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Virtual recruitment and participant engagement for substance use research during a pandemic

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Abstract

Purpose of review: The coronavirus disease 2019 (COVID-19) pandemic resulted in cataclysmic changes to the research enterprise, causing a forced shutdown or rapid pivot to virtual methods. Adapting studies to the virtual environment also impacted recruitment and retention strategies. This review elucidated challenges and offered pragmatic recommendations, drawing on published literature and our prior work, to assist researchers in re-evaluating and amending best-practice techniques to bolster inclusive recruitment and study engagement of people using substances, particularly for virtual interviews or focus groups.

Recent findings: Ameliorating recruitment strategies and research protocols to better fit virtual methods of recruitment and study administration required careful consideration of ethical and logistical implications. Many procedures to increase enrollment of underrepresented populations, such as building mutually beneficial and respectful community partnerships, recruiting via social media, or providing ambulatory research centers, existed prior to this specific pandemic. However, unprecedented disruptions in resources needed to participate in virtual interviews or focus groups, privacy concerns, and possible deteriorating trust in research necessitated continued adaptation and expansion of these strategies.

Summary: Building upon pre-pandemic, community-engaged strategies may continue to facilitate diverse recruitment efforts and advance science productivity in the substance use and addiction field during the pandemic and thereafter.

Keywords

Recruitment; Retention; Substance use; Community-engaged research; Coronavirus disease 2019 (COVID-19) pandemic

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Introduction

Recruitment-related challenges in substance use research are well-documented in the scientific literature [1–3]. However, the international crisis caused by the rapid spread of SARS-CoV-2 and variants [4,5] had momentous implications for study protocols and recruitment, especially for studies using interviews or focus groups. Globally, researchers scrambled to continue their work as social distancing stymied in-person, substance use research. One option was to transition from in-person to virtual methods. Such adjustments not only helped deal with this unforeseen emergency but also offered benefits in the form of bridging barriers to enrollment. Virtual platforms, such as Zoom, advanced addiction research by offering innovative solutions for empowering and encouraging hard-to-reach populations to contribute to salient, substance use studies. Prior works detailed participant satisfaction when using video conferencing for research [6] and clinical visits, especially in the provision of mental health services [7]. Nevertheless, pivoting research to virtual modalities accompanied a need to evolve recruitment procedures and study protocols to better fit the virtual environment.

Although fluctuating patterns of substance use were observed on a global level [8], the pandemic disproportionately negatively impacted minority populations in the United States [9–12]. This was particularly problematic given pre-pandemic racial disparities in substance-related overdose mortality rates [11**]. Virtual recruitment strategies offered unprecedented opportunities for engaging underrepresented populations for substance use and addictions research by increasing public awareness of relevant studies and streamlining processes related to enrollment. A meta-analysis examining the effectiveness of recruitment strategies for clinical trials revealed that virtual recruitment may have been better than offline recruitment in terms of cost-effectiveness and speed of recruitment [13**]. When recruitment rates were calculated by examining the quantity of participants recruited daily per active recruitment day, a meta-analysis of seven studies documented that virtual recruitment resulted in a recruitment rate of nearly 4.2 times greater than the recruitment rate of offline recruitment [13**]. However, offline conversion rates were higher, compared to virtual conversion rates when data from 13 studies was pooled [13**].

While the advantages and utility of recruiting or conducting research virtually were acknowledged [14–20], little research was available to guide the development of best-practice strategies to virtually recruit diverse populations who use substances. This was concerning since research via virtual platforms is subject to challenges distinctive from those typically reported in the case of in-person studies [14–16*,18,19], and community members may have experienced participation hesitancy related to enrolling in virtual research which could be mitigated through an appropriate recruitment process. Through published literature and our pandemic-driven experience, this narrative review aimed to assist researchers in developing practical and informed strategies for virtual recruitment, particularly for substance use and addiction studies. Special attention was placed on elucidating techniques related to engaging participants for virtual interviews or focus groups. Peer-reviewed scientific literature written in English were identified via PubMed searches by using keywords related to the COVID-19 pandemic, recruitment, retention, community-engaged research, substance use, interviews or focus groups, social media, data integrity,

or virtual meeting platforms; backward & forward citation searches of relevant publications were also performed.

