Challenges and Opportunities for the Design of Inclusive Digital Mental Health Tools: Understanding Culturally Diverse Young People's Experiences

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ABSTRACT

Mental health issues affect approximately 13% of people aged 10-24 years old worldwide. In Western countries (e.g. USA, UK, Australia), mental health issues are particularly prominent in Culturally and Linguistically Diverse (CALD) individuals, yet they are disproportionately affected in relation to service provision. Despite demand, there is a significant lack of literature explicitly exploring the design of digital mental health tools for CALD populations. Our study engaged five professionals working in CALD mental health, to gain insights into challenges for service access and provision, and then engaged 41 CALD young people to explore their experiences. We contribute a set of unique insights into the barriers that CALD young people face when seeking help, and their needs for future digital mental health tools. We also provide design recommendations for future researchers on how they might better support the inclusion of CALD communities in the design of digital health tools.

CCS CONCEPTS

• **Human-centered computing** → **Human computer interaction (HCI)**; **Empirical studies in HCI**;

KEYWORDS

Mental health, Cultural and linguistic diversity, socio-cultural factors, Interview study, Survey

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1 INTRODUCTION

In 2019, mental ill-health impacted one in eight people worldwide, which accounted for nearly 970 million people [81]. Young people (aged 10-24 years old based on the World Health Organisation's (WHO) definition [80]) make up around 13% of people living with mental health problems globally [82], with around 50% of issues thought to be established as young as 14 [83]. For young people from Culturally and Linguistically Diverse (CALD) backgrounds, accessing support for mental health problems can be significantly challenging, considering systemic disparities across healthcare [2] [18] [49]. Unfortunately, during the COVID-19 pandemic, mental health issues were particularly exaggerated for young people from CALD backgrounds, who reported increases in suicidal thoughts (27%), self-harm (30%), anxiety and stress symptoms (11%), and sleep difficulties (200%) [54].

In the UK, Black and ethnic minority children are less likely than white children to gain access to mental health services through primary care practitioners (referrals typically happen via schools and social services) [24]. Black children in the US are also less likely to have access to psychotherapy (e.g., counselling), partly due to lower levels of health insurance coverage [2]. Similarly, in the US, young people categorised as 'at-risk' are overwhelmingly Black and ethnic minority individuals with significant mental health needs. Specifically, many of these young people come from low socioeconomic backgrounds, where it is more common to experience poor social mobility, unemployment, poverty, food insecurity, exposure

to violence, chronic exposure to racism, and discrimination, which has been linked to the presence of psychiatric disorders in children [2]. This generates additional problems, as it is currently understood that children living with poor mental health are likely to have a poor prognosis, seeing disorders such as major depression or anxiety manifesting later in life [51]. In addition, the transition from youth to adult (mental) healthcare is a critical period that is known to allow people to 'fall between the gaps' [104].

Stigma around mental illness remains prominent across cultures [1] [2] [20] [45] [70]. For example, Loewenthal et al. [65] reported how their (UK living) Tamil, Urdu, and Somali participants felt strongly against speaking about psychological issues to one another, due to a cultural perception that it is 'wrong' or 'shameful'; feelings that were especially heightened when speaking to clinicians outside of their community. From a healthcare perspective, literature has provided evidence which suggests that clinicians are less likely to engage in friendly discussions with CALD patients or to involve them in decision-making processes [20] [112]. In addition, a lack of mental health professionals' understanding of cultural backgrounds of CALD individuals, was shown to negatively impact patient experiences and reduce access to psychological therapies [65]. As such, it is clear that mental healthcare does not meet the demands and needs of CALD communities. Unsurprisingly, research has found that CALD individuals have fewer mental health visits to both general and specialist care than white ethnic groups [4]. Additionally, Black ethnic groups with mood or anxiety disorders are less likely than white ethnic groups to receive care [58]. CALD individuals are also disproportionately more at risk of involuntary psychiatric detention, as well as being significantly more likely to be readmitted to hospital than white ethnic groups [7] [115].

Digital technologies (e.g. mobile phones, computers) have over 90% worldwide penetration [121] and come with a huge potential for delivering digital services to address mental health concerns [89]. They are especially useful for reaching users who are less likely to seek professional support offline due to common barriers [89] such as high treatment cost, time constraints [71], geographical location [17], and stigma [71] [17] [110]. These devices provide ways to reach young people across all cultural backgrounds, as they allow access to services remotely and privately from a convenient or safe location. Digital support tools can also be personalised and customised to suit user needs [43]. However, there is a distinct lack of research which has explicitly explored the socio-cultural factors that influence how people from CALD backgrounds access and receive digitally mediated support for mental health.

In response to this gap in the literature, our three phase study aimed to inform the design of future digital mental health tools to be more inclusive of users from a range of cultural backgrounds. In phase 1, exploratory interviews were conducted with five professionals working in the space of CALD mental health, to scope their experiences of service delivery and what the challenges might be for young people trying to access mental health support. The findings from these interviews then framed a thematic set of questions for an online survey. In phase 2 this survey was delivered through Kooth, a digital youth mental health platform, and was responded to by 32 CALD young people. The survey aimed to explore the specific services that the young people had, or would like to, access and any challenges they faced; the social and cultural attitudes around mental health that they, and their friends and family had; and the types of digital resources that they would find most useful in the future. Finally, phase 3 involved a series of in-depth interviews with nine CALD young people who were currently receiving mental health support through Kooth's online service, facilitated by a pre-session task which probed them to think about their culture. The interviews aimed to provide a deeper understanding of the survey findings and uncover design insights that could drive the development of inclusive digital tools to support CALD young people with their mental health. Our findings revealed some of the culturally specific miscommunications and misunderstandings that occurred between CALD young people and service providers, and how this then led to perceived lack of empathy with CALD young people's unique experiences and personal challenges; breaches of trust that they had experienced and the impact this had on their help-seeking behaviours in the future; and a lack of representation that they felt was present in both online and offline service delivery (e.g. lack of culturally representative therapists, materials and experiences).

Through this paper we highlight the importance of engaging participants from diverse socio-cultural backgrounds in research around digital mental health platforms. We provide a set of unique insights around how CALD young people currently experience help-seeking and support provision through digital technologies, and their associated needs for future digital mental health tools to support them. We provide a clear set of design recommendations for future researchers, designers and developers, working in the space of digital mental health, on how they might better support the inclusion of CALD communities.

2 BACKGROUND

2.1 Digital mental health support for young people

Technology brings a wealth of opportunities for supporting mental health, from online health-oriented communities and social media groups, to digital health interventions (e.g., evidence-based information, mood trackers, online therapy) [16, 47, 55, 64, 87, 96]. Online and app-based mental health platforms (e.g. Headspace [41], Kooth [53], Tellmi [108]) have the capacity to allow young people to easily access help without being limited by geographical location or time pressures; whether this is support through peers or formal mental health care from a professional. These digital platforms are readily available to use and afford users autonomy over their mental health journey [55] [87]. Some digital platforms allow users to manage their online care experiences by themselves, and to protect their own privacy, e.g. by using text-only interactions which would not be possible using offline services [50] As such, these can easily be tailored for accessibility, socio-cultural factors, learning styles, education, and service preferences (e.g., therapy versus personal skill development) [47].

