Abstract

Background It may be challenging for researchers to recruit enough participants to have a diverse and representative sample for their studies. Usual recruitment methods that were historically effective can be difficult to use because of high costs, time constraints and geographical limitations. Social media is a low-cost, time-saving alternative.

Aim To summarise the benefits and challenges of using social media for recruitment.

Discussion This article provides an overview of social media. It considers the advantages of social media for recruitment, including its cost-effectiveness, accessibility, speed and potential exposure for researchers. It also discusses the challenges of using social media for recruitment, including ethical ambiguity, homogenous sampling and questionable validity of information gathered.

Conclusion Using social media for research saves time and reduces costs, increasing access to hard-to-reach populations and the reach of recruitment efforts.

Implications for practice Options for researchers wishing to use social media for study recruitment are outlined, as are strategies for managing some of the challenges involved in this recruitment method.

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Introduction

Researchers often find it difficult to recruit participants for their studies. Suboptimal recruitment can prevent researchers from completing their studies successfully, as it can lead to reduced power (Andrews 2012), compromised validity (Arigo et al 2018, Axén et al 2021), greater costs and delays, and even the termination of the study (Reagan et al 2019, Wozney et al 2019, van den Brink et al 2020). Recruitment can be even harder when studying an uncommon phenomenon, minority populations or those of low socioeconomic status (Yuan et al 2014, Caplan and Friesen 2017, Arigo et al 2018). Insufficient recruitment can ultimately affect treatment options for the population the researcher is studying (Caplan and Friesen 2017).
Traditional methods of recruitment include posters, newspaper advertisements, recruitment flyers, radio and television broadcasts, letters, emails and word of mouth. These can be quite expensive and time-consuming for researchers (Andrews 2012, Carter-Harris 2016, Whitaker et al 2017). The COVID-19 pandemic demonstrated the need for researchers to depart from traditional recruitment methods, as these became less feasible (Kühne and Zindel 2020). Researchers must look for cost-effective alternatives among all possible recruitment strategies.

Social media (SM) has emerged as a viable recruitment option for researchers, as it continues to rise in prominence (Chen et al 2019). However, researchers may have been slow to adapt recruitment strategies that use SM, since there is a lack of regulatory and ethical guidance for implementing it and they may be unfamiliar with the variety of available platforms (Gelinas et al 2017).

We conducted a two-year review of the literature concerning the use of SM in research. Our aim was to understand more about this emerging recruitment option and evaluate how useful SM is for recruitment in qualitative and quantitative research projects.

Background
SM is a communication model in which a diverse range of consumers share information on the internet, usually through platforms such as Facebook, X (formerly Twitter) and Instagram (Casañas i Comabella et al 2015, Hammer 2017, Gálvez 2019). Users can network informally with others using Facebook, WeChat and WhatsApp; self-publish using Wordpress and Blogger; microblog short written texts with X and Weibo; contribute to journalistic sources such as CNN iReport and Now Public; collaborate to share information through text with Wikipedia and through multimedia with YouTube and Instagram; participate in online discussion forums; join a crowdsourcing group to fund a project with Kickstarter and Innocentive; post comments on an organisation’s product or service; and store and share internet entries on blogs and websites (Gálvez 2019).

An estimated 1.79 billion people worldwide used SM in 2014 (Wasilewski et al 2019). That had risen to 4.70 billion by 2022 (Kemp 2022), with 59% of the world’s population now using SM for an average 2 hours and 29 minutes every day (Kemp 2022). Facebook, YouTube, WhatsApp, Instagram, Weixn/WeChat and TikTok were the most popular SM networks in January 2022 (Statistica 2022).

This increasing and widespread use of SM offers researchers the potential to facilitate public engagement, connect with more diverse audiences and enhance the impact of their research (Jordan 2022).

Method
We searched the EBSCOhost, Science Direct, JSTOR and CINAHL databases for peer-reviewed articles published in the past 20 years that included the words ‘social media research’. Tables of contents and reference lists from these articles led to the accumulation of further resources.