Engaging the community

Although recruiting and conducting studies via virtual methods offered multiple perquisites, careful consideration was needed on whether virtual methods of recruitment and/or study participation were feasible and accepted by the population of interest. In a pre-pandemic study that examined a program to prevent American Indian/Alaska Native adolescents from using alcohol and other substances, Dickerson *et al.* embarked on numerous deliberate steps to develop collaborative partnerships with American Indian/Alaska Native communities [21**]. The researchers elicited guidance from the communities regarding recruitment strategies and study materials, including the study logo which was created by an American Indian artist [21**]. American Indian/Alaska Native community members were also employed as study facilitators and recruiters [21**]. These deliberate actions early in the research process may have helped cultivate and maintain a mutually beneficial alliance with the community. Developing equitable partnerships help ensure that scientific, as well as societal and local relevance, is present [22,23].

Fostering trust with communities and stakeholders was integral to identifying and recruiting diverse viewpoints [24,25], especially given potential eroding trust in research during the pandemic [26]. Community health workers, citizen scientists, and other stakeholders offered valuable insight into population-specific concerns, especially recruitment barriers, which are not well documented in the literature as well as community-based assets, infrastructure, and resources to assist with recruitment. In a research protocol for a mixed-methods study, Opara *et al.* detailed engaging the youth and community advisory board to identify relevant recruitment venues and to distribute recruitment flyers [27]. Yamaguchi *et al.* partnered with a local research consultant to assist with interpretation and cultural brokering when the research team recruited and conducted interviews and focus group discussions regarding alcohol drinking practices and associated cultural values in the Peruvian Andean highland [28**]. Yamaguchi *et al.* also discussed engaging in cultural practices with community members during festivals and noted that this may have helped develop rapport with the public [28**].

Taking the time and effort to build rapport with community champions, especially during this pandemic, also assisted with deconstructing the notion of ‘helicopter research’ - an occurrence in which researchers conducted research in a community, but the community received little to no benefit from the findings [29,30]. Salem *et al.* administered focus groups with women who had a substance-related charge, identified as homeless when they were released from prison or jail, and were on probation and/or parole at the time of the study [31]. Before conducting the study, community stakeholders and other partners were consulted regarding the need for the project and the recruitment strategy [31]. Another method to assist with identifying salient research priorities was discussed in Stull *et al.* [32*]. Stull *et al.* detailed the value of incorporating researchers with lived experiences with substance use on research teams [32*]. Researchers and community members with diverse expertise advance substance use and addiction research by offering innovative ideas

to improve recruitment techniques and research initiatives, thereby sparking policy changes to better serve at-risk and understudied populations.

Recruiting underrepresented populations via social media and networking platforms

Given the high - and rising - prevalence of social media/networking use [33], one strategy used to facilitate the essential inclusion of underrepresented populations for substance use research was recruitment via social media and networking platforms [34]. Recruitment via social media sites, such as Facebook, Reddit, Twitter, Craigslist, LinkedIn, Instagram, or Snapchat, has been reported in many studies, including in projects conducted pre-pandemic [21**,27,34,34–45]. Social media recruitment allowed for targeted recruitment messages to be tailored towards specific community populations, and included postings on forums or paid advertising [34,35,46]. A systematic review of social media recruitment for mental health studies, including substance use, found that some investigators created official accounts for their study on a social media platform, and a few researchers used their own accounts to post the study [45].

Prior work documented success in social media recruitment for substance use research among community members, including among minority populations. For instance, social media postings were incorporated into the recruitment plan of a study that aimed to recruit more than one thousand U.S. young adults to assess associations of loneliness with mood disorders and substance use during the pandemic [35]. Paid advertisements through social media platforms were also successfully utilized in a study investigating substance use among Canadian youths [41]. Recruitment via social media also contributed to enrolling 842 midwives in the United Kingdom to identify determinants and variations in the implementation of guidelines related to alcohol use during pregnancy [42]. The feasibility and acceptability of social media recruitment has also been documented among racial/ethnic minority community members [34,47,48**]. Parker *et al.* compared virtual and in-person recruitment strategies of young men who have sex with men and use substances [34]. In comparison to participants recruited via in-person recruitment methods, participants recruited via social media platforms had greater racial diversity [34].

Not all social media sites were accessible to all researchers. Some institutions had policies that banned recruitment messages from one social media site, but not another. Sanchez *et al.* detailed the ethical and privacy issues as well as the limited regulatory guidance and policies associated with social media recruitment [45]. Differing restrictions between social media platforms were detailed regarding the populations which may be recruited via particular platforms; Parker *et al.* stated that Reddit limits recruitment via advertisements to individuals who are at least 18 years of age [34].

