Implementing Psychological First Aid for Healthcare Workers During the COVID-19 Pandemic: A Feasibility Study of the ICARE Model

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Abstract

Maintaining the resilience of healthcare workers (HCWs) during the protracted COVID-19 pandemic is critical as chronic stress is associated with burnout, inability to provide high-quality care, and decreased attentiveness to infection prevention protocols. Between May and July 2020, we implemented the ICARE model of psychological first aid (PFA) in a novel online (i.e., telehealth) format to address the psychological support needs of HCWs during the COVID-19 pandemic. We found that HCWs needed psychological support related to obtaining clear information about pandemic policies and guidelines, navigating new rules and responsibilities, and processing overwhelming and conflicting emotions. The HCWs in our program repeatedly expressed appreciation for the support we provided. Future directions include establishing online discussion forums, increasing opportunities for individual support, and training HCWs to provide peer support using PFA. This program has far-reaching potential benefit to HCWs and to society at large in the context of a pandemic.

Keywords COVID-19 · Healthcare workers (HCWs) · ICARE · Psychological first aid (PFA) · Telehealth

Introduction

Burnout Among Healthcare Workers

The coronavirus disease 2019 (COVID-19) pandemic has overburdened healthcare workers (HCWs), requiring many of them to work longer hours and to do so under conditions of increased stress and uncertainty (Morgantini et al., 2020; Spoorthy et al., 2020). Under typical circumstances, HCWs frequently encounter a highly demanding workplace and are susceptible to symptoms of burnout (e.g., emotional exhaustion, depersonalization, and decreased personal accomplishment; Freudenberger, 1974; Maslach & Jackson, 1986). Considering the escalating burnout risk factors associated with COVID-19 (e.g., engaging in end-of-life decision-making; Chuang et al., 2016; West et al., 2018), it is not surprising that rates of burnout among HCWs across the globe have increased since the beginning of the COVID-19 pandemic (Morgantini et al., 2020). Because the implications (e.g., medical errors, increased physician turnover and costs; Doolittle, 2021; Han et al., 2019; West et al., 2018) are significant for all stakeholders in healthcare, it is imperative to address symptoms of burnout in HCWs. Psychological first aid, an evidence-informed intervention designed to mitigate stress and to promote resilience and self-care following crises (Everly, 2020), integrates and expands upon interventions previously used to reduce burnout in HCWs (e.g., mindfulness, stress management; Heath et al., 2020; West et al., 2018) and has the potential to address the psychological needs of HCWs during the COVID-19 pandemic.

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Psychological First Aid (PFA)

Psychological first aid (PFA) is an evidence-informed method for providing psychological support to individuals following traumatic events, natural disasters, or other large-scale adverse events (Chandler et al., 2021; Everly, 2020; Kroll et al., 2021; Malik et al., 2021; Shah et al., 2020; Yue et al., 2020). When applied in healthcare systems, PFA has been shown to help healthcare providers cope with stressful work-related events (Moran et al., 2017) and to substantially mitigate nursing burnout, resulting in lower turnover rates (Edrees et al., 2016). During COVID-19, PFA programs designed to reduce stress and increase effective coping have been delivered to various populations with positive results (Arenliu et al., 2020; Blake et al., 2021; Chandler et al., 2021; Cheng et al., 2020; Malik et al., 2021). Among HCWs in particular, there is a demonstrated need for psychological support given the incredibly challenging circumstances brought about by the COVID-19 pandemic (Blake et al., 2021; Spoorthy et al., 2020; Yue et al., 2020). For the current study, consistent with calls for programs to support the psychological well-being of HCWs (Shah et al., 2020; Wu et al., 2020; Yue et al., 2020), we implemented the ICARE model of PFA in a novel online format to mitigate psychological distress and promote resilience among HCWs during the early phase of the COVID-19 pandemic.

The ICARE Model of Psychological First Aid

ICARE is an acronym (i.e., Introduce, Communicate, Acknowledge, Recommend, and Encourage) that serves as a guide for the structure of a PFA session (Everly, 2020). The tasks for the *Introduce* phase include making introductions, providing logistical information (e.g., limits to confidentiality), and explaining what to expect during the meeting (e.g., a safe space to share experiences). During the *Communicate* phase, participants describe the events that brought them to attend the support group meeting. The *Acknowledge* phase takes place simultaneously as facilitators respond with empathic listening, validation, and normalization of emotional reactions. The goal of the *Recommend* (Taking Action) phase is to mitigate distress by highlighting coping skills and fostering hope. Finally, the meeting ends with the *Encourage* (Next Steps) phase, during which facilitators help members detail specific plans to implement coping skills or seek additional mental health services (e.g., individual therapy).

