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Cultivating Engagement in Research Using Social Media Networks to Recruit Participants for Health Related Research

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Abstract

The rise of online communication has meant that a growing number of users now spend more time communicating through social media, such as Instagram, Facebook, YouTube and Twitter. As new technologies continue to emerge, researchers are considering social media as a medium for recruiting participants for research. Social scientists including health related researchers often face challenges with participant recruitment. Recruitment remains a persistent challenge for researchers particularly when topics are sensitive such as healthcare and mental health. Inadequate sample size, delay and even cancelled studies can occur due to lack of enrolment and are challenging for researchers. Using social media networks health researchers can improve the pool of research participants, who then can be selectively recruited for both online and offline studies. The purpose of this paper is to describe the process involved and the issues researchers encountered with participant recruitment during two research studies that employed online social media methods. This is a growing field and more research is required to explore optimal strategies for the successful recruitment using online social media platforms. Researchers need to consider new and evolving ways to recruit research participants particularly within difficult-to-reach populations.

Keywords: Social Media, Research Methods, Participant Recruitment, Facebook, Twitter

Introduction

Successful participant recruitment is central to conducting health related research. This paper contributes to the conversation on the benefits and challenges with using social media online networks to recruit participants for health related research. For the purposes of this paper we define social media as "… a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content" [1]. To date there has been little specific regulatory guidance on the use of social media for research recruitment in particular health related research. We present the experiences and challenges faced from two health related research studies that employed innovate tools as part of the recruitment strategy. Both studies were carried out in the Republic of Ireland, the first study used a mixed methods approach exploring the utilisation of online mental health self-help programmes (OMHSHPs) by people with mental health problems in their everyday lives. The second study examined the lived experience of emerging adults (18 to 24) with childhood onset chronic illness. We discuss some of the challenges in recruiting participants and the importance for researchers to be familiar with their developmental groups and how they communicate. The use of social media platforms to recruit participants is gaining popularity among health researchers as they seek to engage with populations that have been previously been difficult to capture. Difficult-to-reach populations often include developmental groups such young adults aged 18 to 24 and those with mental health problems [2,3]. The challenges of participant recruitment are well documented and have caused concern for health researchers [4-7]. However social media networks are increasingly being considered by researchers as it offers potential to capture the attention of those previously difficult to capture.

Using Effective Recruitment Strategies

Web 2.0 social media tools such as Instagram, Facebook, YouTube and Twitter are now integrated into our daily lives.

Therefore researchers should consider using this variety of media to capture the attention and engage with participants via a medium with which they are familiar and spend increasing amounts of time. Namageyo-Funa, maintain that researchers should not only be familiar with their target population but also incorporate relevant tools in their participant recruitment strategy [8]. Traditional methods of recruitment such as mailing, newspaper advertisement and canvassing relevant locations such as hospital clinics can have a twofold effect on recruitment for health researchers. Firstly, they can fail to capture the attention of particular groups who have moved away from the more conventional methods of communication to online. Secondly they may only capture those that attend hospital clinics missing out on those that do not need to attend regular clinics or those that are non-compliant with care. Much of the available research into chronic illness experience seems to have been done on populations accessed through outpatient clinics [9,10]. This may suggest that convenience rather than theoretical or demographic interests play a role in determining the samples that are most commonly represented in the health related research literature. Evidence suggests that young adults with chronic illness often have infrequent or indeed complete lack of follow up care following their transfer to the adult setting [11]. It follows therefore that there is a high probability that they are not represented in research studies on chronic illness.

Facebook is currently the largest social networking site in the world, with an estimated global membership of more than at more than 2.6 billion users [12]. Approximately two-thirds of U.S. adults (68%) now report that they are Facebook users, and roughly three-quarters of those users access Facebook on a daily basis. Social Media Networking in Ireland (2019) show similar results with Facebook as the main social network with an average of 75% of Irish adults logging on regularly. While Facebook is the most widely used social media site, Twitter is growing in popularity among researchers in recent years. This prompted the researchers to consider both Facebook and Twitter as tools to recruit participants particularly as the populations would be considered difficult-to-reach. The recruitment strategy employed by the two studies initially involved advertising widely across the Republic of Ireland, using both offline and online channels, to maximise the number of individuals knowing about the study and possible participants for the studies. This looked to replicate a working model based on precedents of survey studies that have successfully recruited difficult-to-reach populations through the general population [13,14]. The recruitment strategy adopted by both studies included advertisement via social media (Facebook and Twitter).

