

“Like Shock Absorbers”: Understanding the Human Infrastructures of Technology-Mediated Mental Health Support

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ABSTRACT

Significant research in HCI and beyond has sought to understand end-user needs in formal and informal technology-mediated mental health support (TMMHS) systems. However, little work has been done to understand the experiences and needs of the individuals who power or support these systems, particularly in the Global South. We present a qualitative study of one of the most accessible forms of mental health care in India—helplines. Through in-depth interviews conducted with 12 helpline volunteers, we research the *human infrastructure* responsible for the functioning of helplines. We foreground the often invisible labor involved in erecting and maintaining the institutional, interpersonal, and individual boundaries that are critical to realizing the goals of these helplines. Finally, we discuss the implications of our research for future work examining human infrastructures, particularly in mental health settings, and for the design of future TMMHS systems that deliver on-demand care to diverse, underserved, and stigmatized populations.

Author Keywords

India; help-seeking; mental health; helplines; HCI4D

CCS Concepts

•Human-centered computing → Empirical studies in HCI;
Ethnographic studies; User studies;

INTRODUCTION

“We are like shock absorbers. We get that shock and we absorb that shock. But we definitely need to release that shock, because it would be a big issue for us, if we suffer those kinds of emotions.”—Muthuraman (Helpline D)

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As a consequence of social stigma, difficulty in accessing care, and a vast shortage of trained mental health professionals, the needs of people experiencing debilitating mental distress are not being met globally, particularly in the Global South [57]. Half of all people experiencing a mental illness do not receive any treatment, and in the Global South, this number is as high as 90% [49, 56, 59]. In addressing this global shortage of mental health professionals [50], research, such as through the National Institute of Mental Health’s (NIMH) “Grand Challenges in Global Mental Health” initiative [12], has recognized that efforts to alleviate this gap cannot be successful without strategies that are sensitive to the community needs, cultural norms, and resource constraints of a particular area [50, 57].

To address this dire and worldwide treatment gap, there has been a growing focus on designing technology-mediated care to support people experiencing mental health challenges [25, 39, 46, 55, 69]. Recent research in human-computer interaction (HCI) has also actively explored the role that technology [6, 47] and artificial intelligence (AI) [14, 27, 61, 64, 64] can play in mental health. Recent efforts to build online counseling and therapy tools, such as 7 Cups of Tea [53], Talkspace [74], or Crisis Text Line [41], have been aimed at scaling up services to address the global mental health treatment gap. However, with the delivery of these Technology Mediated Mental Health Support (TMMHS) systems, little work has been done to understand the *labor* performed by the individuals who make up the foundation of these support infrastructures, such as volunteers or peer supporters, and even less work has been done examining the specific roles of these individuals in resource-constrained contexts.

We address this gap by investigating the human infrastructure [40] underlying a basic and widely used form of TMMHS: mental health helplines (MHH). MHHs, started in 1953 [76], are one globally ubiquitous way that people find mental health support in times of need or crisis [71, 72]. In India in particular, MHHs can often be the only feasible means for individuals to get access to some kind of mental health support [11]. Given this unique role, and operating within the boundaries of what

care is available, volunteers are often tasked with responding to a variety of inquiries from callers, including requests for information, referrals to clinicians, emotional support, and occasionally, psychotherapeutic support and crisis counseling. Though trained, these volunteers often do not have any professional background in counseling, and are trained by their institutions to give this wide variety of support [71]. Additionally, in the absence of a support infrastructure in which local agencies can be contacted when a person in crisis [50, 72], volunteers have a unique burden to help callers as best as they can, often in life-or-death situations. Recognizing this immense importance of MHHs in the Indian mental health ecosystem, we investigate MHHs currently operating in India.

In this paper, we ask: **what is the human infrastructure underlying these helpline-based support networks?** We examine deeply the experiences of the volunteers who work for these helplines, and the often invisible and fundamentally human labor that goes into negotiating caller needs and providing value to callers without being overwhelmed. To do this examination of volunteer experience, we conducted 12 in-depth interviews with volunteers at 5 MHHs widely used in India, asking them about volunteer experience, caller needs, and individual motivations for joining and doing work for the helpline. Our findings highlight the labors involved in operating these helplines, as volunteers consistently went above and beyond the call of duty to deliver the best care possible within the scope of their roles.

Our research makes multiple contributions. First, we highlight the (often invisible) labor that lies at the foundation of most TMMHS systems. Second, though many TMMHS systems have some level of anonymity, we further highlight the impact that socioeconomic class and culture can have on how care is accessed, understood, and given. Finally, we highlight the importance of deeply considering the diverse background, motivations, and identities of the individuals who make up human infrastructures, particularly in mental health settings. In foregrounding the lives of the individuals that support this greater infrastructure, we propose design recommendations for such systems to integrate processes that protect and support the volunteers that underlie the care the system enables.

Content Warning: In discussing the emotionally intense labor that volunteers experience working on helplines, this paper presents graphic and potentially painful descriptions of mental distress, illness, and suicide. If you are feeling any level of mental distress or like you do not want to live, you can find the helpline number for US-based helplines at <https://suicidepreventionlifeline.org>, and the helpline numbers for Indian helplines at <https://thelivelovelaughfoundation.org/helpline.html>.

RELATED WORK

Technology-Mediated Care for Mental Health

While recent work discusses TMMHS in the form of mobile applications [17], the first forms of TMMHS systems were telepsychiatry systems [68] and suicide prevention hotlines [54], both established in the 1950s.

As mobile and Internet-based technology became more accessible, mobile interventions for mental health that took

exercises from commonly used therapies were widely-researched [3, 17]. Though mobile interventions can both be guided by another person or self-guided, in many of these studies, mobile interventions had some form of mental health professional [5] or peer supporter [25, 46] to help guide and encourage people through therapeutic exercises. In their study of the impact of this guidance on Internet-based interventions for mental health, Baumeister et al. [4] did a meta-analysis of eight studies that compared guided and unguided interventions, and found that guided interventions were superior to unguided interventions.