The Current Study

Given the stressful and demanding circumstances for HCWs initiated by the COVID-19 pandemic, we sought to quickly implement an online program to address the psychological support needs of HCWs during the early months of the pandemic. Following a review of the existing literature, we determined that PFA would be the best modality for our program as it is an evidence-based intervention that has been successfully implemented during previous epidemics (see Shah et al., 2020; Yue et al., 2020). However, previous research on PFA has been limited in its quantitative assessment of the mental health functioning of the sample (e.g., Arenliu et al., 2020; Blake et al., 2021; Chandler et al., 2021; Cheng et al., 2020; Kroll et al., 2021; Malik et al., 2021), description of the specific PFA model used (e.g., Blake et al., 2021; Cheng et al., 2020; Kroll et al., 2021), and identification of the support needs discussed during the provision of PFA (e.g., Arenliu et al., 2020; Blake et al., 2021; Cheng et al., 2020; Kroll et al., 2021). Further, few studies have been conducted that describe or evaluate the implementation of an online PFA program for HCWs in the context of the COVID-19 pandemic.

Therefore, we implemented an online (i.e., telehealth) program and used the ICARE model of PFA to address the psychological support needs of HCWs in Southern Arizona. This paper describes the provision of support services and collection of data that occurred between May and July 2020 (i.e., the early months of the COVID-19 pandemic). To address the previously mentioned gaps in the literature we had the following aims for the current study:

Aim 1: Assess the mental health and psychological functioning of HCWs during the early months of the COVID-19 pandemic.

Aim 2: Determine the feasibility and acceptability of an online PFA program for HCWs implemented during the early months of the COVID-19 pandemic.

Aim 3: Identify the psychological support needs of HCWs during the early months of the COVID-19 pandemic.

By describing our novel implementation of the ICARE model of PFA for HCWs during COVID-19, the current study informs ongoing and future efforts to support the psychological well-being of HCWs, particularly in the context of large-scale emergencies, and contributes

meaningfully to the literature on crisis mental health services in medical settings.

Methods

Participants

All HCWs in the area, including physicians, nurses, environmental services (janitorial) staff, first responders, and others on the frontlines, were invited to participate in the Healthcare Worker Housing to Overcome Spread Through Effective Distancing (HCW HOSTED; https://www.hcwhosted.org) program. HCW HOSTED began as a community-based initiative dedicated to providing resources (e.g., housing for self-quarantine, psychological support) for HCWs during the COVID-19 pandemic. When enrolling in HCW HOSTED, members were asked whether they wanted to be contacted with information about our PFA support groups (i.e., ICARE support groups). As of July 13, 2020, 94 HCWs expressed interest in obtaining services from HCW HOSTED, with nurses being the most prominent occupational group ($n=45$; 47.87%). Fifty-one (54%) HCWs requested information about our ICARE support groups. All HCWs who expressed interest in the HCW HOSTED program or the ICARE support groups were enrolled; no individuals were excluded from participating in the current study. We received IRB approval for the portion of this study determined to be human subjects research (i.e., the daily symptom monitoring and the bi-weekly questionnaires).

Measures

Daily Symptom Monitoring

Following enrollment in HCW HOSTED, members had the option to complete a daily symptom monitoring questionnaire. Specifically, members were prompted daily via email to provide information about their *level of stress* (1 = very low to 5 = very high) and the *quality of their sleep* the last time they slept (1 = very good to 5 = very poor). The questionnaire also included items assessing COVID-related physical symptoms; however, those measures are beyond the scope of the current study. All data were managed using REDCap (Harris et al., 2019). These measures are included in the current study to describe the sample.