Facebook Study Invitation

Sample recruitment was carried out using both online and offline tools. Social networking sites, Facebook and Twitter were chosen to support participant recruitment in both studies. While young adults were among the earliest users of this social media network, usage by older adults has increased in recent years. Much of the research to date has explored how social media networks influence the behaviours of its users rather than employing it as a tool to engage research participants [15,16]. Snelson carried out a systematic review of the social media research literature published from 2007 through 2013 and found that the most common use of social media in research studies was collecting data from participants using online interview, focus group, and survey methodologies. Employing social network such as Facebook to recruit participants for health research is still in its infancy and

the literature to support researchers seeking to use this recruitment tool is sparse. Social networking applications such as Facebook are increasingly being used to recruit participants for experimental, survey, interview and ethnographic studies. Health researchers have been slower to embrace Web 2.0 technologies as a tool for engaging with participants and sample recruitment.

The motive for choosing this form of recruitment in both studies was twofold. There have been challenges in recruiting for health related research using traditional methods of recruiting which has often led to small samples in research studies [17]. Using Facebook to recruit study participants could provide access to larger populations and offer a more appropriate communication tool to engage with research participants. The sample recruitment strategy begun with an advertisement placed on the social networking site, Facebook. The advertisement included a clear indication that it was a request to participate in the study from the researcher and that participation is voluntary. The advertisement campaign in Facebook involved the following steps:

1. Set up of an account on Facebook (https://www.facebook.com)
2. Make the account public (i.e. visible to anyone).
3. Log into the Facebook website and click on the Create Page tab and created a Page for the research study
4. The Page is created using information about each study
5. Create a study advert and pin to the Page, making it the first post people would see viewing the Page
6. Click on the Create Ad tab to set up a Facebook Ad Campaign.
7. Within the Ad Manager tab, you can chose the spend limit (e.g. no more than 10 eur per day). In one study an initial daily budget of 4 Euro was used, which Facebook estimated would allow the Ad to reach between 1,300-4,100 Facebook users daily. However this was later raised to 6 Euro daily, to increase the Ad reach.
8. Select the target audience criteria. For instance one study specifically targeted the emerging adult population (young adults between 18 and 25 years living in Ireland) for the advertisement. The second study chose the target audience of anyone aged 18 to 65+ years living in Ireland.
9. The Ad Manager tab allowed the researchers to check activity on the advertisement and view how many people clicked through into the advertisement (see below). In the first study, the Ad resulted in 421,181 impressions (the number of times an Ad was on screen for the target audience) with a reach of 100,379. Of the young adults reached 131 young adults clicked on the advertisement (0.031% click through rate). Sixty-three young adults made contact via email however some of the participants were not eligible for this study.
10. The second study involved an online survey and while the Ad had been clicked on 69 times, it resulted in no complete survey responses. Six days into the Ad Campaign the Ads Manager showed that the Ad had appeared over 33,000 times in Mobile News Feed and less than 1,000 times in Desktop News Feed. Therefore when the Ad appeared in people's news feed on Facebook, almost all were accessing Facebook from a mobile device such as Smartphone or tablet. This remained unchanged throughout the overall Ad Campaign life. A decision was made to change the Ad format and image to make the latter more mobile friendly by using bold colours to make the image stand out more and reducing the amount of text in the image.

The changes implemented in the second study are summarised

in detail in the Table 1

	First Ad	Second Ad
Ad format	Image (single image)	Carousel (allows for multiple images to be used within a single Ad)
Image size	1200x628 pixels (the recommended size for Image Ad format)	1400x1400 pixels
Number of images in Ad	1	2
Design	Text in black and blue on white background and orange frame. Research website logo. University logo.	Black text on bright yellow background. Blue and green speech bubble icons. White text on blue background. Research website icon. University logo. #LoveIrishResearch logo.