Recruitment via social media and networking platforms allowed researchers to increase awareness of the study to underrepresented populations who may not have known about the project via in-person, venue-based recruitment methods. This accompanied a need for researchers to further refine and evaluate strategies to mitigate the risk of fraudulent enrollment. Godinho *et al.* offered suggestions, such as collecting contact information or

embedding a Completely Automated Public Turing test to tell Computers and Humans Apart (CAPTCHA), to prevent duplicate participants or automatic survey taking bots from attempting to enroll or participate in a substance use study [49]. Researchers also recommended using a lottery system for participant remuneration, if allowed by the Institutional Review Board [50,51**]. Pratt-Chapman *et al.* pointed out that some measures to improve data integrity may dissuade eligible individuals from participation [52]. For instance, eligible individuals with limited technological literacy may have been dissuaded if successfully completing a CAPTCHA is necessary to complete a survey [52], such as an eligibility screening questionnaire. Thus, there was a need for researchers to identify a balance between reducing the likelihood of fraudulent enrollment while not unintentionally excluding eligible individuals.

Mitigating participant burden related to virtual enrollment

Proactive measures were detailed to reduce barriers related to enrollment procedures. On the website of a study investigating the efficacy of a smartphone-based program on preventing substance use among Hispanic adolescents between 12-15 years of age, Schwinn *et al.* provided informational videos in both Spanish and English for the parents of potential participants [53*]. Conversely, Cook *et al.* noted that their own enrollment processes may have been overly burdensome [44]. Individuals interested in participating in a smoking cessation study were linked to an intermediary page after clicking on the study's Facebook post [44]. The potential participant then had to click on the study's website and screening form, instead of being directly linked to the study's website from the Facebook post [44].

Reducing apprehension associated with structural barriers and privacy concerns

Researchers also documented steps to assuage concerns related to technology and other structural barriers to participation in virtual studies, particularly those involving virtual interviews or focus groups. Yoon *et al.* discussed techniques used to recruit parents with substance use disorders who were involved in the child welfare system [54*]. Participants were offered a \$15 gift card to add minutes to their phone, if needed, to participate in the telephone survey; Yoon *et al.* noted that this strategy resulted in the successful recruitment of several additional participants [54*]. Technical and structural issues were also reported for interviews or focus groups conducted via virtual platforms. Virtual platforms were vulnerable to technical issues, such as limited/unstable internet, audio issues and lags, or webcam/video malfunctions [14,16*,18,39,55]. Not all people had a subscription to broadband internet [56]. Some individuals may have experienced disruptions in internet access during the pandemic [57]. In addition to a lack of reliable internet service [55], some people may not have had the financial resources or knowledge to purchase the necessary equipment (e.g. microphone, webcam, headphones, phone, computer/laptop, etc.) to participate in virtual interviews or focus groups. This situation was complicated further by the scarcity of certain products, including webcams, during this specific pandemic [58].

To mitigate structural issues that reduce a particular individual's or population's willingness to enroll in a virtual study, researchers continued to refine pre-pandemic protocols to address

inequities and challenges associated with this pandemic. Lourenco and Tasimi recommended that researchers offer participants with low socioeconomic status temporary access to internet services, if able [59]. Sending potential participants mobile hotspots [59], offering tablets with pre-loaded study assessments [57], or using ambulatory research centers with the necessary technology and privacy features to communities were also suggested as strategies to help reduce this enrollment barrier.

Community members may have experienced participation hesitancy associated with concerns related to confidentiality, privacy, or access to reliable internet or equipment if they were to participate from their place of residence [15,55]. These concerns may be particularly salient for people using substances due to stigmatization of substance use [60] and the potential, adverse implications if their substance use history were to be overheard or hacked. Given such a possibility, researchers recommended informing individuals that they should go to a private and quiet area for the virtual meeting and use a charged electronic device with headphones [19,37,61,62]. Some guidance on what networks and security the person is using might have also been called for, such as when to use or not use a public network for access. Researchers also presented potential solutions which could have been used for community members who may not have had access to a private location to participate in the study. Nooner *et al.* recommended providing opportunities to participate in-person while adhering to social distancing guidelines, such as offering access to a designated, private research room with appropriate safety and cleaning protocols [57]. Additional suggestions to assist with virtual recruitment or engagement of participants for substance use studies involving virtual interviews or focus groups were detailed in Table 1.