Bi-weekly Questionnaire

To assess for self-reported depression and anxiety, the bi-weekly (every two weeks) questionnaire included the *Center for Epidemiological Studies Depression Scale-Revised* (CESD-R-10; Björgvinsson et al., 2013) and the *Generalized Anxiety Disorder-7 Scale* (GAD-7; Spitzer et al., 2006). Possible scores on the CESD-R-10 range from 0 to 30 and scores greater than or equal to 10 are considered consistent with depression. Possible scores on the GAD-7 range from 0 to 21, with scores greater than 5 indicating anxiety. As with daily symptom monitoring, these measures are included in the current study to provide descriptive information about the sample.

Procedures

Regarding symptom monitoring, which was available for all HCW HOSTED members, thresholds were set to alert the HCW HOSTED team of symptoms of concern. Specifically, if a member indicated they were experiencing very high levels of stress (rating of 5) and/or very poor sleep quality (rating of 5), we emailed, texted, or called them based on the level of significance (i.e., number of days endorsed). These thresholds were set based on the level of distress that stood out as unique given the ongoing challenges of frontline HCWs and were designed to allow individual follow-up to be feasible for our small HCW HOSTED ICARE team. During the interaction, we explained that their questionnaire was flagged because of their stress and/or sleep ratings, offered individual guidance, and reminded them about the support groups offered through the HCW HOSTED ICARE program.

A trained member of the HCW HOSTED ICARE team called each HCW HOSTED member who expressed interest in the ICARE program to complete the onboarding process (i.e., provide additional information about the ICARE program). Following the onboarding process, members were able to participate in any group that worked for them based on their schedule. There was no sign-up system, as members were permitted to drop into any meeting, provided they join no later than 10 min after the start of the meeting. The ICARE support groups were conducted using unique links generated by the HIPAA-compliant Zoom for Health platform, with the password and waiting room features activated. All enrolled HCW HOSTED ICARE members received weekly emails inviting them to join the online (i.e., telehealth) ICARE meetings. Participant confidentiality and anonymity in the PFA meetings was ensured by instructing participants *not* to provide identifying information. Throughout each ICARE session, we monitored the degree of catharsis occurring to avoid having the conversation become overly focused on emotional processing, which could impact functioning at work. Instead, we attended to resilience and active steps that HCWs could take given that they were in a very unique situation: they must return to work, day after day, and face the same difficulties.

Several support needs emerged during the provision of ICARE services. Many of these support needs were areas of

difficulty for the HCWs that contributed to their struggle to maintain their mental (and physical) health. However, some support needs also demonstrated notable resilience among the HCWs. Importantly, support needs were identified not only from the ICARE meetings, but also from the onboarding phone calls (completed with all 51 HCWs who expressed interest in the ICARE program) *and* the symptom monitoring check-ins (provided to all HCWs in the HCW HOSTED program who evidenced need based on the thresholds described above). Consistent with previous research (Chandler et al., 2021; Malik et al., 2021), support needs were documented by the ICARE team member(s) immediately following each encounter (i.e., onboarding call, symptom monitoring call, or ICARE meeting). Due to our focus on providing support and our desire to ensure that program participants were as comfortable as possible in our interactions, we did not record communication with participants.

Results

Aim 1: Assessing Mental Health and Psychological Functioning

Daily Symptom Monitoring

Thirty-three HCW HOSTED members participated in daily symptom monitoring, with 19 consenting to use of their data for research. Members' daily survey completion ranged from 1 to 75 days. Among members consenting to use of their data for research, the average daily stress rating was 2.67 (indicating a low to moderate level of stress) and the average daily sleep rating was 2.53 (indicating fair to good quality sleep). These differed by less than 0.10 points from the ratings in the larger sample.

Bi-weekly Questionnaire

Eighteen HCW HOSTED members filled out at least one bi-weekly questionnaire, 12 of whom gave consent for their bi-weekly data to be used for research. Among the 12 consenting members, the average CESD-R-10 score was 9.91 (below the cutoff associated with depression) and the average GAD-7 score was 6.73 (mild anxiety) for their first survey. These averages were less than a point different from the averages of the larger sample. Seven HCW HOSTED members completed more than one bi-weekly questionnaire, six of whom gave consent. On average, for their last survey, these consenting members still had low scores on the CESD-R-10 ($M = 8.29$) and reported minimal anxiety on the GAD-7 ($M = 4.33$). The larger sample reported averages within approximately one point of the consented member averages.