It became apparent from a review of the initial results that we needed to further refine the search terms. We amended them to include ‘research’, ‘utilization’, ‘recruitment’ and ‘social media’.

We met monthly from January to July 2021 to review, evaluate and refine the nearly 70,000 publications that emerged. We aimed to use articles containing the most robust descriptions of using SM to recruit participants.

We eliminated articles that did not describe the recruitment process in detail. This reduced the number of articles from 70,000 to 20,000. We then eliminated articles that emphasised recruitment less than other aspects of research. This refined our search to approximately 80 articles.

We continued to seek out, review and discuss new publications throughout the
two-year project. We established quality and eligibility criteria for inclusion in relation to whether an article compared traditional and social media recruitment methods as well as an apt description of each. We only included articles that used one or more social media platforms for recruitment and discussed the positive and negative aspects of using social media for recruitment.

We selected 39 articles for review. However, we continued to add further relevant publications to our review until December 2022, as we were writing and revising this article for publication.

**Advantages of using SM in recruitment**

**Cost-effectiveness**

Many studies have identified SM as being more cost-effective than traditional recruitment methods (Andrews 2012, Ramo and Prochaska 2012, Arigo et al 2018, Wasilewski et al 2019, Wozney et al 2019, Bragard et al 2020). Wasilewski et al (2019) found it was economical and expanded the reach of recruitment for researchers to use their personal X accounts to recruit participants caring for ageing parents. Christensen et al (2017) found that using Facebook and Netdoktor.dk to recruit participants in a prospective study on fertility cost €6.22 on average per participant, while offline methods cost €9.06.

There are not yet consistent standards for reporting how cost-effective SM recruitment has been. For example, Darmawan et al (2020) conducted a scoping review of clinical trials that used seven SM platforms for recruitment and found that they increased participation and reduced cost per participant. However, the authors also emphasised that reporting inconsistencies hindered a clear assessment. Similarly, Topolovec-Vranic and Natarajan’s (2016) review of 30 interventional and observational studies found that SM was not cost-effective in seven cases (Pedersen and Kurz 2016).

**Accessibility**

A major goal of many studies is to obtain a sample that represents the target population and has enough participants to meet sample size requirements (Hulley et al 2007). This can be challenging since many populations are typically difficult to recruit from.

A frequent finding of the literature is that SM can access hard-to-reach populations. Facebook ads, website pop-ups and other SM-based recruitment methods can increase the reach of recruitment efforts, enabling researchers to obtain a larger sample of rare population groups (Kühne and Zindel 2020, Barney et al 2021, Bragard et al 2020). Studies can then better represent stigmatised populations (Topolovec-Vranic and Natarajan 2016) and specific minority groups that are usually difficult to reach (Arigo et al 2018, Forgasz et al 2018, Johnson et al 2019, Wozney et al 2019, Bragard et al 2020).

Some authors stated that SM-based recruitment methods gave them samples that were more heterogeneous than they could have attained using traditional methods. This was because they could target potential participants from different races, ethnicities, genders, socioeconomic status and other groups (Hammer 2017, Wasilewski et al 2019, Whitaker et al 2017).

**Time advantage**


Participants also took part in the research at their convenience, which gave them more autonomy over their involvement in the study (Altshuler et al 2015, Casañas i
Comabella et al (2015). Participants took much less time to respond when using SM and following up with them was less challenging (Pedersen and Kurz 2016, Forgaz et al 2018). Researchers can more efficiently complete their research if they use a less time-consuming method of recruitment.

**Increased exposure**


SM’s social nature means potential participants may share information about a study with their contacts (Rife et al 2016). This snowball sampling increases the study’s exposure to other potential participants (Fileborn 2016, Forgaz et al 2018, Wasilewski et al 2019), which may lead to a larger sample size and a more representative sample.