Twitter Study Invitation

The social media platform Twitter (https://twitter.com/) is also a media that offers potential to recruit participants for health related research. Wasilewski found that using a personal Twitter account to recruit participants can expand the reach of study recruitment [18]. While Facebook is the largest social media network, the reach of Twitter recruitment for research has considerable potential. Twitter is mostly considered a platform for widespread conversation and the sharing of ideas [19]. Less than 10 percent of Twitter users make their accounts private and this allows for the re tweeting function that can lead to snowball type sampling [20]. However there is very little research to guide researchers in using Twitter as a recruitment strategy. Hendricks, study recommended posting tweets either early in the morning or late in the evening, as this can improve engagement [21]. The timing of tweets is an important consideration for researchers given that a tweet is likely to be viewed by users only if they are looking at their feed immediately after the tweet was poste [18]. The process involves creating an account on Twitter or using the researchers' personal Twitter account and creating a profile page. For the studies discussed in this paper, the researchers own Twitter account was used because they had already established followers. Having a significant online presence and number of followers is also an important concern for researchers [22]. In both studies, the researchers tweeted about the study but also engaged in a number of tweetchats with research supervisors and colleagues present on Twitter. This in turn attracting other Twitter users in their networks who in turn retweeted the post. This enhanced the visibility and reputability of both studies that led to better study exposure.

The researchers also created a research flyer for the study adds a visual element to the post. Over time the study research flyer advertisements were retweeted (shared or posted again) several times and at different times during the day. The posts were also retweeted by study supervisors and colleagues present on Twitter, attracting other Twitter users in their networks who in turn retweeted the post.

Several additional strategies can be employed to increase the visibility of a post on Twitter:
- *Pinned post*. This allows to permanently 'pin' a post to the top of the profile page until the pin is removed. The study advertisements were pinned to our profile pages to make it the first post that visitors to the pages would see.

-Hashtags. Hastagging content on social media platforms consists of the # symbol followed by a keyword, for example #depression #chronicillness. Hashtags are used to categorize posts on social media. Users can add hashtags to their posts to make them easier to be found by others. Vice versa, users can type a hashtag in the search box of a social media page to generate a list of posts that include that hashtag. In tweets about both studies hashtags were used such as #chronicillness #livingwithillness #growing upwithillness #Ireland #mentalhealth #eMentalHealth #mHealth #ehealth #research #WorldMentalHealthDay (on World Mental Health Day 2018) #FridayFeeling (on Friday 04/01/2019; this hashtag was in the first 10 Ireland trends on Twitter).

- Mentions. In a tweet, it is possible to mention or target a Twitter user by typing the @ symbol followed by their handle (i.e. their username; e.g. @OmhshpStudy, @emergingadulthealthstudy). Twitter users were targeted and asked to retweet my study advert, including mental health organisations, mental health professionals and other individuals with an active interest in the mental health field, preferably with a large Twitter following.

Studies lend support for using study-specific hashtags to improve recruitment [18]. Using the combinations of hashtags and mentions increase the likelihood that a study-related tweet would be seen by users interested in the topics.

Performance of the AD Campaigns

Information was collected from both studies concerning how participants heard about the research. Twitter, Facebook and the Activelink website, organisations / groups, and print flyers were the main ways in which the recruitment notice was disseminated. The data indicate that advertising on Twitter was the most effective recruitment strategy, with over one a quater (51/202, 25.2%) of the study participants recruited in this way. Facebook yielded slightly less with (42/202, 20.7%) participants. The third largest group of participants was recruited through a website, Activelink, a non-profit organisations in Ireland set up to develop online communications in the public interest. Recruiting through mental health or other organisations and groups (e.g. youth organisations, college departments) yielded a similar (although slightly lower) proportion of participants (28/202, 13.8%). This required the contribution of 34 organisations and groups who agreed to disseminate the recruitment notice. Few participants heard about the study though a friend or other close person (13/202, 6.4%) or a research flyer (3/202, 1.4%). A wider breakdown of the data is provided in Table 2.