In addition, the use of online communities to provide peer support for mental health has become increasingly common [98] [84] [38] and has been found to greatly benefit people experiencing mental health challenges. The ability to create content and share experiences relating to experiences of cultural adversity can lead to a sense of connectedness with others in a similar situation [98] and can become a source of support [103] [114] [116]. It has also been

shown that receiving support through online forums can act as a form of immediate intervention, at times when support is really needed [78].

2.2 CALD representation in digital mental health tools

HCI research into digital mental health solutions has not extensively examined topics of ethnicity and cultural diversity [25] [37]. More broadly, there is a sparsity of general HCI literature studying samples outside of Western populations. According to [63], around 73% of papers published in CHI from 2016 to 2020 were conducted with Western populations; the majority of which came from samples made up of Western, educated, industrialized, rich, and democratic (WEIRD) participants from the USA [73]. This is problematic as it not only biases research investigations on mental health to these locations, but also makes it more difficult to infer how to apply the findings of work to broader multi-cultural societies, or other countries where cultural contexts may be different. Related to this, a great deal of HCI literature on health and care is conducted within Western healthcare systems, which often does not translate well to non-Western cultural contexts [10]. In addition, amongst the widely used evaluation frameworks that assessed the quality of digital mental tools, the majority have limited-to-no incorporation of diversity, equity and inclusion factors in their assessment [91]. As such, our knowledge of the experiences CALD users have when accessing and using digital mental health tools, and how these tools might thus be better designed to support them, requires further research.

There has been a small amount of research exploring the cultural adaptation of existing evidence-based mental health tools [118] [109] [52] [27] [28] [21] [15] [13]. However, in a systematic review by [99], the authors reported that, while cultural adaption of e-mental health interventions demonstrates a significant capacity to reduce corresponding symptoms in the targeted population, there is a gap in sufficient reporting around cultural adaptation methodologies.

That said, several pieces of research explicitly targeting the design of digital mental health tools for specific CALD populations describe a number of approaches to ensure cultural sensitivity. For example, the inclusion of characters that represent a specific culture [40] [61], use of particular languages [13] [61] [97], relativity of the content [61] [97], consideration of specific conditions or situations (e.g. low internet connectivity, limited mental health awareness, strain of migration, poor economic background) faced by the population [6] [13] [97], and incorporation of values and traditions associated with a culture [6] [13].

2.3 Supporting diversity and inclusion in digital mental health

Understanding socio-cultural contexts is central to the user-centered design process. However, this can create a new set of challenges when attempting to cater for diverse audiences [56] [117], as the meaning of specific linguistic terms, constructs, and translations often depends on context. For example, a term like 'mental health' is common across white ethnic groups and Western cultures, however, it is unclear whether this term means the same thing when applied to other ethnic groups and cultures [23]. Similarly, this means that how we monitor user experience, user outcomes, and how people wish to engage with digital mental health, will need to be considered differently across cultures [36].

Having a greater awareness of intersectional differences across cultures and ethnicities is important, as this may influence how mental health is discussed and conveyed to different groups of people. For example, in gaming research, both gender and cultural differences have been shown to influence user experience (e.g. through people experiencing higher levels of harassment based on cultural avatars, their accent, or their style of speaking) [93]. Enhancing moderation and trying to cultivate a supportive community was recommended by the authors as a way to help increase inclusion with these types of technologies. Specific to digital mental health services, another suggested approach is to embed inclusive practices to support young people's engagement, such as recognising different kinds of diversity characteristics (e.g. being LGBTQIA+, having a hidden disability), beyond the visible diversity characteristics they might bring to online sessions [39] [93] [85].

Beyond HCI, there are calls within the literature for structural reform in support systems for CALD youth [34], and new frameworks that promote ethical design standards for inclusion within digital mental health interventions for young people with complex social support needs [11]. However, according to [30], the digital mental field requires novel viewpoints around intersectionality and the complexities that this can bring to service provision. It is possible that we could gain advancements through the incorporation of accountability and evaluation frameworks designed to assess diversity, equity and inclusion factors [91].

This is even more important in the current digital health landscape, where innovations in Artificial Intelligence are becoming rapidly adopted. It has been repeatedly shown that biases in training datasets can negatively influence outcomes of AI driven technologies for diverse populations (e.g., facial recognition and profiling, shortlisting candidates for jobs [75]). To ensure that we are not amplifying already existing disparities in healthcare provision for priority populations it is essential to consider the socio-cultural factors that might influence the design of digital health technologies.

3 METHODS

Through this study we aimed to understand the barriers to access for digital mental health support for young people from CALD backgrounds and to explore how we might better design future tools that are inclusive of their needs. Our study was conducted in three phases: 1) exploratory interviews with professionals to understand the potential challenges that CALD young people might face when accessing mental health services, 2) an online survey delivered to CALD young people to further explore these challenges and identify current experiences with digital mental health tools, and 3) in-depth interviews with CALD young people to develop design insights for future digital mental health tools that would feel inclusive for young people from CALD backgrounds. Our approach was to cast a broad net in our exploratory interviews with professionals, to understand the overarching challenges, and then to narrow in on our understanding of these challenges within our engagements with the young people. A visual representation of the study design

can be viewed in figure 1. Subsequently, our data analysis involved synthesising and triangulating the entire data set to present our final set of findings.

Figure 1: Visualisation of study design.

3.1 Positionality Statement

The authorship team for this work come from a variety of different backgrounds and life experiences. As Murdock et al. [72] describe, the positionality of particularly white researchers, investigating the lives of Black and minority ethnic communities, is important to describe. We took on this research as we personally believe that there is great importance in fostering equal opportunities to access mental health services both online and offline. While not all fitting our definition of CALD in this work, we bring a range of perspectives on the topic from our own lived experiences. The breakdown of the authorship team is as follows: 2 CALD females (both Asian, one of whom is explicitly focusing on CALD mental health in her PhD research), 3 white females and 3 white males. Two of the white authors are also from communities that experience micro-aggression in the UK due to sectarianism. The authors were committed to extending their own knowledge and experiences to empathise and engage with the CALD young people in this work, and this has informed our approach to study design and data analysis.

3.2 Statement on Language

The authors acknowledge the significant weight that is placed on language in attempting to describe communities from diverse backgrounds. Black, Asian and Minority Ethnic (BAME) [46] is the term most widely used in the UK, where this study was conducted. However, many of our professional participants challenged this terminology and, as a research team, we recognised the focus that this term brings to race over the rich cultural diversity in the UK, and the impact that culture has on mental health that we were really trying to capture through our study. The term Culturally and Linguistically Diverse (CALD) [86] is more broadly used in the Australian context and was a framing that we felt better reflected the values of our project and what we were trying to achieve. As such, we use this terminology throughout to refer to our participants. That said, we are fully conscious of the role that experiences with systemic issues (such as racism) can play in creating health disparities, and note that many of our participants identified themselves as culturally British (e.g. Black British, British Asian). Similarly, we had white participants who identified themselves with a culture other than British (e.g. White Irish). It should also be noted that all of our interview participants used English as their first language and our survey was conducted in English (and as such English proficiency was assumed).

