Social audio as a tool for public health interventions

Dominic Arjuna Ugarte MD[1]; Sean D Young PhD, MS[2]*

[1]Department of Emergency Medicine, University of California, Irvine, 333 City Boulevard West, Suite 640, Orange, CA 92868.

[2]University of California Institute for Prediction Technology, Department of Informatics, University of California, Irvine, California, United States of America.

*Corresponding Author: Dominic Arjuna Ugarte, Department of Emergency Medicine, University of California, Irvine, 333 City Boulevard West, Suite 640, Orange, CA 92868.
Email: dugarte@hs.uci.edu

Abstract

Introduction: There is a constant need for new approaches and technologies to help with public health study participant recruitment, retainment, and interventions. For approximately 15 years, social media text and image/video platforms (e.g., Facebook, and more recently, Instagram, Snapchat, and TikTok), have been increasingly used to assist with these issues in research. However, a new social media format based on audio interactions (i.e., social audio) is gaining popularity and may have advantages over traditional social media platforms. This paper explores how social audio might be used in public health interventions and how they differ from traditional text- and image/video-based social media platforms.

Methods and Results: No data collection or statistical analysis was done.

Conclusions: The two formats of social audio, synchronous (live chat) and asynchronous (recorded audio clips), have potential in recruitment and delivery of public health interventions. Current existing applications offer a variety of features that may appeal to investigators and participants alike. Challenges and barriers are also discussed.

 Keywords: Public Health; Social Media; Research Subject Recruitment; Social Audio.

Introduction

Social media has been used as a tool for public health interventions [1, 2] like smoking cessation studies [3], promoting weight loss and physical activity among individuals with mental illness [4], and HIV prevention among men who have sex with men [5]. The increase in social media use in research interventions is likely to continue as 72% of the public used social media in 2019 compared to 5% in 2005 [6]. Studies using social media (i.e., Instagram, Pinterest, Tumblr, Flickr) for health promotion and education have trended upwards [7]. Social audio is now gaining popularity and offers advantages to traditional social media platforms like increased confidentiality and a way to combat bots.

Objectives

This paper will explore the potential use of social audio in different aspects of public health intervention research.

Methods and Results

No data collection or statistical analysis was done.

Discussion

Audio-based social media

Social audio is an application (app) that allows for voice conversations among users, most in real-time. To date, there are 36 social audio apps, each with various features to offer users [8], and some for specific users like sports fans [9]. Social audio formats vary from synchronous live chat rooms (i.e., Clubhouse, Chalk, Space) to asynchronous audio clips (i.e., Cappuccino, Swell). Social audio has exponentially grown in adoption and popularity. Clubhouse expanded its reach as evidenced from 2,000 downloads in September 2020 to 2.4 million in January 2021 [10].

The COVID-19 pandemic has resulted in isolation for many individuals worldwide. Subsequently, communication through social media and video communication (i.e., FaceTime, Zoom, Google Hangout, etc.) has risen to connect families, friends, and coworkers. This increase in video communication has led some to experience Zoom fatigue [11] which propelled the appeal of social audio. The novelty of social audio, along with

its specific features may be advantageous for research studies. Some platforms are not recorded so participants may feel more comfortable that their data will not be stored. However, there are ways to record conversations [12] which investigators need to address but is also something inherent to any research involving groups. Other platforms like Twitter will only store conversations on Spaces temporarily to ensure policies have not been violated and then will delete the conversation [13].

Social audio as a recruitment tool

Participant recruitment may be one of the best uses for social audio in public health research. It has the capacity for wide outreach while maintaining intimacy and community engagement. Regardless of format, synchronous or asynchronous, investigators may be able to promote their study, provide information, and answer questions from potential participants in authentic conversation that text-based social media or paid advertisements don't afford. While tracking metrics like cost per click is not as easy on social audio platforms compared to traditional platforms like Facebook [14], there are still ways to record metrics like seeing how many visitors to your chat convert to study participants. Social audio platforms like Clubhouse are also already organized into groups such as a support group for those with substance use disorder. Through the use of these groups, targeting your study population may be easier or you can start conversations that may appeal to your target study population. For example, if you are trying to reach out to those who would benefit from HIV testing or vaccination for something like COVID-19, you could start a conversation about that topic to hopefully find the correct population. Some synchronous social audio can record conversations while recorded conversations are built-in for asynchronous platforms (i.e., Swell). For example, conversations are recorded in Stereo [15] and Space, with investigators having the capacity to schedule future talks on Space [16]. The recording feature will work well for those who missed the live chat. Similar to Stereo, Fireside was developed with podcast capabilities in mind, but with more listener engagement [17]. This feature will allow investigators to engage with potential participants in real-time while minimizing cost for travel to community events, venues, or paid text ads on social media platforms or search engines. Recorded conversations will make recruitment information available to the public at any time and not just during the live chat. For synchronous social audio such as Clubhouse, scheduling live chat rooms would assist in promoting the chat. Scheduled events can then be posted on other social media for outreach, including the asynchronous platforms. In using a live chat or recorded audio clip to promote research studies, platforms are not subject to the same screening and approval process as paid ads such as on Facebook or Google. Platforms like Clubhouse also have direct chat, which can help with outreach to those who attended the live chat or for users to reach out to investigators. Furthermore, social audio like Clubhouse, can help reduce duplicate accounts and bots during the recruitment process. As users will need to communicate via voice, this serves to ensure it is a unique participant and it would be

much harder to operate multiple accounts or use bots to sign up for a study.