Conclusion

The coronavirus disease 2019 pandemic exposed or exacerbated an underlying continuum of inequities, particularly among individuals living with a substance use disorder [63]. This pandemic also necessitated discussions related to re-evaluating strategies to virtually recruit and engage diverse populations for community-engaged, substance use research. Despite unprecedented challenges related to the pandemic, science productivity continued to advance. This review aimed to contribute to existing and emerging literature to develop best-practice recommendations for ethical and inclusive techniques to virtually recruit and engage participants for substance use research, especially for studies using virtual interviews or focus groups. Indeed, continuing to re-evaluate and refine virtual strategies for recruiting participants, particularly among underrepresented populations, for high-quality substance use research is instrumental in improving surveillance and mobilizing policies to address problematic substance use among marginalized and understudied populations.

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Key points:

- The resiliency of participants and researchers has been documented through continued efforts to participate in and conduct high quality and ethical research, respectively.
- Engaging communities throughout the research process was instrumental in promoting feasible and equitable recruitment practices.
- If accessible and approved by relevant institutional and ethical review boards, postings or advertisements on social media were a valuable tool to recruit diverse and hard-to-reach populations.
- Regular re-evaluation of ethical and logistic considerations was needed when virtually recruiting participants and/or administering virtual interviews or focus groups.
- Intentional efforts were taken by substance use researchers to mitigate apprehension associated with participating in virtual interviews or focus groups – both during the COVID-19 pandemic as well as pre-pandemic.

Table 1.

Recommendations to virtually recruit and engage underrepresented and diverse populations, especially for substance use and addictions research

Suggestions
<p><i>Building community trust prior to project implementation</i></p> <hr/> <ul style="list-style-type: none"> • Cultivate long-lasting partnerships with the community by fostering bi-directional, genuine, and honest pathways of communication [22–24] <ul style="list-style-type: none"> • Establish an enthusiastic, persistent, and diverse research team with population- and community-relevant experiences [21**,28**,32*] • Involve minority stakeholders in decisions related to the salience, design, materials, recruitment & retention procedures, timeline, and implementation of the study [21**,22] <ul style="list-style-type: none"> ○ Establish community advisory boards and coalitions [21**,23] • Determine whether virtual recruitment and study administration are culturally appropriate as well as adhere to all relevant procedural, legal, and ethical considerations or whether another synchronous or asynchronous route of recruitment and study engagement would be a better fit [19,21**] <hr/>
<p><i>Virtual recruitment</i></p> <hr/> <ul style="list-style-type: none"> • Consult the community, citizen scientists, community champions, community health workers, and other relevant stakeholders regarding feasibility and acceptability of specific virtual recruitment methods [21**,31] • Form concrete goals for the recruitment of diverse and underrepresented populations [24] • Elicit guidance from community partners regarding potential barriers to fair recruitment and community infrastructure to advance recruitment protocols [21**] • Re-evaluate and refine pre-pandemic recruitment strategies <ul style="list-style-type: none"> ○ Utilize purposive sampling strategies to target recruitment towards underrepresented communities or populations who are under-enrolled in the study [34,35,46] ○ Consider recruiting via postings on and paid advertisements through social media and networking, if approved [34,35,46] ○ Regularly assess possible biases, ethical considerations, and privacy issues associated with the recruitment methods used [45] ○ Incorporate strategies to prevent fraudulent enrollment and routinely check for data integrity [49–52] <hr/>
<p><i>Virtual administration of studies involving interviews or focus groups</i></p> <hr/> <ul style="list-style-type: none"> • Provide Institutional Review Board (IRB)-approved flexibility <ul style="list-style-type: none"> ○ Offer participation opportunities during weekends, early mornings, or later afternoons/evenings to allow the experiences of people who are unable to participate during the traditional workday to be included [16*,39,57,61] ○ Allow participants to select the route of administering the interview or focus group (e.g., via telephone, virtual platform, or in-person while adhering to appropriate social-distancing protocols) • Offer participants resources, such as a mobile hotspot to obtain internet access or Visa gift card to add minutes to their cellphones [54*,59] • Prior to the interview or focus group, email participants guides, including frequently asked questions and solutions, on how to utilize the virtual platform needed to participate in the virtual study [55] • Before beginning the virtual interview or focus group, inform participants that they should be in a private location to participate in the study [19,37,61] <ul style="list-style-type: none"> ○ Offer alternative solutions, such as a private research room in which social distancing measures can be implemented, if a participant is not able to access a private area to participate in the virtual interview or focus group [57] • Provide participants access to a research team member who could offer advanced technical support related to using the technology (e.g., virtual platform) needed to participate in the study [16*,37,55,61]