**Challenges in using SM in recruitment**

**Ethical ambiguity**

Researchers may face several ethical ambiguities when using SM for recruitment. Zimmermann et al (2022) found in their structured non-systematic review of ethical benefits and risks in clinical studies that researchers must consider three main dimensions: the level of information and consent; the risks for target groups; and the effectiveness of the recruitment strategy. Researchers must maintain three types of transparency with all potential participants (Zimmermann et al 2022):

- ‘Investigator’ transparency – researchers must make their identity visible.
- ‘Data’ transparency – they must clarify what data they will collect, where they will store it and how they will use it.
- ‘Information’ transparency, in which privacy and stigma are protected.

It should be explicit in any SM recruitment strategy how participants may withdraw from the study, as well as what level of privacy they can reasonably expect. For example, if a participant deletes a post or their account, is that considered withdrawing from the study (British Psychological Association 2021)? Will their online contributions be read by others (Fileborn 2016, Tseng et al 2019)? Is the SM platform private and does it have password protection, as with a closed Facebook group; or is the platform public and not password-protected, such as a discussion on X using a particular hashtag (Lafferty and Manca 2015, Tseng et al 2019)? How will researchers protect participants’ information and identity from online hacking (Bull et al 2013, Filkins et al 2016, Bragard et al 2020)? Will advertising companies be able to access participants’ information (Benedict et al 2019)? What information do people need to feel they will be safe if they participate in a study, especially if they will have to share sensitive or confidential information with the researchers (Andrews 2012, Shere et al 2014, Adrian et al 2019, Reagan et al 2019, Bragard et al 2020)?

Some target groups are vulnerable to discrimination and stigmatisation, so the assessment of risk in recruitment strategies is contextual. There may be a social or structural stigma attached to the characteristics associated with some groups, such as those focused on sexual orientation, sexually transmitted diseases, psychiatric disorders and skin diseases (Zimmermann et al 2022). Researchers may need permission to access these or closed groups before they can post recruitment messages.

Assessing the effectiveness of any SM recruitment strategy can include comparisons to ethical norms inherent in traditional recruitment methods. For example, Gelinas et al (2017) suggested identifying a familiar offline variant of a proposed SM recruitment strategy, applying the substantive ethical
considerations associated with that familiar strategy to the SM strategy; and then addressing any differences.

**Homogenous sampling**
Researchers have found that homogenous sampling issues begin to emerge when recruitment does not deliberately target minority groups (Benedict et al 2019, Johnson et al 2019, Wozney et al 2019). For example, SM research excludes any participant that does not have access to a social media account or access to the internet; this results in some of the population being unrepresented in the research (Rife et al 2016, Hammer 2017).

Facebook users are also significantly more likely to be women, teens, non-Hispanic white and adults with at least a high school diploma (Soukup 2018). Benedict et al (2019) found participants recruited using SM are culturally invariant, which results in more uniform samples that are unrepresentative of the general population. Furthermore, snowball sampling may lead participants to pass research information on to similar people (Hammer 2017, Puschmann 2019, Wozney et al 2019).

Factors such as age and generational demographics could also affect the reach and efficiency of SM recruitment (Shere et al 2014). However, Rife et al (2016) found SM sampling generally produces as diverse a group of participants as an offline study does, making it no less valid than traditional methods.

It is important that researchers try to avoid homogenous sampling by critically analysing the groups that respond to their recruitment strategies and making a concerted effort to recruit a wide variety of participants (Benedict et al 2019). However, self-selection bias is inherent in research conducted using the internet and researchers’ disseminations of their findings should include all biases (Hammer 2017). Furthermore, they must address potential bias by paying careful attention to the wording they use when recruiting (Jones et al 2020) while still ensuring they obtain a large enough representative sample.

**Validity of social media research**
Many researchers struggle with the validity and reliability of SM data (Davies 2019). Users may be fraudulent and misrepresent themselves to receive the incentives researchers are offering to participate (Forgasz et al 2018, Bragard et al 2020, Tebb et al 2020, Barney et al 2021); some researchers therefore do not offer incentives and take extra precautions by examining potential participants’ internet addresses for duplicates and phoning them to verify they are eligible to participate (Tebb et al 2020).

