:

"I think it is a good idea to have all of the information first, so you know what information you need before you start your application. Because then it means you can get it all together and get it all done at once instead of going back and forwards." (Parent)

The advantage of this feature was confirmed by health service providers as well:

"It would be good to see the questions before the referral starts so I can collect information from parents and teachers quicker." (Health Service Provider)

"It would be useful if there was an information finding sheet that you could fill in when meeting with the parent for consent." (Health Service Provider)

Young people also highlighted the resources available on the "CYP as One" platform at present. On the resources page, users can find information (e.g., validated links and videos) in relation to twenty-three mental health difficulties (e.g., stress; grief; loneliness), that are not necessarily conditions. Young people found these resources to be useful and accessible and recognised their importance of having access to expert validated resources, if individuals opt for self-help strategies during referral waiting times or are experiencing mild difficulties.

"I think that is a really good page to have, to have like all these options, all at the same place, all laid out very well. I think that is a very good page to have in general." (Young Person)

"It will act like a central place where you can find useful links." (Young Person)

Young people commented on the availability of platform-based descriptions of the roles and responsibilities of relevant health service providers, service users may engage with. They deemed this to be a useful resource that can help in positively engaging with health service providers, as young people may struggle with viewing specific health service providers as relatable to their mental health difficulties [60].

"I think this is a really good idea to have this information of all the type of people you could be working with. A lot of the times, you can have this problem where you are not really sure who you are talking to, or not really sure who you should talk to, so this information could be really helpful for a lot of people." (Young Person)

Supporting and improving administrative and clinical processes via the "CYP as One"

The implementation of a digital single point of referral, like "CYP as One", involves the platform's insertion into an established process flow for referrers. This means that the platform has the potential to impact established processes, as well as the potential to improve the same processes by identifying gaps of pre-existing barriers that hinder performance.

When asked about what schools might require to successfully adapt the digital referral form, health service providers responded by:

"The form is quite detailed and not quick to fill in, as Sims (a management information system for schools) has different information on pupils in different places. Think I may create a form to capture the info for this form to make it easier and quicker for users who are using our school system." (Health Service Provider)

Other health service providers confirmed the need to support schools in this aspect.

"Would it be beneficial for schools to use this referral template of the platform? (Facilitator) Yeah, it might be a case of that they can, if they are doing it on behalf of a child. They can have the form that they could say right, so you think they (CYP) need to do a referral to fill this form in and we can get it put in, or this is the information you need on the child?" (Health Service Provider)

Health service providers also identified the need for process flow improvements and how the "CYP as One" platform could help in addressing shortcomings that previously represented difficulties too complex in nature to find quick solutions for.

"If you are a GP, and previously, the parents have gone to like, for example, Advanced Solutions family learning programme, you would not necessarily know (Health Service Provider 1). But the reality is, that the GP should be making the referral because the parent has brought the young person. So, we need to get the GPs into the habit of asking these questions. I think that is the bit of the parent and the young person. Does that make sense? (Health Service Provider 2) Yeah. (Health Service Provider 1) But then again, I guess likewise, if the parents gone to school, because they want to refer for something, the Siblings person would not know anything about that the other was involved previously if that makes sense. (Health Service Provider 2) I think it is about this whole culture of trying to find out who is involved already, and who does not. Because oftentimes, you know, you can be working with a young person. I mean, even myself, you may not know that early help is involved, because they have not been connected. Or the parent has not actually been offered this, only when you prompt them. You know, if you start out in that way, then you tend to know more. In a different way of working to make them (parents) important in this process. Yeah, I mean, I think definitely having a question about, you know, what services have you accessed before or something like that, that could help because even then that is a question that anyone could ask if the parent would not necessarily be in our system, if that makes sense." (Health Service Provider 1)

Discussion

Service user and public involvement

This is the first study to co-customise a web-based single point referral platform for CYP, with the aim to improve its capacity to fit the needs of parties involved in the referral process. We achieved our primary objective of facilitating and improving access for CYP into mental health services, through involving relevant stakeholders in qualitative enquiries to explore their viewpoints and ultimately improve the "CYP as One" platform via phases of issue and solution identification. Service user and public involvement was key to the success of the study. The feedback provided by service users and their parents, and the focus group data generated by parents; young people and health service providers allowed for the rich exploration of relevant concepts in breadth as well as depth. The feedback collected enabled us to gain insight into what service users require during raising a referral from the beginning of the process until the

end. They highlighted features and functions of the platform they were satisfied with as well as improvements. Their feedback was taken into consideration and was built into specific phases of the focus groups, in order to confirm; build on or simply discuss the relevance of suggestions by focus group participants. Also, focus group participants were the primary factors influencing the findings of the study. Participants made the decisions on what qualifies as a platform-related issue and challenge, and consequently requires positive change, from their aspects. The authority provided to participants motivated discussions and debates to tailor the platform around the needs of CYP, whilst considering the influence of parents and health service providers in the referral process.