With the important role that humans play in the provision and maintenance of mental health care, the field of HCI has also taken a deep look at how family members [47, 69, 78], peer supporters [25, 46, 55, 61], and others in an individual's support network [6] may have an influence on an individual's mental healthcare. In their study of family caregivers of people experiencing depression, Yamashita et al. [78] found that caregivers often felt stressed by their responsibilities, but were also conflicted in when and how they could share their distress. Similarly, Murnane et al. [47] describe a complex web of stakeholders and caregivers that have an influence on an individual's mental health, noting that the nature and stability of these relationships can often influence an individual's mental health.

Though work has been done in HCI to understand the role of family caregivers for those with mental health issues, little work has been done to understand the informal supporters that form the basis for guided technology-mediated mental health interventions. In this study, we unpack the role played by these informal supporters, with a focus on mental health helplines in India, a TMMHS system that is commonly used [52] and particularly accessible [11, 71].

Frontline Health Work in HCI

Substantial has also been done in HCI to understand how technology can play a role in healthcare deliverance globally, with a particular focus on the role of frontline health workers (FHWs) to make care more accessible in the Global South (e.g., [9, 15]). Their role has been richly studied across multiple contexts, such as maternal and newborn health, last-mile delivery of care, increasing adherence to scheduled visits, among other areas (e.g., [16, 37, 60]) Although these FHWs may not have the same type of formal training that medical professionals do, the care they provide can sometimes be more valuable and accessible than the formal care often found in a clinic-based setting from health professionals [9, 15, 57]. Being a first point of access to any kind of health care, FHWs often face a unique set of challenges and demands on labor when compared to typical health professionals. For example, Kumar et al. [37] describe the "restoration work" done by FHWs in India, or the everyday challenges faced in addressing the needs of HIV-affected individuals.

Our research focuses on care work of one kind of FHWs—volunteers at MHHs in India. Past work studying MHHs has looked at the motivations and burden of individuals volunteering on MHHs in the U.K. [70] and U.S. [26], or of the demographics or usage practices of callers in India [11, 71, 72]. However, unlike volunteers in the U.S. or U.K., volunteers in

India are often the first point of care for individuals experiencing mental health issues [11], and work in a low-resource, culturally diverse, and particularly stigmatized context. We characterize their work as a form of “care work,” in which they perform unpaid labor to provide both informal health-care services and general support, and help people develop better health [19] through the exploration and resolution of distress. The volunteers’ care work presents specific challenges and constraints in a resource-constrained context, which we examine deeply.

Human Infrastructures

As past work in clinical psychology and social work describes, the process of helping another person experiencing emotional or mental distress is a fundamentally human endeavor, with empathy [21], the depth of the relationship between the supporter and supported [38], and an honest commitment to non-judgmental listening and affirmation [31] being at the core of what brings therapeutic relief. Past work in HCI [55] and clinical mental health interventions [4] has also found that the presence of a human during technology-mediated interventions can be an important part of the process of bringing relief to those experiencing distress. With global pushes towards automation, it is particularly critical to understand the role of the humans who form the basis of technology-mediated systems, particularly in mental health, a field in which human connection is often life-saving [44]. Past research in HCI has drawn particular attention to the humans who support technology-mediated systems, through the lens of examining the *human infrastructures* behind these systems. Past work looking at human infrastructures in HCI and ICTD has characterized human infrastructures as “shared social practices, flows of information and materials, and the creative processes that are engaged in building and maintaining” technology that delivers some service or application [65] or for some “work to be accomplished” [18, 40]. This work makes use of infrastructural inversion [40, 65, 73] to examine the relationships between actors as they contribute to some greater work.

In this framing, the human infrastructure is examined via the work that is being accomplished—the practice of collaborative biomedical research [40] and the use of technology to share media in resource-limited settings [65]. However, while Sambasivan et al. [65] acknowledge the importance of a focus on the human elements of human infrastructure, the identities of those individuals who accomplish the work described are complementary but not necessarily crucial to the work being done. As Dye et al. [18] note in the case of individuals who work to share collections of Internet media personalized to their specific communities, membership to the community in which this work happens can be central to the effectiveness of the infrastructure meeting specific needs. In this paper, given the importance of human connection to mental health support, we use a human infrastructure lens to look more deeply at the backgrounds, motivations, and identities of those volunteers who support others via the helpline, emphasizing the importance of those factors when examining the contributions of individuals towards greater human infrastructures.

Helpline	Location (State) #	Calls Per Day	Opening Hours
Helpline A	Karnataka	12-18	Monday-Saturday, 10AM-5PM
Helpline B	Goa	6-10	Monday-Friday, 1PM-7PM
Helpline C	Maharashtra	8-10	All days, 12PM-8PM
Helpline D	Kerala	6	All days, 10AM-7PM
Helpline E	Kerala	1	Monday-Saturday, 1PM-5PM

Table 1. Helpline Details. As community-driven organizations with varied locations, each helpline had slightly different numbers of calls coming in and hours of operation.

Name	Helpline #	Background	Gender
Shubham	A	Software Engineer	Male
Gomez	A	Retiree	Male
Aanchal	A	Retired School Principal	Female
Maria	B	Musician	Female
Dr. João	B	Psychiatrist	Male
Aditya	C	Social Work	Male
Shakti	C	Professional Counselor	Male
Vidya	C	Social Work	Female
Shanti	C	Teacher	Female
Shreyas	C	Management Work	Male
Muthuraman	D	Lawyer	Male
Amrita	E	Retiree	Female

Table 2. Helpline Volunteers and Backgrounds. Dr. João and Shakti were founders of their helplines. Muthuraman was an overseer for all Befrienders India-affiliated lines. All names used are pseudonyms.