However, Lafferty and Manca (2015) postulated it is hard for researchers to overcome the challenge of the lack or unreliability of demographic information. Further, some researchers may hesitate to use SM to recruit participants since there will be no peer review of the data they collect (Lafferty and Manca 2015).

**Use of incentives**
Some researchers use incentives to improve recruitment using SM (Christensen et al 2017, Arigo et al 2018). These are typically somewhat effective, but researchers also found that they may contribute to user fraudulence (Pedersen and Kurz 2016, Bragard et al 2020, Tebb et al 2020). It is therefore recommended that they be used with caution.

**Researcher considerations**

**Platform considerations**
Ultimately, the researcher decides how to use SM to recruit participants, endeavouring to choose the platforms most relevant to the population they wish to study (Arigo et al 2018). For instance, middle-aged to older people tend to use Facebook, while adolescents and young adults make up a large proportion of X and Instagram users (Arigo et al 2018).

Researchers should also consider the funding available and whether they would...
like to use their personal and professional SM accounts on the same platform (Arigo et al 2018). Each researcher must choose the method that will produce the most effective outcome for their study; they must also be willing to exercise creativity and flexibility to recruit participants.

Our review of the literature found Facebook to be the most used SM platform and the most effective for recruitment (Valdez et al 2014, Adrian et al 2019, Johnson et al 2019, Reagan et al 2019). Researchers who used Facebook frequently paid for ads targeted at people of specific ages, locations, genders and languages (Carter-Harris 2016, Wozney et al 2019). They can set a budget by choosing where and when the ad will appear on Facebook (Carter-Harris 2016, Barney et al 2021). They can also determine which ads are the best received and boost their visibility (Altshuler et al 2015, Arigo et al 2018, Barney et al 2021).

Another option is to use public profiles concurrently on multiple SM platforms to search for participants through online groups dedicated to the study’s topic (Johnson et al 2019). Researchers may then reach out to these groups, introduce themselves, give brief descriptions of their studies and enquire about collaborating to recruit for the studies.

Accessing private accounts
Researchers can also recruit using private SM accounts – those not linked to a business or organisation. For example, they can make friend requests to view potential participants’ profiles on Facebook or promote their studies using their academic accounts (Fileborn 2016, Adrian et al 2019).

This is challenging for researchers because of ethical considerations about public and private data. Specifically, no clear distinction between what is considered public or private information was found. For example, is something posted on a public social media page public information and thus available to the researcher (Fileborn 2016)? The researchers also could not control how the study was propagated or promoted – for example, friends could share the Facebook post about the study with other friends and add their own comments (Lafferty and Manca 2015, Fileborn 2016).

Using personal accounts
Another strategy is to use a personal SM account. For example, researchers can use their own X accounts to post regularly about their studies, including links in the posts to information about the study (Wasilewski et al 2019). However, researchers must have a known online presence with many followers to recruit successfully (Wasilewski et al 2019). Even with a large following, their followers may not come from their target population so they may not recruit enough participants (Arigo et al 2018). One way to overcome this is to enlist the help of an influencer who has many followers.

Researchers also face challenges in locating and analysing only those posts pertaining to the study. A way to mitigate this problem at least partially is to use an SM hashtag specific to the study to find and track participants (Lafferty and Manca 2015, Arigo et al 2018, Wasilewski et al 2019).

Conclusion
Researchers are increasingly considering using SM in their studies as they look for more cost-effective and time-saving methods of recruiting participants. However, there has been some hesitancy in its adoption because of its newness and emerging challenges. The lack of specific guidance on how to implement SM recruitment strategies could also lead to SM being under-used for research.

Nevertheless, the literature provides frequent examples of how researchers can successfully use SM. SM’s advantages could forever change the way research is conducted. Researchers should therefore use the literature about SM recruitment as a stepping stone in their own studies.