3.3 Partner collaboration

For this study, we partnered with Kooth, a UK-based online mental health service that provides support to young people, aged 10-21 years. The service is available to young people living in the UK, who would like to seek out advice or support online from mental health professionals. Whilst not exclusively designed for CALD young people, it aims to be inclusive of young people from diverse backgrounds. Kooth is the largest and longest running digital mental health platform for young people in the UK and is funded through National Health Service (NHS) local authorities, making it freely available and easily accessible to the young people who need it.

3.4 Ethics

Our study received ethical approvals through Bristol University's Institutional Review Board. All interview participants in phase 1 (professionals) and 3 (young people) were provided with an information sheet detailing the project and were asked to sign a written consent form prior to their interview. Surveys were distributed online and contained a landing page which provided full details of the project. Participants were explicitly asked to confirm that they were a) over the age of 16, b) understood that their participation was voluntary and c) that they consented to being part of the study. Informed consent was only assumed if the participant completed the survey in full.

Prior to engaging any of the young people in phase 2 and 3, all documentation was reviewed and iterated on in consultation with Kooth, who collectively checked all documentation for content, language, tone and the terminology used. Information sheets, consent forms, the survey, interview proforma and pre-session activity were all approved by the organisation before we began recruitment. In addition, for the phase 3 interviews, an escalation plan was created by the project team in consultation with Kooth to ensure that there was a process in place to support any participant that might become distressed during the interview itself. Loosely, this involved informing the participant at the beginning of the engagement that the researcher was not a mental health professional and would escalate any issues directly to the Kooth (who held emergency contact details of legal guardians), as well as offering a set of pre-prepared support resources.

3.5 Recruitment

Professionals in phase 1 were recruited from Project Zazi, a hub led by Off The Record, which is a not-for-profit youth organisation in the UK that explicitly focuses on mental health. Project Zazi provides a variety of group and one-to-one support exploring issues of mental health, race, ethnicity and culture. Participants were purposively sampled with support from the organisation director.

Interviews were semi-structured and explored participants' experiences of working with CALD young people, as youth workers, as well as their views on the major barriers and challenges to mental health support access for CALD individuals. Each interview took, on average, around 50 minutes, and all were conducted via video or telephone call.

Recruitment of the young people for phases 2 and 3 all took place on the Kooth online platform via recruitment advertisements across both phases which explicitly stated "we are looking to hear from people over the age of 16 who are from culturally diverse backgrounds". Potential participants engaged with the survey via a link provided in the recruitment advert for phase 2. For phase 3 interviews, interested participants were asked to contact the research team directly via email for further information. Participants were encouraged to read through the information sheet and consent forms in detail, and discuss them with a trusted adult prior to taking part, though explicit parental consent was not required.

3.6 Inclusion criteria

Young people in phases 2 and 3 were included in the study if they were between the age of 16 (as the lowest age suitable for providing consent without a parent or guardian, as per our ethical review board) and 21 (as the highest age of Kooth users), and identified as being from a culturally diverse background. All young people were users of the Kooth platform at the time of recruitment and, as such, were actively seeking mental health support at the time, though the authors did not ask participants to disclose what they were seeking support for. There were no explicit exclusion criteria and it should be noted that we did include two white participants in the phase 3 interviews following initial email exchanges between the participants and the research team. Int12 was a white British female who was dealing with religious identify issues relating to her decision to move away from a very Christian upbringing. Int14 was a white Irish female who had traumatic experiences of attending a boarding school in England. For the professionals, participants needed to be a staff member of Project Zazi at the time of being interviewed.

3.7 Phase 1: Exploratory Interviews with professionals

For the first phase of the study, we interviewed five professionals (youth workers) working with CALD young people around their mental health and wellbeing (three female, two male; all from CALD communities themselves). Starting with professional interviews was a conscious decision as most of the research team were not from CALD communities themselves. As such, we wanted to gather insights from people working on the ground with CALD young people in order to orientate ourselves to the particular challenges that young people might face (which we felt was a more ethical approach). This helped to frame the work moving forward with the young people from a more informed positioning of the research team. The interview topic guide included questions around the professionals' work experience, their experiences of supporting youth mental health for young people from CALD backgrounds, their views on the main barriers and challenges around mental health support for CALD young people, and the role of technology in supporting these.

All interviews were audio recorded and transcribed for thematic analysis using NVivo (version 11). We took an inductive approach to the data analysis, following methods drawn from Braun and Clarke [12], which involved coding the data at the paragraph to sentence level without any pre-existing theories. That said, our analysis was inevitably guided by our interview topic guide. The findings from phase 1 were directly used to frame a set of questions that we developed into an online survey, for further exploration with CALD young people in phase 2.

3.8 Phase 2: Survey with young people

In this second phase of the study we created our online survey on Qualtrics and advertised and distributed it through Kooth to participants who were a) over 16 and b) identified as CALD. The survey was conducted anonymously.

The survey sought to understand the specific services that the young people had or would like to access, social and cultural attitudes around mental health that they and their friends and family had, and the types of digital resources that they would find most useful in future service design. The survey collected a range of demographic information (age, gender, ethnicity, religion and type of school they attended). It also asked them to specify the type of technology they had access to (both personal and shared devices). The rest of the survey was made up of 45 (primarily checkbox or rating scale) questions to probe their experiences with: accessing and using mental health services, including the types of services used; other people's attitudes to mental health; whether they felt represented within current services and resources for mental health and the importance they placed on having service providers of the same ethnic or religious background to them; and finally how they would like to access future digital mental health tools and what these should include. There were several options to provide free text responses, to add clarity to their answers, but under guidance from Kooth we kept these to a minimum to maximise engagement.

The survey yielded responses from 32 young people (27 female, five male; age range 16-21). Participants' self-reported ethnicity created 26 unique inputs, and ranged from broad self-identifications (e.g., Indian) to more specific sets of backgrounds (e.g., Black African, Caribbean and African, British Asian Bangladeshi). The majority identified as Black African or from a specific African country (Ghana, Somalia, Nigeria) (n=8), with next highest reported ethnicities as mixed race (n=6, e.g. Asian mixed, White British and Arab), Black British (n=4), or black Caribbean (n=3). The majority of participants were either Christian (n=15) or agnostic/ atheist (n=11). Others identified as Muslim (n=4), Sikh (n=2), and Hindu (n=2). The majority of participants (n=24) reported that religion was either not, or only slightly, important to them.

All participant responses for the remaining survey questions were collated and analysed descriptively (i.e. percentage of respondents). Content analysis [105] was conducted on free text responses by generating relevant themes of discussion and providing counts of these thematic instances. The findings were used to drive our final phase of research, by providing insights into the presiding views that young people had around the challenges and barriers to

accessing current mental health services and how these might be improved. We used these insights to help generate our interview topic guide and frame our discussions. Participants were reimbursed with a £20 gift voucher as a thank you for completing the survey.