MENTAL HEALTH HELPLINES IN INDIA

Mental health helplines in India were established out of major cities in the late 1970s and early 1980s as crisis centers [71], with helpline aims and values being guided by the “Befriending” model of emotional support [76], or the focused goal of supporting individuals through crisis situations or helping individuals cope with suicidal ideation. As awareness of widespread mental distress became more prominent in subsequent decades, individuals in communities across India started MHHs to help support individuals through both crisis situations and non-crisis mental distress [71].

While some other countries have centralized national helplines [24, 34], as a result of the community-based origin of most MHHs in India as well as language constraints, there are many helplines in India [11]. There are 16 lines affiliated with Befrienders India [28] in geographically sparse and linguistically diverse areas, as well as many other helplines [22] that are not affiliated with Befrienders India. One main commonality across all lines is the Befrienders-based commitment to creating a non-advisory, non-judgmental, and empathetic space in which people can freely express the distress they are experiencing, and explore these feelings with a trained listener [76]. Volunteers are explicitly told not to make diagnoses or to give the caller advice. Rather, they are encouraged to hear the caller out and help them explore their feelings about the situation causing them distress, and then reflect those feelings back to the caller. These values are held to be consistent by Befrienders affiliated and inspired institutions in India, but individual helpline volunteers interpret these values into their daily practice in different ways, as we analyze in our Findings and Discussion.

Situated in this context of mental health helplines in India, our study focused on four volunteer helplines that are formally affiliated with Befrienders India (Helpline B, C, D, and E) and volunteer helplines that are not formally affiliated with Befrienders India but use Befriending techniques (Helpline A). Details about individual lines can be seen in Table 1, and details about individual volunteers can be seen in Table 2.

Terminology Following past work [59], we use the term “mental distress” to refer to potential symptoms of mental health issues that may or may not be diagnosed, such as feeling low or anxious. Similarly, we use the term “mental illness” or “mental disorder” to refer to mental health issues that are formally diagnosed as a mental illness. We choose to use the term “helpline volunteers” to refer to individuals who work as volunteers on a MHH, and following past research from counseling psychology [13], we use the term “callers” to refer to people who are calling a MHH.

METHODS

The goal of our IRB-approved study was to better understand the experiences of helpline volunteers in their interactions with callers. For this, we conducted 12 semi-structured interviews with helpline volunteers from 5 different helplines (see Table 2). Throughout the paper, all participant names have been replaced with pseudonyms. The questions we asked covered participants’ backgrounds and motivations, the training they had received for their jobs, the types of issues they discussed with their callers, the challenges they faced in responding to callers, and the strategies they employed to draw boundaries for their volunteer work. Examples included “Describe a good and a bad day at work?” and “What is the most difficult part of working on the helpline?”

Interviews took place January–August 2019, and were conducted by the first and/or second author in person with helpline volunteers, over the phone, or typed out and emailed based on the preference of the volunteer. When responses were typed out, follow up interviews were done with helpline volunteers to clarify points made. We relied on referrals via contacts made through the first author’s attendance at local training and a national conference organized by an Indian MHH, using snowball sampling to recruit more helpline volunteers to interview [67] until we had reached a point of saturation [7].

To analyze the data, we used an inductive and iterative approach to qualitative analysis, developing codes related to caller experience, and coding each interview transcript to identify themes. Responses to open-ended questions in interviews were coded using interpretative qualitative analysis [43]. We conducted “open coding” by looking at each response to each question and selecting out concepts. Further iterations of this coding process resulted in the formation of categories such as “origins and aims of the helpline” or “motivations for why people join the line.” We consolidated these categories into factors that highlight how helpline volunteers negotiate boundaries on the helpline, which we discuss next.

FINDINGS

Our findings convey that the helpline volunteers who comprise the foundation of the support network need to invest considerable labor into negotiating several different levels of boundaries with regards to their capabilities to help callers. This includes understanding and practicing their institutional boundaries, emphasizing these boundaries during interactions with callers, and making decisions on where the boundaries between their personal life and their work at the helpline lie.

Institutional Values and Boundaries

Participants described a gradual process of coming to understand their helpline’s institutional values, making sense of potential friction between those values and their own predisposition to be proactive, and finally coming to practice the values of the institution they were a part of.

Making Sense of Helpline Values

Several participants described how helplines were started by people with lived experience. Muthuraman shared that suicide helplines were frequently established by individuals who had personally been “*affected by a suicide*” and another participant shared that their helpline had similar roots:

*And [Helpline A] was started with and founded by a person who themselves had depression. And when he came out he thought after that [...] he thought there must be so many other people who may be needing help. And that’s how he was part of it. He and the National Institute of Mental Health Sciences joined together and founded this hotline.*¹—Gomez (Helpline A)

Participants noted that their conceptualization of what helplines and their volunteers were able to offer changed once they began volunteering. Through training, participants learned what their helplines’ values were, as well as the subsequent Befriending strategies associated with each value. In many cases, training challenged norms of what helpline volunteers had seen as acceptable or not-acceptable before.

The outside perspective is that you’re going to sit there and give a lot of help, and you’re gonna help people to get on with life, and repair it for them, and all that sorts of stuff. And that’s the first illusion they shatter within the first half hour of training.—Shreyas (Helpline C)

Each participant emphasized that volunteers were required to stay within institutional boundaries and not give callers advice, even when callers asked for it. Though counter-intuitive, volunteers noted the need to set aside the inner desire to “want” callers to take direct action, even if that action could save the caller’s life, grounded in an intense respect for caller agency and consent. Participants viewed their role as “holding space” (Aditya) in which people could express how they were feeling without judgment, and that the space was what caused the individual to explore their feelings and (hopefully) feel better, not necessarily due to any specific action by the individual volunteer. This language around creating and holding a “space” for callers to be able to freely express themselves was used by participants across helplines.