Aim 2: Determining Feasibility and Acceptability

Feasibility

Implementation of this online PFA program for HCWs during the COVID-19 pandemic was feasible via the use of a program website, an online survey system (i.e., REDCap) for symptom monitoring, and a videoconferencing platform (i.e., Zoom). The onboarding phone calls, symptom monitoring check-ins, and ICARE support groups were conducted by advanced clinical psychology doctoral students who underwent comprehensive training related to the provision of PFA, use of telehealth, and application of strategies for supporting the mental health of HCWs. The training consisted of both asynchronous (e.g., online course, relevant articles) and synchronous (e.g., didactics, roleplay exercises) components. While delivering ICARE support services, these advanced graduate students received ongoing supervision from both clinical and subject matter experts.

Acceptability

We anticipated that there would be fewer group participants at the onset of our program given previous findings documenting slow uptake of PFA programs (Edrees et al., 2016), but expected more to join as the pandemic persisted. In contrast, group attendance was relatively stable, with zero to two members for each group. Out of 26 group sessions offered between May and July 2020, five sessions had HCWs in attendance. Typically, one HCW was present, with the exception of the first group which two HCWs attended. Overall, one HCW attended three sessions, a second attended two sessions, and a third attended one session. Importantly, we received ample positive verbal feedback from these HCWs regarding the benefit of attending the groups. Further, HCWs who were unable to, or did not, attend the groups conveyed appreciation for the availability of support. After approximately 3 months of hosting weekly support groups with minimal attendance, we modified our program to better suit the needs of the local HCWs (see section "Recommendations and Future Directions").

Aim 3: Identifying Psychological Support Needs

Support Need 1: Obtaining Clear Information

HCWs perceived that clear information and instructions regarding the COVID-19 pandemic were severely lacking from government agencies as well as their employers. Particular areas of concern included ambiguous procedures for self-quarantining (e.g., whether it was recommended that HCWs live separately from their family members) as well as an absence of guidelines for providing support or comfort

to someone dying from COVID-19 and their loved ones. HCWs found that this lack of clarity permeated multiple domains of their lives, including both work and home.

Support Need 2: Navigating New Rules and Responsibilities

HCWs noted drastic changes in rules, regulations, and protocols at the beginning of almost every shift and expressed feeling like they had to learn an entirely new system in addition to caring for patients. Further, many HCWs found themselves with new responsibilities in the wake of COVID-19. As many healthcare institutions severely restricted patient visitation to prevent the spread of the virus, HCWs had the added responsibility of being the only person able to emotionally support someone ill or dying from COVID-19. HCWs noted that there was something particularly devastating about those experiences, especially knowing that the individual had loved ones that would have wanted to be present with them at the end. Additionally, HCWs had the responsibility of informing those loved ones that the patient had passed away. HCWs described feeling that they lacked appropriate training for communicating effectively within those difficult conversations. These types of experiences have been described as "moral injury" (Williams et al., 2020). Collectively, these circumstances resulted in HCWs dreading going to work because of the increased demands and because of the sense of tragedy associated with the deaths from COVID-19.

Support Need 3: Processing Overwhelming and Conflicting Emotions

Throughout the provision of ICARE services, it was not uncommon for members to display or express overwhelming emotions. Most common among them were worry, frustration, and appreciation. Expressions of worry by HCWs primarily centered around concern that their jobs and their increased risk of exposure to COVID-19 would put their family members in harm's way. HCWs expressed how difficult it was for them to simultaneously want to see their family members and to keep them safe (i.e., physical distancing). HCWs also endorsed feelings of frustration related to the administration in their healthcare institutions (e.g., being slow to respond to needs/requests) and the apathy of community members (e.g., not wearing masks or following physical distancing guidelines). However, the most frequently and intensely expressed emotion was appreciation, which members noted seemed to both conflict and co-exist with their feelings of worry or frustration. The appreciation expressed by HCWs included appreciation for being alive (especially those that contracted and recovered from COVID-19), for having access to personal protective equipment (PPE; in acknowledgment that not all HCWs around the world had/

have access to any, or to sufficient, PPE), and for the efforts that their communities made to show gratitude (e.g., by providing food) for the critical work that HCWs are doing.