3.9 Phase 3: In-depth interviews with young people

For the final phase of our research, we recruited nine young people aged 16-21 from Kooth to take part in an in-depth, semi-structured interview, which explicitly focused on obtaining deeper insights to our survey responses and exploring specific design implications for future digital mental health tools. All participants were female, which is reflective of the engagement we also received in the survey. A breakdown of participant demographics can be viewed in table 1. The interview was structured in five parts: 1) their cultural identity, 2) their experiences relating to mental health, 3) positive and negative experiences they might have had relating to their identity, 4) their specific experiences engaging with digital mental health tools and how these could be improved, and 5) their views on their cultural representation in digital mental health tools. Participants were asked to complete a pre-session activity (see figure 2), which prompted them to describe aspects of their cultural identity, and send this to the research team before the interview took place. This allowed the research team to have a better understanding of the young person's cultural background prior to the session and provided an ice-breaker before progressing with the interview questions. Most participants discussed the service they received through Kooth as a means of contextualising their experiences, although they also described a range of experiences using other online platforms (including gaming platforms, social media and peer support forums) and offline therapy experiences. Interviews were all conducted online via zoom and lasted approximately 90 minutes each. Participants were provided with a £20 gift voucher as a thank you for their time. The data was transcribed and analysed in the same manner described in phase 1.

Participant ID	Sex	Age (Years)	Background
Int6	Female	17	Indian (Muslim)
Int7	Female	17	Indian (Muslim)
Int8	Female	18	South African (Agnostic)
Int9	Female	17	Indonesian (Muslim)
Int10	Female	16	Thai (Agnostic)
Int11	Female	18	Filipino (Agnostic)
Int12	Female	16	White British (Catholic)
Int13	Female	17	Indian (Muslim)
Int14	Female	18	White Irish (Catholic)

Table 1: Phase 3 participant demographics

4 FINDINGS

This section synthesises findings from all three stages of our study, including our survey and both interview phases. Topics in this section integrate data across all phases (e.g. discovering a topic during the professional interviews and survey (stage 1 and 2), and then probing into this in greater depth through our stage 3 interviews). Quotes and survey findings are interspersed from different stages, when this helps to support findings. Participant quotes are identified with the prefix, Professional (Prof) or Interviewee (Int) followed by their participant number (Prof 1-5 for phase 1, and Int 6-14 for phase 3). We further identify phase 1 participants as professionals, phase 2 participants as survey participants, and phase 3 participants as young people we interviewed throughout the text to ensure clarity.

There were 4 major themes extracted from the data: 1) Challenges and barriers to receiving mental health support, 2) (Mis)communication with professionals and peers, 3) Breaches of Trust, and 4) Challenges with Current Digital Mental Health Support.

4.1 Challenges and Barriers to Receiving Mental Health Support

A number of key challenges were revealed during the professional interviews, often related to the (negative) perceptions young people had of various services. Throughout the professional interviews, the notion of stigma around mental health was prominent within CALD communities; *"It's like their only idea of mental health is someone who's in an asylum"* (Prof4); and *"There is stigma around the idea of mental health and personal weakness"* (Prof3). This was seen to cause young people to approach services with caution, *"There is that real fear of services. That's still a barrier. There aren't a lot of culturally appropriate services"* (Prof5); and *"there's a distrust of institutions, whether it be health and social care or policing"* (Prof2). Having a safe place to feel comfortable enough to *"authentically"* (Prof3) discuss intimate feelings with mental health professionals was seen as vitally important. One professional discussed the importance of reaching young people *"outside of their cultural context"* (Prof3), for example, in schools. This was seen to create a more neutral setting where any expectations from their cultural context (e.g., behaving in a certain predefined way in front of family members or friends) was less imposed or expected. These underlying social constructs, expectations, and norms were seen to reinforce negative perceptions of seeking help, and also influence trust in therapists or care workers and the systems in place.

Several survey participants provided free text responses that discussed the issue of how mental health remains taboo in their culture. E.g. *"Elder generations [believe] that mental health was demonic and therefore has become quite a taboo subject"* and *"Talking about mental health with Asian relatives can be hard as Asian culture tends to be the culture where mental health is the most taboo"*. It was also discussed how experiencing mental health issues can be viewed as 'unfaithful' to some people's religions, e.g., *"Some people think that if you suffer from mental health issues such as depression you have not prayed enough and you're not a good enough Christian which is not true"*, and "*In my culture people see mental health issues as a result of not being a good enough Muslim"*. Participants were asked how they would tackle these negative attitudes towards mental health in the survey. In response, 72% (n=23) reported that it is

Figure 2: Pre-session activities carried out by phase 3 participants asking them to think about their cultural identity. All images above were collected from the same participant (Int13)

beneficial to raise awareness about young people's mental health challenges with older generations.

A total of 66% (n=21) of survey participants reported that it was difficult for them to get help for their mental health. They were asked to select from multiple possible concerns and were provided with the opportunity for free-text clarification. The major highlighted concerns were not being understood (n=18), being worried about asking for help (n=14), being unsure who to talk to for help (n=12. e.g., *"I don't know where I can go or who I can talk to outside of my friends.…"* and *"I am too young to get help on my own and I cannot get through my parents.…"*), being afraid they will not be taken seriously (n=11), or being worried about what will happen if they get help (n=10. e.g. *"being sectioned, stigma with parents"*). This concept of stigma within the family was further highlighted when we asked survey participants about mental health attitudes in their immediate circles. In general, friends were seen to show more positive attitudes towards getting help with mental health than family, with n=23 (71%) participants reported their friends as holding positive attitudes towards getting help with mental health, while only n=11 (34%) participants deemed that their family hold the same attitude. Additionally, n=12 (38%) participants explicitly reported that their families held negative attitudes towards getting help.

Despite challenges in formal support seeking identified by both the professionals and young people, the majority of survey participants (75%, n=24) reported that they felt they had access to less formal modes of mental health support when needed through digital technology; sharing a number of apps (e.g., Calm, NHS App) or websites they had used (e.g., NHS, ChildLine). However, even in the digital space, the young people we interviewed discussed additional barriers to access, for example long waiting times even when using online mental health services:*"If you think about the waiting times, comparing 6 minutes [with a phone based helpline] to about 2 hours of wait [with an online web service], just to speak to someone for an hour... Yeah, it's not great"* (Int11), and *"sometimes you'd be stuck waiting to talk to a counsellor for like an hour"* (Int14). Despite these waiting times, participants acknowledged that, by contrast, the waiting times for accessing offline mental health services were far greater: *"you would call them up and be like 'hey I'd kind of like a sesh', and they'd be like 'yeah we're gonna put you on a waiting list, see you in six months'"* (Int12). Several of the survey participants reported similar issues around long waiting times for formal offline care. e.g. *"Because the service doesn't have a lot of resources I have long periods between appointments and there is a long waiting list which means sometimes I need help and can't get it"*, with one even discussing the extreme measure of hurting themselves out of desperation for support:*"Most times in my life the only way to get services to listen to you or help you is to do significant harm to yourself first so they know you really mean it when you say that you are struggling"*.