You don’t wish that this person will find a way out of what is happening to them. Or you don’t wish that this person won’t commit suicide, and stuff like that. Because that makes you biased, and that’s not what we’re supposed to be doing. [...] We’re a helpline, but all we’re doing is being available. We’re providing an active listening space, non-judgmental non-advisory safe space where [callers] can express and be themselves. And that helps [callers]! And obviously, if you do that well, that can

¹While we use the term “helpline” to refer to this form of TMMHS, participants often used the words helpline and hotline interchangeably. We use participants’ original wording in all quotes.

help them. But that's not the intent normally.

—Shreyas (Helpline C)

These overarching values, institutionalized by the helplines, sometimes brought up conflicts in the minds of participants, and were often initially challenging to practice due to the extreme scenarios volunteers were expected to service.

Translating Helpline Boundaries to Volunteer Practices

These institutional boundaries also had an impact on who could become a part of the helpline. The motivation for involvement by potential volunteers was assessed along with individual personality traits and beliefs. This was done to understand if volunteers were both mentally ready for the stresses of working on the helpline and had values that contributed to creating a non-judgmental space.

In the case of Helpline C, this interview process was a highly structured process in which potential volunteers would come into the office of the helpline and, if interested, fill out a 5-6 page screening form that asks questions of their opinions on issues involving stigmatized identities (such as those in the LGBT community, those who have had a child at a young age, or those with substance use issues), or those who have committed harm (such as those who have committed sexual offenses). This process was undertaken by helpline coordinators with the hope that volunteers not have any “*stronglined judgments*” (Shakti) that would affect their ability to be a non-judgmental volunteer. Aditya noted that if callers “*happened to say something that went against [the volunteer's] ideologies and value system,*” volunteers still needed to be able to “*be present and focus on the caller,*” acknowledging and setting aside any discomfort to avoid harming any deep connection established with the caller. Potential volunteers were also asked whether they have dealt with or are dealing with any ongoing emotional distress, and how they are feeling about it.

So that's one part of the screening. But the other part is if they've had emotional distress. So let's say you've lost someone with suicide. [...] So when that pain is very high, one tends to go into rescue mode, and try to change the person's mind. [...] That's not very helpful for the person experiencing the distress. They hear that all the time, right? So it's very important to be in a space when you're volunteering, where you are emotionally stable—relatively emotionally stable, we all have our ups and downs. But not going through something, some kind of transition...[Being in therapy] is fine, but then that's why the screening. To know where they are and their coping mechanisms and how they are dealing with things.

—Shakti (Helpline C)

Having ongoing emotional distress or undergoing treatment for it was not a detriment to an individual's potential to become a volunteer. However, not being open about this distress could be a potential exclusion criteria from working at Helpline C.

In practice, these value-influenced boundaries on who could become a volunteer and the actions a volunteer could take also intersected with what volunteers were able to do on the line. In the U.S., if an individual calls a MHH and the volunteer suspects some form of potential harm to the caller or others, protocol dictates that the police be called [29, 45]. Though

potentially harmful to people in crisis [23], calling the police becomes an action of last resort that American volunteers are able to rely on in the absence of safer alternatives. Multiple participants described how India did not have a reliable form of this infrastructure, and in the end, there was not much that volunteers could do if someone called the line after beginning the process of ending their life.

Content Warning: Graphic Description of Suicide

Another high risk caller is when the person has already consumed something or indulged in some form of self-harming behavior—maybe they have cut themselves, or taken some pills, or taken some poison. Then in that case, the call is a little different—we ask them. Do you want us to call someone? A close relative, an ambulance, the police. That's the first thing we ask—a close relative. Do you want us to tell somebody? Either there is a parent in the house, or a friend or a relative nearby that you want us to call. And there have been times where people have said that I felt so supported on the helpline and I wanted to call the helpline before I die, and they're just talking and they felt so connected that the helpline is the last place I want to talk. And then they pass away. [...] We hold the space, as discomfoting as it is for volunteers, we still hold the space because that's what we're here to do. We have to remind ourselves that it is about them, it is about their decision and we have to respect that no matter what. No matter if we are discomfoted or as much as we want that person to not die, we have to respect that. But we do ask, it is our job to ask them—do you want us to call the ambulance? Do you want us to call the police? Do you want us to call a relative? What is it that you want us to do? But again, there has to be a clear distinction to what we are offering and not offering.

—Aditya (Helpline C)

In cases where there was potential for harm, participants described a process of constantly asking for consent to call a family member, trusted friend, or the police, while also attempting to keep the person on the line. As the call progressed, they would revisit consent to see if action could be taken.

So we are proactive in actually trying to save him, but with his consent at all times. And if he doesn't give consent, then we revisit the consent again, later in the call. We divert, we ask him to go to a safer place, we ask if he can get protection from a friend. You know, intimate support. That's where we end it. Some centers, they'll go ahead and keep in touch with the person.

—Dr. João (Helpline B)

Consent was also needed with regards to whether volunteers could call a person back after a crisis call. Helplines had differing policies on whether, when, and how they would call back individuals in distress, ensuring as best as possible that the caller was free and in a safe place to talk when a call happened. Participants at all helplines saw this as an important responsibility—the responsibility to call individuals who had called in crisis back soon after the crisis call if this was something callers consented to.

In theory, standardized and value-derived protocols for volunteers ensured common standards of how care was delivered, regardless of the volunteer delivering care. However, there were differences in terms of how individual volunteers understood and interpreted these boundaries when on the line with callers, often doing their best to meet caller needs in the absence of easily accessible mental healthcare resources.