Summary of findings

Overall, the findings indicated seven main points: (1) contrasting preferences of referral methods; (2) the importance of inclusive access to a wide range of platform users (3) the relevance of demonstrating empathy and sympathy via non-face-to-face referrals; (4) perspective taking aids in the mutual understanding of the needs of the stakeholders involved; (5) digital content can be made beneficial for the provision of support for all ages of CYP; (6) CYP and parents need to be and can be provided with timely and relevant mental health information; (7) digital means of referral methods may integrate fragmented services.

“CYP as One” versus traditional referral methods

Findings from this study provided insights on the preference of referral methods by service users; young people; parents and health service providers. The implementation of a digital referral method and the elimination of more traditional, paper and phone-based referrals generated mixed opinions. Participants who highlighted their preference for a digital referral, recognised the positive impact this may have on CYP being able to better express their difficulties [4], whilst increasing the likelihood of being referred to relevant services. The acceptance of the “CYP as One” platform by participants suggests a potential dislike for previous referral methods as well as a motivation for further support in this context. CYP being provided with the opportunity for non-face-to-face self-referrals, on their own terms, may help alleviate stigma [5]. In-turn, this may improve help-seeking behaviour without being required to engage with a health service provider as a first point of contact [4]. However, the importance of having the opportunity of raising a referral in-person, alongside a digital referral via the platform, was identified anecdotally as an essential factor [6]. Although, parents and service users expressed their concerns of using digital referrals. Indeed, it is beneficial to consider that regardless of the perceived benefits of a referral via a single point access, others may prefer more traditional methods as it may seem less of a potential disruption in the services, which they may have previously had positive experience with. As a consequence, service users and parents require the provision of information on how a digital referral method, such as the “CYP as One”, may overcome barriers of previously employed referral methods.

Inclusive access via “CYP as One”: The role of gender and language

Providing inclusive access via the platform was categorically seen as a positive effort by the participants taking part in the focus groups. Service users; service providers; young people and parents outlined the importance of including gender neutral and specific terms; the need for interpreting services as well as implementing the recording of the first language of the involved household. The relevance of the appropriate use of gender-related terms was in accordance with previous observations, whereby considerations toward LGBTQA + youth groups improved engagement with relevant services and in turn health outcomes [32]. Sensitivity toward also understanding parents’ gender role in the familial environment may aid in better understanding the family environment of a service user and identifying the appropriate role of a parent figure in supporting CYP through mental health difficulties. Such attempts to establish a positive atmosphere via digital referrals can create a collaborative environment for effective health service provider-parent conversations [53]. The identification of the first language of the household and the need for interpreting services can potentially represent a major factor in facilitating the inclusion of individuals from underserved groups. The implementation of such considerations aid in alleviating barriers in communication as well as increase the likelihood of individuals successfully engaging with relevant services [64]. Consequently, improving insight into service user history and enhancing treatment effectiveness via service users having a better awareness of processes involved and future steps to be taken, whilst potentially decreasing waiting times [18] as a result of reduced instances of miscommunication.

Empathetic approach via digital means

The use of empathetic language during referrals via the “CYP as One” platform was deemed as similarly crucial as in-person referrals by all focus groups. CYP’s withdrawn approach to engaging with health service providers due to stigma and anxiety, the application of sensitive language can reflect efforts of recognition, via content of the “CYP as One” platform, that distress experienced by service users is a source of highly emotional situations, whilst being able to accommodate for various emotional states [56]. Digital elements need to be empathetically worded to facilitate the inclusion of service users experiencing distress and stimulate expression of personal issues more accurately, contributing to a reliable identification of such difficulties and the provision of relevant care. Ensuring that service users are provided with a digital service that is suitable for diverse needs, may also aid in increasing confidence in the services they engage with and generate a positive service user experience. The importance of facilitating the improvement of attitudinal barriers of CYP toward engaging with services in this context was in agreement with the suggestions of [4]. Remaining consistent in providing a positive service user experience is necessary to ensure the role of the individual/ service user remains a focal point via digital means of referrals.