Discussion

The COVID-19 pandemic has created novel challenges for HCWs, both at work and at home. If not addressed, they have the potential to generate mental health complications for HCWs, which could lead to burnout as well as greater systemic issues in the healthcare system (Chuang et al., 2016; Han et al., 2019; West et al., 2018). Given this, it is critical to identify the needs of HCWs to prevent or treat emerging mental health problems. The current study had three aims: (1) assess the mental health and psychological functioning of HCWs during the early months of the COVID-19 pandemic, (2) determine the feasibility and acceptability of an online PFA program for HCWs implemented during the early months of the COVID-19 pandemic, and (3) identify the psychological support needs of HCWs during the early months of the COVID-19 pandemic. Below, we interpret and integrate the major findings from each of these aims within the broader research literature on the mental health of HCWs during and following global health crises.

Mental Health and Psychological Functioning of HCWs

The HCW HOSTED members who participated in symptom monitoring reported low to moderate levels of stress, fair to good sleep quality, minimal depression, and minimal to mild anxiety. We assume that there are many contributing factors as to why our members had low levels of stress, sleep disturbance, depression, and anxiety, and one of those reasons may be participation in our program. Alternatively, HCWs who sought out the HCW HOSTED and ICARE programs may have been particularly attentive to their mental health *prior* to participating in our programs. However, we know that HCWs and the general public are experiencing higher levels of stress, sleep disturbance, depression, and anxiety compared to before the pandemic (Asaoka et al., 2021; McGinty et al., 2020; Rodriguez et al., 2020). Therefore, although the HCWs who elected to participate in our symptom monitoring service (and consented for their data to be used in research) reported relatively low levels of distress, for which the cause is difficult to determine, this result does *not* negate the critical importance of implementing psychological support programs for HCWs. Additionally, while our goal regarding the assessment of mental health symptoms in the current study was to describe our sample and document their mental health functioning, it should be noted that there remains a need for research that rigorously evaluates the

effectiveness of PFA using similar measures (Corey et al., 2021; Yue et al., 2020).
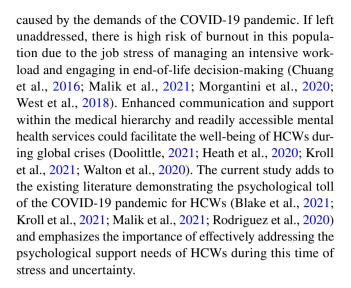
Feasibility and Acceptability

Consistent with previous research (Arenliu et al., 2020; Chandler et al., 2021; Cheng et al., 2020; Kroll et al., 2021), we found the implementation of an online PFA program to be feasible. For our program, we achieved this with a program website, an online survey system (i.e., REDCap), and a videoconferencing platform (i.e., Zoom). Additionally, following training, advanced clinical psychology doctoral students conducted onboarding and symptom monitoring phone calls as well as the ICARE support groups. We extend the research by examining the ability to implement an online PFA program specifically for HCWs in the context of the COVID-19 pandemic.

Although fewer HCWs attended the support groups than anticipated and attendance did not increase as substantially as expected, numerous HCW HOSTED members (including those who could not or did not attend an ICARE meeting) indicated during onboarding phone calls, symptom monitoring check-ins, and via email communication that it was helpful to know support was available if they needed it. We believe that group attendance may have been lower than expected, at least in part, because of the low levels of depression and anxiety reported among our sample of HCWs. Additionally, HCWs reported that their work schedules were extremely demanding in the context of the COVID-19 pandemic (see Blake et al., 2021). Lastly, the relatively low attendance may have been due to the structure and context of the program. HCWs were eligible to participate in the ICARE groups, which were led by non-HCWs (i.e., advanced clinical psychology graduate students), following enrollment in HCW HOSTED, an organization outside of their workplace. Peer-based support groups, either in-person or on a video platform, that are integrated within the healthcare setting could provide a better structure for HCWs in terms of program awareness and ease of accessibility (see Blake et al., 2021; Kroll et al., 2021; Malik et al., 2021).