Needs and Boundaries in Interpersonal Exchanges

Though volunteers were trained in the boundaries of what the helpline could institutionally offer, it was also necessary for them to negotiate boundaries within each call. We found that participants were tasked with a delicate process of understanding what callers needed, understanding whether they could provide this need as a volunteer for the helpline, and then deciding whether there was a resource that could be more helpful that they could refer the caller to. We found that these referrals, along with the norm of callers calling repeatedly and forming relationships with helplines, made helpline volunteers one node in a greater informal support network for callers. We also found that, given the diverse background of callers, a knowledge of identity (including those identities that intersected with the caller's identity as someone with mental distress) and location was particularly helpful.

Negotiating Caller Needs

When a call came in, participants would first ask the caller if they had something on their mind that they wanted to share, and then within the first ten minutes of the call, ask very directly whether the caller was suicidal. In the case that the caller was suicidal, participants were required to try to keep the caller on the line for as long as possible through continuing to talk, and asking very direct questions about their plan to end their lives as well as overall feasibility. However, participants from every helpline acknowledged that the vast majority of callers were not suicidal, and that calls were diverse in content. As one participant mentioned, "each caller [has] a different need," (Shreyas) or that each call was different and diverse in terms of the issues that callers experienced. While there were some patterns to caller topics, such as relationships being the primary issue that people called about across helplines, helpline volunteers needed to be prepared and ready to listen actively to any situation in which a person may feel distress.

In many cases, callers would make demands of volunteers that they could not provide. Participants described a process of carefully continuing to follow the value-driven practices taught to them by the helpline while also validating the distress that the caller was in.

At times, there was this guy who had just lost his girlfriend, and he insisted that I give him a solution to try to get her back. And he was extremely insistent. He said [translated from Hindi] "I'm not going to let you go. Don't hang up the phone. Until you give me the solution, I'm going to continue to call." And I mean, you just sort of reflect that back to them. And after a while people get it, after some time they realize, [translated from Hindi] "Hey, what help are you gonna give me, you don't even know her, she left, what could you even you do?"—Shreyas (Helpline A)

In these situations, participants noted that they had to be clear to the callers that their job was to offer a space in which callers could feel supported, not necessarily to give them advice. However, some participants were willing to give advice and directives if they felt like the caller could really benefit from some guidance. Even if it may not have aligned directly with the directed practices of the helpline, participants felt like these actions were aligned with the general mission of the helpline.

To make them open up more, we generally tell that this is something that my friends have seen, or I have seen, but no personal details, which is not allowed. But these rules are sometimes broken by other [volunteers]—it's a personal call, but the helpline doesn't say you should do that. [...] In [the case of a person calling about the end of a relationship] specifically, it's because I know the issue, and ask the things that I think can contribute, such as if you're contacting her often and if you're still in touch and why you're still feeling like this. Those things I'll ask.—Shubham (Helpline A)

Shubham (Helpline A) noted that he would go ahead and offer directives (such as going out for a walk) and other potential coping mechanisms to callers if he felt like he had some experience with the kinds of issues that they were experiencing. Similarly, participants from Helpline A also noted that older volunteers were more likely to break policy and give advice to callers. They noted that this practice came from older volunteers feeling more able to pass down their experience and perspective to younger callers.

When explaining the rationale for why people called, participants attributed calls to a sense of loneliness on the part of the caller. Though volunteers were limited in how they could help these callers, by calling in, callers were connected to a support network that they often could not have anywhere else.

Establishing a Support Network

Participants noted that many would call out of curiosity over whether they had some form of mental health issue, as a result of both a lack of commonly accessible information about mental health in India [2,66] as well as help-seeking for mental health being widely stigmatized [10]. Shubham (Helpline A) and Shreyas (Helpline C) both noted that many callers would call to ask whether there was something wrong with them as a result of continued distress, and would often directly ask if they had depression.

Though volunteers were not allowed to give diagnoses, given the intensity of distress from callers, many participants did end up assessing caller distress and making a determination of the kind of help the caller needed. For example, participants from Helpline A noted that they would prescribe courses of action based on the kind of distress heard, refer callers to mental health professionals in the area if this distress seemed particularly intense, and directly ask callers about whether they were taking their psychiatric medication if they mentioned a psychiatric issue. In many cases, participants explained that callers would call the lines in lieu of formal mental health care, finding it more affordable and accessible than formal care.

And we get a lot of calls that come in where they say “We do not have the mind to go to a doctor, we don’t have money to go to a doctor”... many of them would share over the course of the conversation that they don’t have the money or the family is opposed. Even email will tell you straight, I don’t have money to consult, I am emailing.—Aditya (Helpline C)

As a result of differing levels of mental health literacy, all participants we interviewed had an institutionally maintained list of mental health professionals (both in the area and across India) to recommend to callers in the case that callers asked for resources or seemed to be presenting symptoms of a specific mental illness. Likewise, if issues pertained to domestic abuse or child abuse, participants would also assess the situation and refer the caller to a state or government helpline specific to their issues [8, 42]. We thus found that volunteers were one main avenue through which people were able to learn about and access a broader network of mental healthcare.

In the absence of accessible long-term therapy services, all participants described the practice of repeat calling, in which callers would consistently call the same helpline to continue to build upon their discussion of issues heard in the past. Some helplines (Helpline B) even noted that most of their callers were repeat callers. Participants from Helpline C noted that these repeat callers often called because they felt like they had a connection with the volunteers on the line that they had not found in therapy, even if they had access to it. Participants from Helpline C also noted that many repeat callers were conscious of the fact that they had a mental health issue, and would speak plainly about their medication or disorder.