Taking the perspective of health service providers drives narrative conveyance of service users

Participant comments differentiated between empathetic language use and perspective-taking. The need for the use of empathetic language was similar in concept to perspective taking, however content that takes the perspective of service users and health service providers via the “CYP as One”, aims to address mental state rather than emotional state. Participants generally agreed with the presentation of the content in this context. Although, health service providers made suggestions for improvements to increase the accuracy of referrals via the “CYP as One” in the future. As a consequence, such content can provide support to service users to understand what is required from them by accommodating for their mental state [58]. However, health service providers taking on

the referrals also require service users to consider their aspects. This can ensure that health service providers receive sufficient information and have a higher degree of certainty about service users providing relevant information [58]. Perspective taking appear to improve methods of communication for parties affected, which may be a major contributing factor when it comes to CYP's satisfaction with services, in relation to feelings of trustworthiness toward health service providers [33]. In addition, perspective-taking could lead to decrease in stigmatising attitudes [5] and increase concurrent recognition of the representations of CYP with mental distress and the self, resulting in self-concept realisation of individualistic determination of CYP. Digital content of mental health referrals and effective communication that successfully takes the perspective of users, may facilitate the higher likelihood of help-seeking behaviour for CYP and engage with services via self-referrals. These findings are supported by previous claims whereby students' adequate engagement with web-based screening services increased help-seeking behaviour [29].

Age and socially sensitive content and terminology

Participants recognised that CYP require the provision of age-relevant content [59] to facilitate the appropriate engagement with services. Their suggestions for the use of non-ambiguous terminology used with sufficient descriptions that is comprehensible for young people, should also provide guidance to parents on ways to clarify and translate various states of mental distress to CYP during self-referrals. Establishing more effective health service provider- service user communication may potentially reduce the possibility of the provision of non-anticipatory false information by service users and reduce waiting times [18] as a result of decreased need for repeated appointments. As identified by parents, the inclusion of bullet points and animations, generates a CYP friendly atmosphere regardless of the setting, as the content of digital referral ought to target developmental rather than chronological age. Requiring the provision of accurate, socially sensitive information from CYP, provides health service providers with insight into service users *psychosocial* and *cognitive* \leq *vels*, *similarly* \rightarrow *develo* \pm *entala* \geq . *Inf* or *mationonserviceusers* family structure is particularly relevant in the post-COVID-19 climate, as discussed by [13], the economic recession created financial burden and stress in low-income families, whilst required CYP to undergo social isolation during the pandemic. For some adolescents this period should had to represent the weakening of family ties, however, the pandemic may have affected behaviours of seeking out inclusion in peer groups. Thus, relevant information can support decision making on ideal approaches to treatment that is affected by the self-perception of CYP.

Service users and *parents* access to information on “CYP as One”

Service users may have previously experienced geographical limitations with reaching and engaging with services, although the COVID-19 outbreak isolated service users from vital support, and participants identified the importance of readily available online emergency help information. The online availability of emergency help directed at service users also informs parents of the type of help available and whether that is suitable for their children, rather than the sole use of a universal emergency phone number. Although, parents pressed the importance of having the emergency help section separate from the referral form, as it is currently on the “CYP as One” platform. The time related limitations of CYP; parents and health service providers in scenarios characterised by mental health difficulties was highlighted by suggestions of providing relevant parties with preparatory information that aids in collecting documents and information for referrals. As a consequence of implementing as such may conceptualise in the reduced need for communication related to missing service user information and potentially prevent the previously discussed delays in first appointments. The demand for adequate access to reliable resources was indicated by young people. In line with prior suggestions [30] on the necessary provision and access to expert validated mental health information to CYP, as it is currently available via the Resources section of the “CYP as One” platform. Participants were satisfied with the Resources section, although suggested its continuous improvement based on changing individual needs. In support, access to such resources may conceptualise in behavioural motivation for problem recognition and seeking self-help strategies [28] when service users feel they have nowhere else to go but to the emergency department when experiencing urgent but non-emergency mental health difficulties. Efforts of providing service users with information they may not have previously had access to, may potentially improve digital literacy [1] and reduce hospitalisation rates [3]. A high proportion of the UK population has access to smartphones [23], thus efforts of reaching and engaging with a wider range of service users remotely, particularly in a post-COVID-19 climate, and motivating the engagement with new and more efficient services is essential for nationwide NHS objectives [20, 21].

