



Recruiting for health, medical or psychosocial research using Facebook: Systematic review



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ABSTRACT

Recruiting participants is a challenge for many health, medical and psychosocial research projects. One tool more frequently being used to improve recruitment is the social networking website Facebook. A systematic review was conducted to identify studies that have used Facebook to recruit participants of all ages, to any psychosocial, health or medical research. 110 unique studies that used Facebook as a recruitment source were included in the review. The majority of studies used a cross-sectional design (80%) and addressed a physical health or disease issue (57%). Half (49%) of the included studies reported specific details of the Facebook recruitment process. Researchers paid between \$1.36 and \$110 per completing participants (Mean = \$17.48, SD = \$23.06). Among studies that examined the representativeness of their sample, the majority concluded (86%) their Facebook-recruited samples were similarly representative of samples recruited via traditional methods. These results indicate that Facebook is an effective and cost-efficient recruitment method. Researchers should consider their target group, advertisement wording, offering incentives and no-cost methods of recruitment when considering Facebook as a recruitment source. It is hoped this review will assist researchers to make decisions regarding the use of Facebook as a recruitment tool in future research.

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1. Introduction

Recruiting participants is a challenge for many health, medical and psychosocial research projects. Participant recruitment can often be an expensive and time consuming process, complicated by the fact that some traditional methods of recruitment, such as mail and phone recruitment have become more difficult and expensive in recent decades (Fenner et al., 2012; Balfe et al., 2012). In research environments where resources are scarce and project timelines are tight it is important for researchers to identify ethical, effective, efficient and representative methods of recruitment.

Online recruitment is more frequently being used to improve recruitment outcomes, by overcoming some of the limitations of traditional methods. In particular, Facebook has attracted researchers as a recruitment source, due to its widespread use and ability to target advertising to user characteristics. Facebook is a free social networking

website that allows users to create a profile, connect with other users and view and share content (Facebook.com, 2013). Globally, Facebook is the most popular social media site with 1.49 billion active users (users who have logged into Facebook during the last 30 days: Statista, 2015) and the 2nd most popular website, following Google.com (Alexa.com, 2015). The Pew Research Institute recently reported that 71% of US adults who use the Internet also use Facebook, which represents 58% of all US adults. Seventy percent of Facebook users also report that they use the site on a daily basis (Duggan et al., 2015).

Recruiting via Facebook is a potentially cost-effective way to contact a large number of individuals, in a short period of time. It has also been suggested as a particularly useful resource for recruiting younger people, (Christofides et al., 2009; Raacke and Bonds-Raacke, 2008), and low incidence and stigmatized groups, due to the anonymity and confidentiality that sites such as Facebook can afford (Balfe et al., 2012; Fenner et al., 2012; Ramo and Prochaska, 2012; Temple and Brown, 2011).

Adding to Facebook's appeal for research is the increasing diversity of users. While Facebook continues to be used at high levels by young adults, the Pew Institute found that more than half of all online older adults surveyed (56%) used Facebook, representing 31% of all adults aged 65 years and over (Duggan et al., 2015). Their study also found

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high rates of Facebook use (77%) were reported by people with a household income of less than US\$30,000 per year, indicating its reach into economically disadvantaged populations. Similarly, growth in Facebook usage is largest in developing countries (Duggan et al., 2015; Internet World Stats, 2012).

In order to legitimise the use of Facebook as a recruitment source, we need to better understand who is likely to participate in research recruiting via Facebook, how researchers are using it, how to economize the process and what the limitations surrounding this recruitment source are. However, only one group has previously examined the utility of Facebook recruitment for research-related purposes across a number of research trials. Focussed exclusively on recruiting adolescents, Amon et al. (2014) identified six studies that used Facebook as a recruitment tool of children aged 10 to 18 years. Amon et al. (2014) identified three ways in which Facebook was used for recruitment: (1) via paid advertising on Facebook (4/6 studies, at an average cost per participant of USD \$0.60 to \$20.14); (2) via a project-specific Facebook page (1/6 studies); and (3) to locate participants for follow-up (1/6 studies). The authors concluded that paid advertising on Facebook was an effective and cost efficient recruitment method, however many studies did not provide sufficient data to establish the efficacy of Facebook as a recruitment tool. It remains unclear as to how researchers might best optimize Facebook to recruit participants, particularly in research targeting populations other than adolescents (Amon et al., 2014).