We ask “Are you feeling better now? If you’re feeling better, you can call me again—I sit here from this time to this time. You can inform me on how good you are feeling, or even if you are not making any progress, you can tell me, it would be nice to talk to you.”—Maria (Helpline B)

Maria described the formation of a relationship between volunteers and callers, in which callers would call back to update volunteers on how they were doing, and if they had made progress. These were dubbed “*update calls*” and were the same length (30-45 min) as typical calls. Often these were shorter calls in which the caller was calling back to let the participant know they were doing okay. Similarly, participants at other helplines discussed that callers would think of them as their friends. Gomez (Helpline A) even noted that a repeat caller had been calling for 6-7 years, with the caller saying “*Okay, [Helpline A] means happiness for me—even if it’s just five minutes,*” including regular update calls.

In this sense, in the absence of accessible therapists, though not explicitly trained, helpline volunteers took on the role of providing a similar kind of support to what an individual would experience in therapy, including empathetic listening [48], behavioral activation exercises [20], and the formation of a therapeutic relationship [62].

Negotiating Differences in Language and Identity

Participants described that the MHHs would get a spike in calls from callers from lower socioeconomic strata whenever the numbers were posted on a television service or in a newspaper

article after a significant event concerning mental health (such as a prominent suicide) was reported. Calls from these groups were characterized by participants as more likely to be in local languages (as opposed to English or Hindi), and have what participants characterized as more “*existential*” or “*financial concerns*.” For example, Helpline C participants noted that after some outreach was done with people in rural areas, they began to receive calls from farmers struggling with finances. These individuals calling understood that this was a line that could help them, and wanted to better understand what exact kinds of assistance the helpline could give them. However, volunteers could only help through active listening and exploring distress, as they were not trained to give financial advice.

As callers would often call each number they could find until they got connected, participants noted that it was not unusual for calls to come in from people across India who spoke languages that the volunteers at the line did not speak. In these situations, different helplines had different strategies, either referring the person as best they could to a line that spoke their language, or asking the individual to call back when a counselor who did speak their language was working.

They’ll say “is there somebody who can speak in Hindi?” or ‘is there somebody who can speak in Telugu?” [...] So I tell them in Hindi, “I know Hindi too, I can speak a bit, can you understand me?” Then we will revert. Or if it’s like in Telugu then I say “sorry I don’t know this language, there’s a volunteer who comes at this time, if you don’t mind you can call on that time.” [...] Then we’ll have to make do in whatever language we can. Just try to explain to him. Most of the time, Hindi, most of the people can manage. They can manage a bit of Hindi. So if you tell them in a Hindi-English mixture, they do get it.—Gomez (Helpline A)

It was also possible for calls to come in from people who wanted to speak a language that the counselor was only familiar with but not comfortable in. Vidya noted that in these situations, she would ask if the caller would be willing to switch to the language she was familiar with so she could help. However, many participants acknowledged that when in distress, callers would call and speak in their language of comfort. For the participants we spoke to, a common understanding of the background and language of the caller made it easier to understand why a caller may be in distress.

Gender also interacted with ease of access in the use of MHHs. Only some helplines were able to accommodate requests by callers to talk to a helpline volunteer from the same gender identity as the caller. Participants explained this inability as a result of constraints with regards to when certain volunteers were available for shifts, as shifts for volunteers generally lasted two hours. Participants also felt that accommodating requests for the volunteer that a caller wanted to talk to could put undue stress and responsibility on the volunteers.

They often ask, if they’ve felt really connected with a volunteer, if I call tomorrow at the same time, will I be able to talk to that person? We don’t say no, but we just invite them to call as we would anyone else. “If there is any emotional distress, you can call between the hours

of 12 and 8.” We say that we are here for you. [...] Because even if I am manning the helpline this week on Wednesday evening, I don’t know if I’d be manning the helpline at the same time next week. [...] If their distress is stemming from sexual distress, they’ll ask for a woman volunteer or a male volunteer; if they are a woman or man respectively. [...] We accommodate it with a “You’re talking with me, you’re talking with me. If you’re talking about something personal and you want to share it with someone female, that’s that, but you’re talking to me right now. I’m here.”—Aditya (Helpline C)

These user needs, rooted in identity and technology-use, had an important impact on how helpline volunteers and callers found a middle point in which volunteers understood the needs of callers and could provide them value.

Individual Boundaries and Personal Fulfillment

Participants consistently had to draw boundaries between their work and personal lives. We next present their motivations to work on MHHs, strategies they employed to draw boundaries between their lives and their callers, and their rationale for staying committed despite the challenges they faced.

Finding a Way to Help

Participants came from “*all walks of life*,” such as education, counseling, music, engineering, and social work (see Table 2). They also described working alongside a diverse group of volunteers, including homemakers, gynecologists, students, counselors-in-training, or retirees seeking a new career path. Participants at Helpline B described the bulk of their volunteers as retired teachers and principals, whereas participants from Helpline C described the bulk of their volunteers as students or older individuals, partially as a result of the flexibility of schedule that this line of work afforded.

Several participants noted that their desire to generally help others was rooted in their personality, with a consistent desire throughout their lives to hear and help others in a direct way. Others described a greater curiosity about human nature as a common motivation, particularly beginning psychology students at local colleges. Additionally, Shanti described wanting to be trained to be able to create non-judgmental spaces for her students to be able to more freely express emotions or experiences that might be stigmatized. No participants disclosed that direct exposure to mental distress or illness was part of why they joined the lines, but described direct exposure as a reason for why others joined.

Addressing Self-Care Needs

Participants described a process of continually checking in with their feelings and overall “*headspace*,” drawing boundaries to better help callers and not be impacted by the distress they were exposed to in the process.

Past research [71] notes that the ability of the individual caller to disconnect and disengage from a call at any time is a big reason why helplines have been widely used. Participants shared, however, that the absence of a follow-up was often stressful. They noted that they would hear about the caller’s distress in the present, but not know their state of wellbeing in the future. This shaped their perception of how “*successful*” they felt a call was in the absence of a sense of closure.