Psychological Support Needs

Through our provision of ICARE PFA groups as well as onboarding and symptom monitoring phone calls, we found that HCWs needed psychological support regarding the lack of clear information from their employers and government agencies about the COVID-19 pandemic, the demands placed on them due to new rules and responsibilities in the workplace, and their experience of overwhelming and conflicting emotions as a result of the stressful circumstances that they were enduring. Identifying HCWs' support needs is critical for preventing and treating mental health problems caused by the demands of the COVID-19 pandemic. If left unaddressed, there is high risk of burnout in this population due to the job stress of managing an intensive workload and engaging in end-of-life decision-making (Chuang et al., 2016; Malik et al., 2021; Morgantini et al., 2020; West et al., 2018). Enhanced communication and support within the medical hierarchy and readily accessible mental health services could facilitate the well-being of HCWs during global crises (Doolittle, 2021; Heath et al., 2020; Kroll et al., 2021; Walton et al., 2020). The current study adds to the existing literature demonstrating the psychological toll of the COVID-19 pandemic for HCWs (Blake et al., 2021; Kroll et al., 2021; Malik et al., 2021; Rodriguez et al., 2020) and emphasizes the importance of effectively addressing the psychological support needs of HCWs during this time of stress and uncertainty.

Limitations

There are a few limitations of the current study that should be noted. First, this study was implemented with a sample from a city in the Southwest United States. As such, the findings may be unique to this region and may not capture the experiences of HCWs in other areas of the United States or in other countries. Relatedly, our HCW HOSTED ICARE program was implemented between May 2020 and July 2020, during the early months of the COVID-19 pandemic. The timing of program delivery and data collection likely impacted the support needs that were identified and may have contributed to the relatively minimal psychological distress that was reported by the sample as well as the limited attendance at the scheduled support meetings. Lastly, as the HCW HOSTED ICARE program was a novel implementation of PFA in response to the COVID-19 pandemic, the total sample size for this study was relatively small.

Recommendations and Future Directions

Given the scheduling constraints and identified support needs of HCWs, we recommend (and plan to enact moving forward) incorporating asynchronous online discussion forums, individual support, and peer mentorship to further address the psychological needs of HCWs. As with group meetings, the goal for the asynchronous online discussion forums would be to provide a space for HCWs to connect with each other, share experiences, and provide or receive support. The additional benefits of the discussion forums are that (1) HCWs can engage with each other without the requirement of being available at the same time and (2) HCWs who only have a few minutes available to participate (vs. an hour for attending a support group) can still do so. In addition to addressing scheduling constraints, individual support services would allow members to discuss issues that

they were unable (e.g., due to lack of time) or uncomfortable bringing up during the group. Lastly, we believe a peer model of support (i.e., HCWs supporting HCWs) would be sustainable, could facilitate an even greater sense of community, and may enhance ownership of the support process among HCWs (Blake et al., 2021; Edrees et al., 2016; Kroll et al., 2021; Malik et al., 2021).

Conclusion

This paper highlighted our use of the ICARE model of PFA in a novel online (i.e., telehealth) format to help HCWs develop and maintain resilience and well-being during the COVID-19 pandemic. Among other services available through our program, HCW HOSTED, we implemented consistent monitoring of members' mental health and offered weekly PFA support groups for HCWs. We observed that enrolled HCWs exhibited minimal symptoms of anxiety and depression. Additionally, despite the relatively limited utilization of our online PFA support groups, HCWs in the program expressed gratitude for the supportive network of HCW HOSTED. We also elucidated three support needs expressed by members during our provision of ICARE services: (1) HCWs perceived a lack of clear information from government agencies and employers about COVID-19, (2) HCWs identified new rules and responsibilities in the workplace due to COVID-19, and (3) HCWs experienced overwhelming and sometimes conflicting emotions related to their stressful circumstances. Just as the pandemic continues to evolve, so too do the needs of HCWs. We believe the HCW HOSTED ICARE program has the capability of being adapted for these dynamic conditions.

Data Availability The data are available from the corresponding author upon request.

Code Availability Not applicable.

Declarations

Conflict of interest Alexa B. Chandler, Aubrey A. Wank, John R. Vanuk, Mary-Frances O'Connor, Bradley A. Dreifuss, Heather M. Drei-

fuss, Katherine D. Ellingson, Sana M. Khan, Sydney E. Friedman, and Amy Athey declare that they have no conflict of interest.

Ethical Approval This study has been approved by the University of Arizona Institutional Review Board and has therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments.

Consent to Participate Prior to data collection, all participants for this study agreed to participate and provided consent for the use of their data for research.

Consent for Publication Prior to data collection, all participants for this study agreed to participate and provided consent for the use of their data for research.

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