Table 2: Detailed breakdown of the sources through which participants heard about both studies

	Participants
Both studies	**N=202** **n (%)**
Twitter	51 (25.2)
Facebook Ad	42 (20.7)
On the Activelink website *	39 (19.3)
Through a mental health organisation / chronic illness group	28 (13.8)
Through a friend	13 (6.4)
Through a non-mental health organisation / group	6 (2.9)
Flyer	3 (1.4)
Other - please specify:	20 (18.3)
University	1 (0.9)
During one of my lectures, principal investigator spoke about and distributed research flyers regarding the study	1 (0.9)
Email	1 (0.9)
Email	3 (2.8)
Email from a staff member at (other) university	1 (0.9)
Email through university	1 (0.9)
Email to University postgraduate students	1 (0.9)
Internal Departmental Email	1 (0.9)
LinkedIn	1 (0.9)
Parent (a mental health nurse) told me	1 (0.9)
Poster in (other) Universty	1 (0.9)
Recommended by college lecturer	1 (0.9)
Shared on depression/anxiety group on Facebook	1 (0.9)
Spunout.ie	1 (0.9)
Spunout.ie	1 (0.9)
Spunout.ie	1 (0.9)
Spunout.ie	1 (0.9)

*Activelink is a Irish non-profit organisations set up to develop online communications in the public interest, to promote action and participation and to foster the sharing of ideas, experience and information for a better world

Discussion

The Internet has become so ensconced in daily life that the line between online and offline communication has blurred. Indeed researchers have argued that methodologies should capture participants lives both online and offline [23]. A successful recruitment strategy needs to possibly incorporate more than one tool to recruit participants. Due to initial slow uptake of the survey in the adult study (18 years and above), the recruitment strategy evolved to target more specifically online places and groups where people with mental health problems and those using mental health support may hear of the study [24]. In both studies the researchers found that targeting the study advertisement was a useful feature. The Facebook advertising platform was used to target the specific audiences using demographic variables, location and language (English speaking). However Facebook offers a wide range of other variables that can be useful for researchers including behaviours, political views and others. This can be useful for researchers to target specific populations, diverse populations and previously difficult-to-reach participants such as in these studies.

While social media can offer researchers opportunities to engage different developmental groups in research, the complex nature of social media cannot be over emphasised. Researchers will need to keep informed about new developments and the latest trends in social media and be cognisant of their target population when considering platforms to use for participant recruitment. Currently Facebook remains the primary platform for most adults. However the landscape is changing and Facebook use by young people (13-17 year olds) is declining with usage plummeting from 71% in 2014/2015 to 51% in 2018 (Pews Research Centre 2018). Millennials and Generation Z (people born between 1981 – 1996) have turned to other online forums such as Snapchat and Snapchat and YouTube. The rapid rise in Snapchat usage in recent years with 28% of over 16s using the application in Republic of Ireland also highlights a more complex usage of social media by millennials.

The continued growth and penetration of social media networks should encourage researchers to explore ways to utilize social media in research. Social media networks can offer platforms to identify and recruit potential participants for health related research that require human participants [26]. In this paper, we demonstrated how in addition to offline methods, Facebook and Twitter enabled investigators to reach wider segments of the population and also to target individuals using relatively 'easy to use' eligibility criteria. Harnessing social media networks to recruit participants for health related research is gaining popularity and is likely to continue to grow in tandem with emerging platforms [27]. The power and reach of the virtual world is changing constantly and health professionals will need to keep abreast of the emerging technologies as they change. Web 2.0 technology is evolving on a daily basis. Newer platforms such as Instagram and Pinterest focus more on features such as photo sharing rather than communications between friends and family. Microblogs such as Twitter, Tumblr or Snapchat are more about short quick communications between individuals. Some target younger demographics and therefore researchers will need to be cognisant of their demographic when selecting social media networks to use. Exploring new online strategies as they emerge may put health professionals in a unique position to conduct research with much larger populations than previously contrived. Social media networks offer potential as a powerful research tool to recruit those difficult-to-reach populations where topics are sensitive or where face-to-face meeting may not be possible. Overall, our study supports existing research that underscores the importance of developing a strategy for recruiting that includes using social media such as Facebook and Twitter. We also highlight that this an evolving field and requires consideration before choosing specific tools from within the available social media networks.

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