Social audio in intervention delivery

Implementation of certain intervention procedures and health promotion may benefit from social audio. Interventions using peer models may take advantage of the social aspect of social audio. In lieu of communicating through text or in person, peer models can moderate a private group chat with assigned participants at a designated time for synchronous platforms. One benefit of social audio over Zoom is that there is no expectation for video engagement which may appeal to participants who want to remain anonymous (i.e., use a fake name on their profile) or are experiencing Zoom fatigue. Synchronous social audio such as Chalk would work well for interventions where participants meet on a regular basis. Investigators have the option to set limits of number of users in a room and will call participants to inform them that a chat is live [18]. The app allows users to send text messages to each other [19], adding an extra layer of engagement among participants and researchers. A benefit of social audio over text-based social media platforms is the intimacy that audio brings compared to reading text posts and comments as the speaker's tone and context may be better expressed in audio. Similarly, video-based social media such as YouTube Live do engage viewers, however, viewer engagement is text-based comments and not voice. Given the challenge of engagement that previous social media platforms encountered with engagement [20], voice may heighten the engagement factor among participants.

Live chats or recorded audio clips can be used to disseminate information to the public. A synchronous live chat where investigators discuss the public health issue being adressed and the importance of the study in mitigating this issue can lead enrolled participants to the study website that provides a call to action (i.e., order HIV test kits, assistance with initiating medications for opioid use disorder, watch a video, etc.). For interventions using behavior change models (i.e., Transtheoretical Model), each synchronous live chat can focus on different model constructs to address behavior change, barriers, and challenges. Asynchronous audio clips can also be posted on different days during the study period to address different model constructs.

Challenges of adopting social audio for research interventions

Use of new technologies do come with challenges. Those challenges may be technical (i.e., limitations of the platform, technology) or derived from users (study team and participants). Participation may be limited to those who have the technology to run the app. For example, apps have compatibility requirements for operating systems that may prevent those with older phones or devices from accessing the app. A novel technology may alienate some individuals who may not be familiar with the app. Investigators may want to provide detailed instructions on how to use the app to obviate frustration and minimize drop out. Currently, the user base of social audio platforms is still much smaller than many traditional

platforms and may need time to grow its user base. Platforms like Clubhouse will also need the researcher to grow their own following in the app to attract people for recruitment or partner with established organizations that already have a user base. Another consideration in implementing social audio for research is moderation of the chat. A closely moderated session will be key, especially for synchronous platforms, to ensure that all participants are safe and adhering to app terms of use and policy. Research protocols to collect data may have limited use for social audio due to less saturation compared to text and video social media, and inherent features of the app. However, projections for social audio include the advent of third-party applications [8] that allow for network analytics that may shed light on social network behaviors and social media influencer reach and impact, heat maps that may be helpful in public health surveillance and infodemiology, and sentiment analysis that can inform investigators and public health agencies about campaign performance during the study period. These applications may provide insight for future studies and inform investigators of focus areas, as well as identify gaps and priority populations.

Ethical Considerations

As with all research, there are ethical concerns to consider. One of the biggest concerns inherent to social media research is confidentiality [21]. In traditional social media platforms, studies that provide direct quotes from participants or have very unique data (e.g. all from a certain school), even without other identifiable information can potentially be linked to an account through a Google search [21]. Leaks of social media data have also been a concern with sites like Facebook. There are several solutions to these problems. First, researchers can refrain from using direct quotes from participants. Second, participants can always create a separate account or adjust their privacy settings, which can potentially hide them from Google searches. Most social media platforms include in their privacy settings that ''When you publish content or information using the 'everyone' setting, it means that you are allowing everyone to access and use that information [21]." Finally, apps where conversations are not recorded, are actually advantageous in this regard. While researchers could potentially record conversations in closed groups, several apps state in their privacy policy that conversations are not recorded on the platform itself and so cannot be searched for or leaked out in the future. Furthermore, as long as intent of data use is made clear to participants, most participants are okay with sharing data for health science research – possibly due to the assumption that health research can provide direct benefits to individuals or society [22].

Conclusion

Social audio is the latest iteration of social media network which may have potential use in public health research. Many social audio platforms offer features that may appeal to investigators for use in intervention studies and may have advantages over traditional social media platforms. Though still in its infancy, investigators can take advantage of its novelty which may attract participants while taking into considerations its limitations. Additionally, social audio platforms may improve confidentiality and reduce the bots and duplicate accounts during recruitment.

Author Contributions

Ugarte: Conceptualization, Literature Search, Data Curation, Writing – Original Draft, Writing – Review and Editing

Young: Conceptualization, Resources, Writing – Review and Editing, Supervision, Project Administration, Funding Acquisition

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