Supporting and improving administrative and clinical processes via the “CYP as One”

Only health service providers contributed to discussions on how the “CYP as One” platform can create major contributions on an organisational level, due to having a better insight into underlying processes involved. It was suggested that schools in England may utilise the platform differently to standalone health service providers and would benefit from adapting the form, potentially resulting in the acceleration of the administrative processes involved. Others built on these suggestions and highlighted the need and the possibility for generating a complete history of service users

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requirement for the pace and intensity of a service; as well as insights into specific elements of service user history influencing treatment engagement and effectiveness.

Strengths

This study provided an in-depth exploration of underserved communities' needs with raising a referral into child and adolescent mental health services via the “CYP as One” platform. The primary contributing factor was the Living Lab methodology applied in this process [35]. There were discrete processes established for recruiting and engaging with participants to involve the wider community including young people and parents of children with lived experience in the research. Also, the methodology applied to the planning; design and conduct of the focus groups successfully supported the replicability and transparency of the research. To achieve this, the Guidance for Reporting Involvement of Patients and the Public (GRIPP2) checklist was utilised in this study [61]. Additionally, the study identified real-world challenges in relation to platform use and provided solutions to as such via the implementation of cycles of iterative innovation.

Limitations

The focus groups were conducted online due to a surge in COVID-19 infection rates, therefore there was no opportunity to engage with participants in-person. Engaging with participants face-to-face would have allowed the researchers to observe the body language and consequently likelihood of involvement of participants in specific conversations. The study involved service users' insight by feedback provided via the "CYP as One" only, as mental health difficulties often characterise in physiological symptoms and potentially weakened functioning of the immune system. Thus, a decision was made not to expose vulnerable CYP to the risk of COVID-19 infection. Also, health service providers were involved in this research, however, the cultural diversity was unbalanced as the group type was represented by a 90% White-British participant population.

Future Directions

The team plans to continue the co-production of health and mental health relevant products and/ -or services to alleviate health inequalities in the Northwest Coast of England. The next potential step will be to utilise the blueprint generated and implement a new "CYP as One" platform prototype. Followed by validating its effectiveness in reducing waiting times and health outcomes as well as its effect on reducing clinical and administrative data processing times and cost per service user, to support re-stabilisation of the NHS. Future social and health research is encouraged to engage in co-production in this setting to contribute to the establishment of co-creation culture and improve the likelihood of shared decision making; engaging with service users and care design based on lived experience. The continuous expansion of awareness on potential issues affecting mental health services aid in recognising the benefits of identifying citizens as active members of service delivery rather than mere target users. Such considerations ought to provide greater return of efforts via improved user satisfaction and health service provider-service user relationships and good quality health outcomes.

Conclusions

This study demonstrated the beneficial effects of using public involvement via Living Lab approach in the co-customisation and improvement of the "CYP as One" digital referral platform. Service users; health service providers; young people and parents of children successfully identified everyday challenges of real-world issues in engaging with mental health services and provided solutions to as such to ultimately facilitate access to relevant support for the wider community, in Liverpool and Sefton (UK). The findings of the focus groups generated by participants contributes to the rapid implementation of the improved referral pathway. The advancement of CYP *saess* → *services*, *a* ∈ *beerunders* *tan d* ∈ *gdirect* and ∈ *direct* ≠ *edsviahea* < *hserviceprovr*s insight into a detailed service user history and social; emotional; developmental and cognitive factors affecting personalised care. As a result, the public's engagement with the research is a significant contribution to alleviating the current increase of mental health inequalities in the aforementioned regions attributed to the pre-existing mental health divide and the impacts of the COVID-19 pandemic.

Abbreviations

CYP - children and young people

CAMHS – children and adolescent mental health services

HIT – health information technology

LGBTQA+ - lesbian, gay, bisexual, transgender, queer/questioning, asexual

Declarations

Ethics approval and consent to participate

Ethics approval was granted by the ethics committee of Liverpool John Moores University. Each participant provided a written consent to participate in the study and received the same compensation after each focus group attended.

Consent for publication

Not Applicable.

Availability of data

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

KS; CD; RG; GT; GS; VF; HB contributed to study conception and design, recruited was done by KS and CD, data collection was performed by KS; CD; VF and HB, data analysis was conducted by KS; CD; GT; RG and GS. The manuscript was drafted by KS; RG; GT and GS. All authors read and approved the final manuscript.

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Not Applicable.

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