The aim of the current review was to examine the methodology and effectiveness of recruiting participants of all ages, to any psychosocial, health or medical research, via Facebook. Specifically, the review aimed to determine: who is likely to participate in research recruiting via Facebook; how has this recruitment source been used by researchers; the most cost-effective recruitment strategies; and limitations associated with this approach.

2. Method

2.1. Eligibility criteria

To be included in the current review studies were required to recruit participants via Facebook, report primary data (as opposed to a review, commentary or editorial), be peer-reviewed and published in English.

2.2. Information sources and search

PubMed, PsycInfo, and Cochrane databases were searched in March 2015 using the following search terms in title, abstract or key words: (social media OR online social network OR Facebook OR social networking site) AND (advert* OR recruit*). Limitations were also placed on the year of the study, with studies from 2004 (when Facebook was launched) up to the time of the search included.

2.3. Study selection

A flowchart of the selection of included studies is presented in Fig. 1. In total, 590 abstracts were identified through the three database searches, of which 104 were removed as duplicates. The remaining 486 abstracts were screened for inclusion in the review.

No additional limitations were placed on study design. This initial screening of abstracts resulted in 151 relevant papers being retained, for which full text articles were collected. Screening of the full-text articles resulted in a further 31 studies being excluded, as they did not use Facebook as a means of recruitment ($n = 28$) or did not report primary data ($n = 3$).

2.4. Data collection

After screening, the 120 remaining papers were each coded by two independent raters using a pre-formulated coding sheet. All papers

were coded for (1) study characteristics including year of publication, location based on participant nationality or (if nationality not reported or diverse) author's location, topic of study and design of study, and, (2) whether the paper reported specifically on the recruitment processes using Facebook. Only papers that reported specific details on the Facebook recruitment process were further coded for: (3) sample characteristics (sample size, gender and age distribution), and (4) recruitment strategies including wording/image used in ad(s), time period taken to recruit, target group, and cost and method of Facebook advertising. The findings regarding Facebook recruitment for these studies were also summarised in terms of recruitment success, limitations and sample representativeness.

Finally, a search of coded papers was undertaken to identify studies that had been reported in more than one paper. This search was based on matching author names and study characteristics. Where the same study was described in more than one paper, the paper with the greatest detail regarding the Facebook recruitment process was retained, unless no distinction could be made, in which case the earliest paper was retained.

Bias in reporting of the recruitment process was assessed by recording summary details of all studies that recruited using Facebook, whether or not they detailed the recruitment process. Characteristics of studies that detailed the recruitment process were compared to those that did not.

2.5. Synthesis of results

The primary outcomes of interest in the current review were: cost of recruitment per completed participant and the gender distribution recruited to the study (only for studies where gender was not the basis of recruitment). These outcomes were compared on the basis of study characteristics. Costs were converted to US dollars (using the exchange rates on 5th August 2015) for comparability. When aggregating findings across groups of studies, cost per participant was assessed both in terms of the total cost for all studies in the group divided by the combined sample size, and in terms of the average cost per study. The average cost per study was compared across different types of studies using *t*-tests. Gender distributions were compared using Fisher's exact test. Other outcomes of interest included speed of recruitment, comparison of recruitment methods, characteristics of advertising strategies that were most effective, and limitations of recruiting on Facebook. These factors were summarised for each study and are synthesized in the results.

3. Results

Of the 120 papers coded, 11 papers describing the same study sample as another included paper were identified and removed. This resulted in 109 papers that were included in the review, and were found to describe 110 unique studies.

Table 1 describes the characteristics of included studies. The majority of included studies (57.3%, $n = 63$) addressed a physical health or disease issue. Seventeen studies (15.5%) recruited participants to research addressing mental health issues and 16 (14.5%) recruited to studies examining substance use. Twenty-three studies (20.9%) addressed other issues (e.g., workplace or intimate partner violence, childbirth expectations, rating facial portraits for attractiveness). Facebook was mainly used to recruit eligible participants to cross-sectional surveys (80%, $n = 88$), followed by trials (15.5%, $n = 17$) or longitudinal surveys (6.4%, $n = 7$). Four studies (3.6%) recruited participants to research employing qualitative methodologies. Included studies took an average of five and a half months to recruit their participants via Facebook. The range included 72 h (Child et al., 2014) through to almost 2 years (Hernandez-Romieu et al., 2014; Osborne et al., 2015).

The majority of included studies were conducted in the US ($n = 59$, 53.6%), Australia ($n = 24$, 21.8%) or the UK ($n = 11$, 10%). Eight studies

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