A difficulty common to our interview participants with formal offline mental health services was associated with turning 18 and transitioning from child to adult services: *" as a young person, it was insane until I turned into an adult, that's when I felt like there were cracks in the system if that makes sense. As soon as I turned 18 all of my support system disappeared. I was not given any advice on where to go next."* (Int11), and*"that's me snapping my finger. All gone. It's 23rd December. It's my birthday. Everything's gone now, cuz you're 18. Goodbye." (Int13).* When it came to digital mental health support, there was a somewhat different challenge associated with getting older, in relation to the fact that, unlike face-to-face support which would be tailored to the individual, digital tools are often designed for the entire 'young person' age bracket (10-24). One participant described one online service as being more directed at children younger than themselves: *"I find that a lot of their like materials and resources was aimed very much at young children [...] Kind of like 7-8-year-olds. Therefore, like the things that they are worrying about is obviously quite a bit different to sort of well, like 17-18-year-olds are worrying about."* (Int12). Similarly, another participant highlighted a need for age-specific content in digital tools: *"when you're older and it's a lot more complex, like, I don't know failing A-levels and stuff, it's a lot of revision and all that kinda stuff"* (Int11).

4.2 (Mis)Communication with Professionals and Peers

The language used around mental health concepts was seen as a large challenge for young people's access to mental health services, in part due to the nuances of individual words or phrases, that can have vastly different meanings when translated into different languages. For example, one professional explained how the term mental health does not *"exist in her cultural context"* (Prof2) when discussing a Somalian young person she had worked with. When this type of issue intersects with a language barrier, and a lack of understanding from the clinician in relation to specific cultural attitudes and concepts, there can be significant miscommunications. As Prof5 described:

"The questions from the doctor were based around his experience of hearing voices and he was asking him about hearing Allah's voice, and he started discussing stuff about like does he speak to him through the television and did he speak to him through the radio, or was it when he'd had cannabis he spoke to him? […] He [the young person] said 'He speaks to me when I'm reading the Qur'an,'[…] the doctor's like baffled by it and just confused because he was trying to eke out that he was hearing voices, but he wasn't" (Prof5).

In the description above, the doctor was attempting to assess mental health criteria (i.e. auditory hallucinations) which can be attributed to conditions such as schizophrenia. However, there was both a linguistic and cultural misunderstanding of the young man's personal connection to reading the Qur'an and 'hearing Allah's voice'. Another example of this misrepresentation of language was further reported by Prof5: *"they thought he was on a hunger strike, but it wasn't a hunger strike because it was Ramadan and he wasn't eating during the day"* (Prof5).

Around 37% 9 (n=12) of the survey participants felt that it was extremely or very important to have access to a counsellor or therapist of the same ethnic background to them. The need for mental health professionals who have a clear cultural understanding and sensitivity to specific experiences was also expressed by the young people we interviewed. For example: *"say if someone's from Africa and they had a family member that's like killed horrifically or whatever, and they need to talk to someone from that country that can understand how the government works there of some sort"* (Int8). Int6 also described several challenges they had trying to find a non-white therapist who could empathise with their lived experience: *"having a patient who is speaking about issues that they face as a result of their ethnicity, their colour, it almost forces the therapist to have to look at themselves and their own biases, and I feel like a lot of therapists aren't ready or willing to do that"* (Int6). Another participant described feeling that an online therapist they were seeing trivialised racial discrimination by likening it to bullying: *"so if I was talking about racism I could talk about it, but it wouldn't really be addressed too much. It would be seen as the same thing as bullying."* (Int9).

The professionals also highlighted the issue that young people sometimes had a strong perception of who a mental health professional is, and commonly assume them to be white, middle-class and typically female. Prof3 explained: *"there's that association in a young person's mind that a therapist looks like this and by default that therapist will not understand their experience"* (Prof3). Prof2 discussed how this creates *"barriers in young people's minds"* (Prof2) that they will need to educate their therapist in order to have any chance of progression and improvement with that therapist. This was indeed the case for several of our survey participants. In response to the question 'Have you felt the need to educate your peers or a professional (e.g., counsellor) about your cultural and ethnic background?' more than 66% (n=21) answered yes. One participant discussed stereotypes against their culture and feeling a need to justify their family's behaviours and attitudes to provide context to their therapist:

"I come from a Colombian background and although I was born in this country my parents still very much show behaviours that are deeply rooted in my culture. By this I mean the way they react to situations and problems is always to try fix it yourself, find a solution and this is something that I've had to explain to professionals for them to understand why my parents have the ideas they do"

This also extended to educating peers: *"I went to a white school and so a lot of my friends were very uneducated about unconscious bias, they did and said things that made me very uncomfortable and so I had to educate them about why those assumptions, words or actions can be harmful to black people".* Another participant expressed frustration at other people's lack of cultural sensitivity: *"People can be very ignorant and not understand the pressure or expectations that come from my culture".*

Despite these challenges, several of the young people we interviewed described the value of having a shared culture, and shared language, with friends in the school setting. Two participants described how they shared experiences with friends that they could trust and how they maintain secrecy through their shared language: *"we're very open about it [mental health] because, a lot of us do struggle a lot and we do want to be there for each other. [...] we'll chat to one another in our own language [...] Like, our own secret club"* (Int7) and *"I have one friend where I speak to her in her language, sometimes like when we're in school and we don't want anyone else to hear what we talk about"* (Int9).

4.3 Breaches of Trust

Professionals discussed the notion of fear and distrust in the system as a prominent issue among CALD young people, with Prof5 reporting their experience of CALD individuals receiving mental health support only at 'crisis points': *"I think the main route of Black and Asian males into mental health services is via the criminal justice system"* (Prof5). Expanding on this point, they added that this creates *"real fear of [in-person mental health] services"* (Prof5). During our interviews with young people, several discussed breaches of trust when professionals spoke to family members without consent, e.g. "*Sometimes, some of the counsellors don't help. Like, they'll go talk to your parents"* (Int11). When confiding in their GP, another participant described how: *"I had my confidentiality broken [...] my GP asked if I identified as LGBT+ [...] And yeah she just outed me to my family"* (Int10). They went on describe the impact they expected this would have on trust in their later life: *"even like later on, like if my career offers mental health support and stuff, I probably would just get it externally now just to keep it separate because [of what] I've been through"* (Int10). For Int12, a lack of trust was a distinct barrier to accessing support: *"I was convinced that like if I told someone something, they would then tell someone else"* (Int12), they went on to suggest how having the ability to *"keep track of who knew what about me"* (Int12) would help to alleviate these concerns.

This was seen as less of an issue when using digital mental health platforms however, due to an opportunity for greater anonymity and no tangible links between an authority (teacher, counsellor, parents): *" I've shared before how I am LGBT+ and, it's just me, y'know. It's not the same as if I'm talking with [telephone service], where they'll be like 'okay, what's your name, who's your emergency contact'. I can just tell them whatever."* (Int8).

4.4 Challenges with Current Digital Mental Health Support

Due to the nature of recruitment, all of the participants had experience with using online mental health services (e.g. text-based one-on-one support from a councillor, access to informational support through mental health resources, peer support through online forums) and as such, this framed their experiences throughout the survey and interviews. Over half of the survey participants (n=19, 59%) and all of the interview participants also had experiences with in-person mental health services.