...you’re midway through a call and the call drops and you don’t know if the person committed suicide or what happened. [...] Because, you know, it’s emotional, it could also be like a, topsy-turvy feeling for you. That’s why self-care is a lot.—Shanti (Helpline C)

Participants noted that they would decide if a call had gone well based on feedback from the caller. However, as Shanti noted, helpline volunteers were taught that volunteering on the helpline was not like closing a deal on a sales call; there was not always a tangible successful ending.

[...] we have different things we’re supposed to do during the call and I evaluate based on whether I’ve done those things. And also how was my tone, was it neutral, was I neutral. How much of myself did I get involved in that call? And what place were my questions coming from? And things like that. And that can give me an idea about how the call went.—Shanti (Helpline C)

Participants were taught that the caller could be even more frustrated and angry than they were initially by the end of the call, but it was the job of volunteers to provide a space for callers to freely share these emotions. As a result, volunteers would often turn to an intersection between their institutional values and individual experiences to understand and reflect on whether they had done a good job as a counselor, continuing to ask themselves “*Where were you on all the principles?*” after each call (Shanti). Regardless of caller feedback, if participants felt like they had created a space that was non-judgmental, non-advisory, and filled with empathy, based on their own values and training, they felt like they had done a good job.

This process of going back to the principles of the helpline was taught to volunteers as a form of self-care, and several participants cited the self-care practices they were taught as some of the most valuable skills the helpline gave them. Self-care practices and post-call peer debriefings were also integrated into each helpline’s training and daily practices.

This form of institutionalized self-care was cited as particularly necessary by women who fielded “*sexual gratification calls*.” All lines had male callers who would describe some kind of explicit sexual act to female volunteers as a form of gratification or harassment, with these calls being a significant hindrance to helpline functioning. Participants described a process in which female volunteers would receive a call in which a person described some form of sexual distress and volunteers would slowly have to discern whether this call was authentic or not. Maria (Helpline B) noted that these calls began to get more frequent when the phone number of their helpline was posted online, estimating that 25-30 percent of all calls were for sexual gratification.

Somebody going into the details of the act by giving narration of the act and graphic details, that is a litmus test to understand whether this person is sexually demanding or not. [...] All helplines have these repeat callers, with different different stories they’ll be telling. Lady volunteers have to be given training on how to handle such calls.—Aditya (Helpline C)

Helpline policy dictated that volunteers would need to wait for the caller to end the call. However, all helplines maintained that volunteers could hang up if the caller made them uncomfortable or made any specific demands (including non-sexual ones). The process of discerning whether a caller was in genuine distress or seeking sexual gratification was a stressful form of labor that female volunteers had to undergo.

Finding Personal Fulfillment Through Helpline Work

Participants derived immense meaning from the kind of work they did on the helpline, even if it was not a full-time job. They were most demotivated when they felt unable to fulfill this purpose or that their work was invisible to the caller. When asked what a “bad day” working on the helpline looked like, many participants noted that the days that were the most difficult were those when they felt like they had not done their job satisfactorily. Indicators participants used to assess this were if they came home and still felt overwhelmed, or if there were few (or no) calls during their shift.

Sometimes I feel like it's my job, but other times, I feel like if they are venting out, they are taking us as non-human. Basically, we are just a store and we are just hearing for them and they don't even care [...]

—Shubham (Helpline A)

Some participants, such as Shubham above, also felt particularly frustrated when it felt like their humanity was not recognized by callers. Others felt differently, seeing their role as creating a safe space for the caller regardless of the caller's thoughts or behavior.

Reasons for continued work on the line generally arose from volunteers finding purpose and meaning in the opportunity to help others. But one often cited reason for continued work on the helpline was that volunteers found that it improved their abilities to regulate their own emotions in their personal lives outside of their work at the helpline, with Shreyas (Helpline C) even noting that the training brought him a “heightened sense of self-awareness” through the process of continual self-examination. For participants, helpline work may have had some level of stress associated with it, but the ability to extend support to someone with no place to turn gave participants purpose and enriched their interactions with others in their community. As one participant (Shubham) described it, the ability to create this space for callers as a part of the helpline felt “*sacred*.”

DISCUSSION

Given the absence of accessible mental healthcare globally, technology-based interventions have been touted as one mechanism to connect people with some form of support [32, 50]. Research in psychiatry and community health has shown that the *humans* that underlie infrastructures of support, including social workers, psychiatrists, psychologists, and valued supporters, are core to their success. In particular, the human connections [21] that underlie mental health interventions provide a level of personalization and support that is crucial for relief from mental distress [58]. Access to a supportive community environment, locally appropriate strategies to manage mental health concerns, and the usage of culturally informed

methods to reduce the stigma, discrimination, and social exclusion [12, 50, 57] are all factors of particular importance in providing effective mental healthcare, and thus are a focus of efforts by frontline mental health workers [58], as our research confirms. As several volunteers we interviewed described, the process of assisting another person in distress is a profoundly human endeavor, one in which the identity, language, and personality of the person offering listening and empathy on the other side is of the utmost importance.

As a result of the fundamentally human core to how support is provided via helplines [36, 63], one form of TMMHS system, we draw on past work in ICTD and HCI [18, 40, 65] to approach the technology-mediated infrastructures of support we observed as human infrastructures. Through closely examining the different actors that constitute mental health support infrastructure in India and the relational role that individual helpline volunteers and their backgrounds play in the ability of that greater infrastructure to deliver support, we highlight the importance of examining the backgrounds, motivations, and identities of the individual humans that comprise human infrastructures. Through our examination of gaps in this infrastructure and the impacts these gaps have on the well-being and ability of human volunteers, we suggest implications for the future design of TMMHS systems.