In our interviews with young people, they discussed the emotional support and sense of community which was fostered through using online forums. Several participants described how these had helped to put their own problems into context: *"when I go through them I can see how I put it into context, or how I write when I'm sad or angry. And I can reflect on how I'm feeling at that time, so I can make myself feel better next time"* (Int9), and even provided support around how to put their own, culturally relevant, issues into context for a therapist in the future: *"I've got some useful stuff before [...] like, y'know, how to talk to your therapist about [being] Hindi. Like, what to avoid, because sometimes not everyone you talk to on there [online counsellors] really gets how bad it can be in school"* (Int10). Outside of more formal online interaction mechanisms, nuanced, emotional interactions with close online social networks (e.g. on social media or gaming platforms like Twitch) were also discussed. One participant reflected on how it was her Twitch friends who really noticed when she was experiencing a period of bad mental health: *"it's my online friends who know that. [...] like, we'll just be typing [...] they see that I go quiet. I give short answers. That sort of thing. It's really minimal, but it's enough that they pick up on it and ask 'oh [participant], are you okay?'"* (Int12). However, particularly in the discussion of online forums, several participants described how they often found themselves as observers, rather than active partakers: *"I don't really start the conversations, but like, uh, I'll join in if they happen to be happening"* (Int13), and *"I'll mostly just watch threads or topics as they happen. I don't really enjoy taking part"* (Int10). In addition one participant discussed how the moderation of forum posts, a process usually conducted by community leaders or website moderators to ensure community safety and screen for crisis situations, led to delays in getting help when needed: *"it would be nice if they could do it faster, when I wrote mine up and when they posted it it was like after the issue, so I didn't get the advice that I needed at the time"* (Int6).

In relation to informational support available to participants, our survey participants highlighted mixed views. Around 62% (n=20) participants felt they did have enough information about mental health, coming from sources such as the internet (n=12), school (n=5), social media (n=2), and Youtube (n=1). However, the majority of survey respondents (75%, n=24) felt that they were not represented in the information they were given about mental health from digital mental health tools. Two participants commented in free-text: *"I never see people in my situation or with my background receiving help with their mental health so I always viewed it as a white person thing "* and *"no one gives information on how to talk to black parents, or POC [person of colour] parents and the pressures on black girls"*.

When it came to more formal support mechanisms (i.e. speaking with a therapist) insight was provided from our interview participants about the trade-offs between receiving this support online vs. offline. In particular, participants commented how emotion, expression and empathy for cultural issues were more easily conveyed in person, as opposed to the online domain, where this did not come across as clearly:

"with a professional in person, you feel like it's a real thing, um you feel validated in a sense [...] whenever you're talking on a phone or like behind the screen it feels like it's not something real. It's not really tangible [...] you could be talking to like a computer or someone who just doesn't care, someone who's just looking like straight faced at a screen [...] talking to someone in real life, they have emotions, and you can very much see the fact that there's a real life person who is taking time to like listen to you and understand you and help you" (Int9)

This was built upon further, by another participant, who described her experiences with in-person therapy, likening it to the very intimate and personal experience of going to confession as a Catholic:

"I had face to face appointments and that's what made the big difference cuz it was actually sitting down, talking to someone and then actually getting like handouts. And then they could actually see.. y'know, like, say in the confessional in church, we can go up to the father, bow our heads and sit down and confess [...] with mental health sometimes it's hard to open up but obviously when you're sat in front of someone it's special [...] someone who's professional can sometimes tell by your body language and stuff like that" (Int14)

Lastly, our phase 2 survey participants were explicitly asked to select the features that they would like to see in future digital mental health tools to support their needs from a multiple choice selection. These are summarised below in Table 2. Having the option for one-on-one therapy or counselling with CALD professionals was by far the most desired feature (n=26, 81%).

5 DISCUSSION

Through this work, we have explored the challenges that CALD young people face when trying to access mental health support. In this section, we discuss how insights from this study should inform 1) the design of future digital mental health tools that are inclusive to the needs of culturally diverse communities and 2) inform how CALD communities might be better engaged in digital mental health research and development through inclusive design practices. Our discussion is structured as follows, to elucidate the key take-home messages of our work. We first discuss how we might find ways to encourage access to digital mental health tools for CALD young people in the future. We then describe opportunities for enhancing CALD young people's representation within digital mental health tools, before considering how we might support the supporters of CALD young people (e.g. therapists, volunteers, peers) on digital mental health platforms. We then discuss how we can help to create a sense of community for CALD users on digital mental health platforms. Finally, we present a call to action for HCI researchers around diversity reporting and the inclusion of culturally diverse populations in future research.

5.1 Encouraging Access to Digital Mental Health Tools for CALD Young People

We found notions of fear and trust to be prominent across all phases of our study. The young people reported concerns about not being taken seriously, and facing significant feelings of stigma (which led to issues discussing mental health with their families), and reported either fears, or indeed first-hand accounts, of their specific experiences not being understood by professionals from different backgrounds. In several cases, participants reported explicit breaches of trust from clinical professionals or school staff. Trust is vitally

Type of Support	Support Feature	Frequency (n)
Therapy Counseling	Therapy/counselling (individual) with CALD professionals	2
	Therapy/counselling (individual) with non-CALD professionals	18
	Therapy/counselling (group) with CALD professionals	17
	Therapy/counselling (group) with non-CALD professionals	16
Peer Support	Chat rooms (e.g., one-on-one or small group chats with other members)	15
	Talks from others with similar experiences/backgrounds about mental health (e.g. Instagram or Facebook Live)	15
	Forum (e.g., to discuss mental health publicly with other members)	14
	Advice sections (e.g., FAQs)	13
	Peer support	11
	Activities (e.g., sharing photos, weekly challenges)	9
Information	News feeds (e.g., to keep up to date with other members activities)	8
	Educational materials (e.g., articles on mental health, links to other sites/information)	6

Table 2: Participant preferences for features in future digital mental health tools

important in the design of digital mental health interventions [95]. Many young people experience issues of trust concerning either a lack of confidence in their psychotherapist to meet their needs or in their ability to protect their data privacy [120]. Our participants' own experiences reinforce this and suggested a need to, as [95] discuss, embed trust into both the information provided by digital mental health tools, and the trustworthiness of counsellors on digital mental health platforms.

These kinds of experiences and overarching concerns present significant barriers to CALD young people's access to mental health services and should be paramount in designers' considerations around the design of new digital tools to support mental health. Creating a 'safe space' where young people feel comfortable to express themselves is of critical importance [87]. Particularly in the digital space, where it is common for young people to speak to a different supporter each time they visit a platform [e.g. Headspace [41], Kooth [53]], building trust without continuity of care can be challenging. For example, for our participants, offline support was often deemed better than online due to qualities of empathy, and the ability to view body language and facial expression, which represents a significant trade-off concerning the quick access to support that digital services provide [92] [59]. While it is clear that just-in-time digital interventions are valuable, they need to be carefully designed to encourage a level of these face-to-face qualities that users value. For example, a study Beilharz et al. [9] used virtual avatars in a chatbot context to develop a sense of approachability when interacting with the chatbot, and to create a playful environment for the user. Participants in the study particularly valued the avatar's non-judgemental and engaging nature.

One other potential option to build trust in digital intervention tools that incorporate a therapeutic element (i.e. one-on-one support, whether this be with a therapist or peer) would be to create transparency and openness regarding the use of data [76], and how crisis management (which must inevitably be built in) will be operationalised. This could be achieved through the use of digital contracts signed by both the young person and their supporter prior to each session.