Informing Human Infrastructures

Past work that has used a human infrastructure lens to examine technology-mediated systems has used the “work” produced by the infrastructure as a tool to guide the process of understanding the role of each human in the greater human infrastructure [18, 40, 65]. In the case of the broad system of human-driven actors that underlie mental health support infrastructures in India, the work that is being done is supporting people experiencing mental distress, particularly given financial, cultural, and societal barriers to forms of formal care. Given the intersections between identity, language, and community with the kinds of issues that callers bring to helpline volunteers, we find that it is necessary for this work to be personalized and considerate of the unique nature of the needs of callers.

In particular, we find that the identity, motivations, and backgrounds of the individuals who volunteer for the helplines matters immensely with regards to the kinds of relief they are able to provide to callers in distress. As volunteers noted, though guided by the overarching values of Befrienders India, individual volunteers made decisions on how to counsel callers based on their individual backgrounds, such as older volunteers being more likely to give specific advice to callers as a result of seeing their role as passing down their perspective to youth. Similarly, the languages that volunteers felt comfortable speaking, their past life experiences, and gender identity had an impact on who they could counsel and how this counseling happened. The formation of a deep and therapeutic relationship [63] influenced by shared identity [30], one in which callers called repeatedly to update volunteers on their progress, was noted by volunteers as being one element of their work that both callers and volunteers found relief in and for which identity and background played a role. Shared community, shared context, and shared identity were

not only complementary to the work being done by the greater infrastructure, as in past work by Dye et al. [18]. In the case of helpline-based support, these factors were crucial. For helpline volunteers, we found that a diverse identity and background were a form of *expertise*, one that allowed human volunteers to enable India's greater mental health support infrastructure to better meet the needs of callers in distress. Through making use of different aspects of their identities and backgrounds, volunteers were able to make decisions on how to most effectively support callers, and as a result, these diverse identities became a valuable resource for each helpline. The collective and vibrant diversity of helpline volunteers became a core part of how they were able to enact human infrastructures of mental health support and care.

As a result, we find that analyzing the human infrastructure underlying this form of technology-mediated system is greater than strictly examining the role of each human in the infrastructure's output. Rather, we find that it is exceedingly important to also foreground the background, motivations, and identity of the humans that underlie the work done by the infrastructure, or the provision of support, as these factors are core parts of how the overarching human infrastructure meets the needs of individuals in distress.

In particular, in foregrounding the volunteers who underlie the work done by helplines, we also find intersections between societal and technological gaps that make it more complex and difficult for helpline volunteers to help callers. In the next section, we suggest potential methods to enable and support the humans that support TMMHS systems.

Designing to Support Human Infrastructures

Past work shows that expressions of distress are culturally influenced [35, 51]; our participants noted that callers would often prefer to express themselves in their native language, and in most cases, the volunteer spoke this language. When they did not, volunteers would attempt to forward the caller to a line that did speak the language, or else find some mutually intelligible language that satisfied the caller. Volunteers also noted that callers who spoke local languages would often speak about issues that were more strongly tied to the local context of the caller. As a result, familiarity with these local contexts made it easier for volunteers to engage with callers and find resources that met their needs.

We also found that volunteers would often have to make determinations of whether a person's distress might be better helped by psychiatric treatment, as a result of having privileged access to knowledge about mental health. Similarly, volunteers were also a guide to locally available mental healthcare resources for those unfamiliar with the formal mental healthcare system. However, volunteers would only provide phone numbers associated with resources, but the burden was on the caller to access those resources. TMMHS systems are increasingly portrayed as one method of making mental health care more accessible, and we urge designers to take local contexts into consideration, attending to differences in language or class, or how people might expect to receive and access care. In the case of MHHs, this may entail an Interactive Voice Response (IVR) system to route callers based on specific needs. IVR systems have been demonstrated to be quite popular [77]

and accessible for socially stigmatized populations [1] in the Global South, particularly for healthcare delivery [33, 75]. An IVR-based system that routes callers based on language selection or the type of issue being addressed (such as whether a call is an information-seeking call) could make it simpler for a caller to get connected to a line or mental health resource that can help them, while reducing the burden on volunteers to refer callers with different linguistic contexts or psychiatric needs to other resources.

We also urge designers to foreground the wellness of the individuals who underlie TMMHS systems. Our participants ended up fulfilling the role of multiple formal healthcare professionals, connecting callers with local resources and maintaining strong ties with repeat callers. In this work, volunteers constantly make decisions that can drastically impact the individual wellbeing (occasionally, the very survival) of callers. Volunteers often derived personal fulfillment by acting as listeners; some noted that they would feel upset if the caller did not recognize their humanity, made them feel unappreciated, or looked to them for sexual gratification instead of general support. Volunteers also noted that not knowing the welfare of people who called them when a call was suddenly cut was particularly difficult. The future design of TMMHS systems must prioritize self-care for the humans who support these human infrastructures. For MHHs, this may entail an easy and automated method for volunteers to blacklist callers who call for sexual gratification, as well as a simpler (and perhaps IVR-based) method for callers to be able to update volunteers on their well-being, preserving the close and deeply therapeutic relationships between callers and volunteers.

CONCLUSION

In this work, through exploring the human infrastructure that underlies most mental health helplines, we shed light on the process by which volunteers navigate boundaries at institutional, interpersonal, and individual levels to effectively support callers. Through semi-structured interviews with 12 participants from 5 different helplines in India, we found that volunteers must work to understand the values of their helpline, work to negotiate and meet caller needs through practicing these values, and intentionally practice self-care to help callers in a healthy, self-motivating way. We argue that our findings have important implications for the study of human infrastructures and the design of TMMHS systems, including emphasizing the importance of the background, motivations, and identity of the humans who underlie these infrastructures of support.

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