Aside from issues with initial access to services, our interview findings highlighted significant challenges for CALD young people around the transition from child services to adult services when turning 18. In many discussions with our participants, this transition was described as being a complete cut-off point for mental health support. There is a clear opportunity here for future digital mental health tools either to offer formal support and stimulate help-seeking behaviour within young people in this critical age bracket [88], or to serve as transitory support tools whilst they are in this transitional stage (e.g. the through use of single session interventions [100] [119]). For many young people, this transitional stage brings new challenges (e.g. legally becoming an adult, leaving school, potentially entering the workforce for the first time, attending University). For young people from CALD backgrounds, these challenges may be even more heightened (e.g. pressure from family to succeed, entering a career path that their family wants instead of what they want, managing being around alcohol or other substances, or romantic dating practices that might be at odds with their cultural or religious upbringing) [77]. For this reason, it is even more important that these types of transitional support tools are designed with users from diverse cultural backgrounds, to ensure their unique experiences are accounted for.

5.2 Enhancing Representation of CALD young people in Digital Mental Health Tools

Our findings showed that when CALD young people did access and use digital mental health tools, they did not feel that they were sufficiently represented within them. It is always going to be a challenge to represent every possible culture in a single instance; indeed when our participants were able to self-identify their ethnicity they had extensive unique ways of doing so. This echoes Milner & Jumbe's [70] comments relating to the reductionist nature of catchall terms like Black, Asian and Minority Ethnic (BAME), in that it does not necessarily reflect how individuals would want to self-identify. Co-designing future digital mental health solutions with a diversity of CALD users is one way to encourage the creation of content representing diverse experiences and cultural identities. This builds on Hoffman et al.'s [42] work, which suggests that giving young service users greater autonomy over the design of their services is reciprocally beneficial for their well-being in turn. However, another possible way to ensure content represents a broad range of users could be to scaffold opportunities for participatory content creation. This could enable users to shape their own narratives and the representation they wish to have [66] [43]. The use of audio and video to share stories is increasingly common (e.g. with podcasts, vlogs, TikTok, Instagram reels), where this medium can share and convey emotional connections and promote empathy [43]. It has also been reported in the literature that young people prefer audio-visual media to receive health-related information, as opposed to written text [67]. Further, using audio-based methods alone might provide greater anonymity, which some of our participants desired, allowing for greater creative expressions of their own media stories to be shared, without necessarily presenting identifying information.

Our findings also showed a need to better consider personalising digital mental health services to cater to people's specific experiences. For example, there are several 'culturally adapted' psychotherapies available in the offline space, which aim to integrate cultural values into various cognitive behavioural strategies [2] [112]. This overlaps with 'population-targeted design', which aims to help minimise cultural differences, for instance, by targeting and matching the user's language, literacy levels, cultural health beliefs and attitudes, age groups, eating practices, and family values, which may vary from person to person [107].

Within the clinical literature, certain principles that guide the adaptation of preventive interventions based on a patient's characteristics [19] might also be usefully leveraged for the development of digitised mental health services for CALD communities. For example, Friis-Healy et al. [32] describe how SMART (Sequential, Multiple Assignment Randomized Trials) [3] [60], clinical trial design- wherein the intervention is adapted or re-randomized depending on a patient's responses to the intervention at specific points in time- may have the potential to facilitate the personalisation of digital mental health services based on user characteristics and time-varying attributes [32]. This design enables the identification of the most suitable intervention and strategies that are personalised to a particular subpopulation.

We further suggest that rather than culturally adapting Western tools and therapeutic methods, we could be learning from and adapting tools and resources from other countries, which integrate content specific to cultural contexts (e.g. religious practices such as Ramadan or faith-based mental health support). For example, Garbett et al. [35] created a digital intervention for body dissatisfaction, as a prevention for eating disorder formation, with and for Indonesian women. The intervention addressed body image issues prominent in Indonesia such as body weight and skin color and targeted the promotion of positive body image through incorporating story-telling videos and interactive activities that represented various ethnicities within Indonesia, with diverse skin color, body shape, religion (portrayed through religious dress), and regional accents.

5.3 Supporting the Supporters

Our study highlighted several challenges relating to the fact that mental health concepts do not always translate to other languages (from English) or cultural contexts (from Westernised conceptualisations of mental health). This can be an especially difficult area to navigate, where cultural misunderstandings could lead to incorrect diagnoses or treatment pathways. In addition, a lack of cultural understanding displayed by therapists (whether this was explicit instances, or fears from the young person that their experience would not be understood), as well as a lack of culturally relevant informational resources, were seen as a significant barrier to receiving mental health support. This echoes previous findings from the literature [22] [69] [94]. Related to this, the option of having one-on-one support from CALD professionals was the most prominent desired feature for future digital mental health tools expressed by our survey participants. Increasing access to CALD professionals on digital mental health platforms is of course the ideal scenario, however in reality this suggestion is challenging to implement and, as we have previously discussed, the catchall term of CALD is reductionist by nature; not all therapists from CALD background will be able to understand specific experiences from cultures other than their own. As such, we believe that the focus for future work in this area should be on facilitating the training and support of staff and volunteers.

There is significant potential in the role of Machine Learning and AI to help staff or volunteers on digital mental health platforms scaffold their interactions with help-seekers. For example, chatbots have previously been used in the mental health space to alleviate staffing pressures (e.g. Tess [33] and Wysa [44]). In addition, Natural Language Processing (NLP) models have been successfully used in the education and service sectors to assist verbal (call) and written (chat) requests [79]. Thus, there is a potential for NLP models to be effectively applied on helpline calls or text-based interactions, which could provide real-time cues to staff relating to specific culturally contextual challenges. This is a clear direction for future work and would not only help individuals, but would also serve to train and support staff and volunteers to diversify their awareness and promote cross-cultural empathy.

Nevertheless, while machine learning presents certain advantages, caution must be exercised during the design and development of digital interventions in terms of accuracy, security and accountability [57]. In a recent example, a generative chatbot named Tessa, which was designed to support help-seekers on a national eating

disorder charity website, sent messages encouraging weight loss and calorie counting to users [122] before it was discontinued. This highlights the need to provide careful consideration regarding algorithmic behaviour for digital mental health interventions. Ethical considerations also play a major role in utilizing non-human technology for digital interventions. For instance, a therapy program (Koko) faced backlash when its founder revealed the use of GPT-3 to interact with users, as a form of testing a chatbot, without disclosing that users were conversing with a non-human entity [122]. Besides this, the training and modelling of AI can be influenced by societal biases (e.g. racial, and gender) if training data is not diverse enough. For instance, an AI-driven dermatological algorithm, aiming to automate the detection of skin cancer, exhibited high accuracy in classifying skin lesions for Caucasian skin but performed significantly less accurately for patients with darker skin tones [48]. This finding was correlated to the fact that the training dataset of the algorithm consisted primarily (90%) of images of skin lesions from Caucasian skin. AI biases represent a significant concern spanning across different fields. For example, AI-driven algorithms within the judiciary system were found to assign harsher sentences to Black individuals [14], and Amazon's AI-driven resumé screening system exhibited discriminatory tendencies towards women [5]. This raises the need for serious considerations about ethical, inclusive and transparent practices in digital health intervention development.

5.4 Creating Community for CALD users

Conveying a sense of a welcoming community in digital mental health tools can go a long way towards generating feelings of empathy and validation for young people. This is particularly relevant for CALD young people who are inherently excluded or, as previously mentioned, may have misconceptions about what mental health support is [107]. This is not only achieved by designers of digital tools aimed for self-directed support, or the staff and volunteers who might provide more formal support on digital platforms, but can also be created through peer support mechanisms [68] [8]. Peer support in both online and offline settings is highly beneficial to those experiencing a variety of challenges, including mental health [103] [114] [101], and is typically seen as an element across a variety of online youth mental health platforms [41] [108] [53]. However, while this allows young people to build rapport with others with similar backgrounds and share experiences, it is important to acknowledge the burden that this can have on the peers who take a more active role in supporting others [103], particularly for people from CALD backgrounds, where, as our findings show, there is already a pressure to educate others regarding their cultural contexts. That said, peer education within communities is a successful dynamic due to bespoke cultural knowledge and social understanding [65] and, as such, is a valuable avenue of support mechanism to explore in digital offerings. Active contributors or explicit volunteers in peer-supported tools may have a role in moderating content or ensuring community posts are responded to. These individuals therefore may require specific training in common mental health issues [31], e.g. mental health first aid, which has been shown to improve mental health literacy and skills in assisting CALD young people [111]. Understanding the gaps in training needs and the best ways to support peer supporters, who often have lived experience themselves, is an important direction for future research.

Successful peer support relies on trust and empathy. This is especially true when we digitise peer support services that allow for anonymity (e.g. using text-based interactions) [102]. However, there is a need to consider engagement styles when designing digital mental health tools that contain elements of peer support. Our findings showed that many of our participants exhibited 'lurking' behaviours (i.e. passively viewing posts) [74], as opposed to being active contributors to online peer support forums. Whether this is just our sample, or if it is explicitly due to a feeling that their CALD experience might be less understood by a general population on an anonymous platform, is unknown. Existing literature has explored the concept of lurking in other health domains and has suggested that there are still benefits to users around feeling empowered, through developing a better understanding of their condition [113], however, there is a distinct lack of literature exploring engagement styles for peer support in the mental health domain, and none that we could find which has looked at this from a CALD perspective. Future work should consider the impact that passive vs active engagement in peer support tools might have on young people from CALD communities, and should consider how to elicit the views of lurkers to ensure they are benefiting as much as possible from peer-supported tools.

5.5 A Call to Action for the HCI Community

The lack of ethnicity (and religion) reporting in both academia [73] and within (particularly UK) healthcare data itself [26] demonstrates a need for a culture shift, in terms of capturing diversity data in research involving human participants. Research undertaken by Linxen et al. [62], which examined seven HCI conference proceedings and journals from the years 2010 and 2016-2020, revealed that merely 1.9% of the articles took culture into account within their studies. Considering the significant role of culture that we have presented through our work, this statistic needs improvement. Without having an understanding of how cultural factors might intersect with digital intervention delivery and design, we cannot consider how our findings might apply to broad multi-cultural societies [29]. In our survey and interviews with CALD young people, we enabled participants to self-report their ethnicity and we found that almost all participants described themselves as something different (26/32 unique self-identifications in the survey and 6/9 in the interviews). These nuances are lost when considering that all users (with the exception of Int12 and Int14) would have fallen into the 'CALD' category. Having a richer understanding of cultural context and background could generate more insightful research and hopefully re-balance (or at least highlight) the overuse of WEIRD samples [73]. We call for the HCI community to actively consider the inclusion of enquiries into cultural experiences around technology use and design in their future work. This echoes similar calls from literature outside of HCI e.g. [91] [57] [32] [30] [106] which highlight the need for diverse perspectives in digital mental health research.

Further, particularly in the digital health space, where individuals from CALD backgrounds are most likely to be disproportionately affected by health disparities in formal care [49], there must be more conscious involvement by researchers to reach culturally diverse

groups of participants. There is a need to integrate participants as an integral part of the team rather than treating them as external entities solely offering their experiences as stories for research [106]. This is not always an easy task and we acknowledge the challenge of potentially misrepresenting the experiences of entire cultural groups with the views of small numbers of participants. However, we believe that the value in understanding how cultural attitudes, beliefs and the broader cultural context in communities might impact people's experiences of using, and indeed benefiting, from digital health technologies, is worth the effort. In our study, we engaged with two different youth organisations to recruit both professionals and young people. Working with these organisations was vitally important to ensure we were not only reaching culturally diverse participants, but also ensuring that recruitment material and our planned engagements with the young people were culturally sensitive. We urge HCI researchers to take a similar approach by working with community organisations, or community representatives, to co-create future research.

6 LIMITATIONS

This study sought to be as diverse as possible in the representation of our sample, in relation to race, religion, ethnicity and other characteristics that meet the CALD definition. Nevertheless, our sample was selected on a first-come-first-serve basis, with young people responding to the study recruitment advertisement. This study was exploratory in nature and it was not our intent to generalise our findings to any specific CALD community, but rather acknowledge the individual differences, challenges and personal circumstances that our participants expressed. As such, future work to understand the specific experiences of different cultural groups in relation to mental health would be valuable.

Further, one facet of young people's upbringing that was mentioned by professionals, but that was largely under-explored in our study, was socio-economic status (SES) and how this impacts routes to access to mental health services, both offline and online. For example, whether a person can financially afford to access private healthcare, when compared to state-funded health services. Investigating SES in-depth yields its own additional set of challenges and avenues of discussion and, as such, would warrant a recruitment process that was beyond the remit of this study. As such, we suggest future research which explores this demographic in greater detail, with the aim of capturing any additional disparities that may arise as a result of socio-economic differences.

Whilst we chose to start our study with professional interviews to orientate the research team to the specific challenges that CALD young people might face, we do acknowledge that this approach may have, to some degree, limited our line of questioning in the survey. Future research could consider bringing youth representatives into the initial survey design phase to ensure that important topics are not being missed.

We also specifically acknowledge that our participant demographics were almost exclusively female, and that all of our in-depth insights from the stage 3 interviews were from female participants. This is understandably a bias in our data and omits discussion of other potentially important topics from the male perspective, which, as [90] suggest, might include for example hiding mental health conditions due to stigma or perceptions of poor mental health being socially regarded as a personal weakness. Using a different sampling method allowing for purposive sampling of male (and other gender identifying) participants could have helped to secure greater gender diversity. There is a critical need to explore better ways to engage male CALD participants in future explorations around digital mental health to ensure their insights are embedded in the design of future tools.

7 CONCLUSION

We interviewed professionals, and conducted a survey and interview study with young people, to better understand the challenges and barriers that young people from CALD backgrounds experience, due to factors such as a lack of inclusivity within services, cultural expectations, stigma, and biases within the mental healthcare systems in the UK. We found these health disparities remain prominent and need to be addressed. We suggest that greater consideration be given the trust issues and stigma that young people have experienced offline, when attempting to engage with them in the digital mental health space. Through our paper we proposed several design opportunities that focus on improving access to, and enhancing representation in, digital mental health tools for CALD young people in the future. We highlight specific directions for future research around bridging the gap between transitional services, and gaining an understanding of engagement behaviours in peer supported tools. Finally we have presented a critical call to action for HCI researchers around diversity reporting and the inclusion of culturally diverse populations in future research.

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