Original article

Paid and Unpaid Online Recruitment for Health Interventions in Young Adults

Peter Musiat, Ph.D. [a,b,*], Megan Winsall [a,c], Simone Orlowski [a,c], Gaston Antezana [a,c], Geoffrey Schrader, Ph.D. [a], Malcolm Battersby, M.B.B.S., Ph.D. [a], and Niranjan Bidargaddi, Ph.D. [a,d,c]

[a] Flinders Human Behaviour and Health Research Unit, Department of Psychiatry, School of Medicine, Flinders University, Bedford Park, Australia
[b] Section of Eating Disorders, Department of Psychological Medicine, Institute of Psychiatry, Psychology and Neuroscience, King's College London, London, United Kingdom
[c] Young and Well Cooperative Research Centre, Abbotsford, Australia
[d] Mental Health Informatics Research Unit, Country Health SA LHN Inc, Adelaide, Australia

ABSTRACT

Purpose: There is a growing need to identify new and innovative approaches to recruit representative samples of young adults in health intervention research. The current study used a data set of screening information from an online well-being intervention trial of young adults, to investigate cost-effectiveness of different recruitment strategies and whether the clinical and demographic characteristics of participants differed depending on paid or unpaid online recruitment sources.
Methods: Data were collected from 334 18- to 25-year-old Australians. The study was advertised through a variety of paid and unpaid online recruitment channels (e.g., Google, Facebook, Twitter, YouTube, recruitment agency), with response rates to different recruitment channels tracked using unique Web links. Well-being of participants was measured using the Mental Health Continuum Short Form. Analyses consisted of independent t tests and χ^2 tests.
Results: Overall, unpaid recruitment channels had a considerably higher yield than paid recruitment channels. Of paid recruitment channels, a recruitment agency and paid Facebook advertisements attracted the largest number of individuals. This study also found differences between paid and unpaid online recruitment channels with regard to the well-being and mood of participants.
Conclusions: Although the success of online recruitment channels is likely subject to a complex interplay between the number of exposures, the targeted sample, the wording, and placement of the advertisement, as well as study characteristics, our study demonstrated that unpaid recruitment channels are more effective than paid channels and that paid and unpaid channels may result in samples with different characteristics.
© 2016 Society for Adolescent Health and Medicine. All rights reserved.

IMPLICATIONS AND CONTRIBUTION

This study systematically investigated different online channels for the recruitment of young adults into health intervention research, with regard to yield, costs, and user characteristics. The findings have important implications for research in this population.

Research into health and health-behavior interventions with young adults (18–25 years) is often associated with recruitment challenges [1,2]. Tertiary education settings have been popular for recruitment, but studies conducted in these settings are not representative and hence have a poor translational

* Address correspondence to: Peter Musiat, Ph.D., Institute of Psychiatry, Psychology and Neuroscience, De Crespigny Park, London SE5 8AF, United Kingdom.
E-mail address: peter.musiat@kcl.ac.uk (P. Musiat).

potential [3,4]. Thus, there is a growing need to identify new and innovative approaches to recruit representative samples of young adults. Young adults' preference for digital communication, coupled with the rapidly evolving technological landscape, has resulted in a wide array of innovative methods for recruitment.

Within this array, a distinction can be made between paid and unpaid recruitment channels, each with different mechanisms at play, resulting in different sample characteristics. Exposure of paid and unpaid advertisements to users may be based on entirely different conditions. In unpaid recruitment strategies, advertisements may appear on the basis of known user characteristics, such as demographic parameters or membership in groups on social media. In this case, advertisement exposure is more likely to be between individuals within a particular network and therefore with shared interests and/or characteristics. This introduces a risk of recruiting highly homogenous and nonrepresentative samples. When considering the perception of online advertisements, unpaid ads posted on familiar Web sites or social network groups may also be perceived as more trustworthy than paid advertisements. Among unpaid online recruitment channels, large social networking sites, such as Facebook, Twitter, and Google, each with large numbers of users worldwide, have emerged as potentially fast and easy methods of recruitment. Young adults use these sites frequently and in large numbers. In Australia, 68% of Internet users visited social networking sites and 49% do so every day or multiple times per day. The most frequently used social media sites are Facebook (93%), LinkedIn (28%), Instagram (26%), Google+ (23%), and Twitter (17%) [5]. Unpaid recruitment through social networks involves leveraging the various existing social structures embedded in the social network, which affects the success of recruitment. For example, one multisite intervention study that used Facebook and Twitter to recruit students from various universities reported better study enrollment and completion in students recruited from universities directly involved in carrying out the research [6].

Paid methods for online recruitment involve the placement of advertisements on highly frequented sites, such as Google or social networks. Advertisements appear based on the user entering specific search terms or browsing-related Web and social media content. In addition, paid advertisements in Facebook and Twitter can be targeted to specific age groups as well as location. Although several studies have used this method of recruitment successfully [7,8], its performance in relation to recruiting young adults is not well established, since studies using this method rarely report participant age. Other paid strategies for recruitment include email campaigns and banners and use of recruitment agencies. The chosen recruitment platform and nature of the study appears to influence the success of recruitment. Studies noting successful recruitment using online strategies have used mainly Facebook and Google paid advertisement capabilities and largely involve cross-sectional surveys and epidemiological research [8–11].

It is a common practice in research to use a range of online methods for recruitment, but the costs and success associated with the individual strategies are rarely reported. While some studies have investigated the cost-effectiveness of individual recruitment sources such as search engines or social networks [12], there is no research to date comparing the cost-effectiveness, as well as demographic and clinical characteristics of recruited participants, of several paid and unpaid online

recruitment strategies within a young adult population. Lindner et al. [13] described the demographic and clinical characteristics of their (general adult) sample of participants seeking help for depression and found that those recruited by online advertisements were as depressed as those from clinical settings, while those recruited by newspaper advertisement were less depressed. However, it is not known if these findings are applicable to young adults, and the identification of the recruitment source was only based on self-report.

There is a clear need to understand how various Web and social media recruitment platforms behave, perform, and differ between each other. Using the screening information from an online well-being intervention trial of young adults (n = 334), the present article examines the efficacy and cost-effectiveness of different recruitment strategies and whether the clinical and demographic characteristics of participants differ depending on paid or unpaid online recruitment sources.

Methods

Sample

Online recruitment targeted Australians 18–25 years of age for participation in a waitlist randomized controlled trial (ACTRN12614000710628) investigating the effectiveness of an online well-being intervention [14]. This study gained ethical approval by the Social and Behavioural Research Committee of Flinders University (registration number 6,478) and from the Department of Education and Child Development of South Australia. Response rates to different recruitment channels were tracked by distributing a unique Web link for the project Web site to each recruitment channel. Thus, it was possible to identify the specific recruitment channel that participants responded to when signing up for the study. In some cases, these data were obtained using browser metadata, such as cookies. For 15 individuals it was not possible to determine the recruitment channel and 22 individuals did not provide baseline data. As the age of participants could not be verified, the intervention Web site did not prevent individuals outside the targeted range from signing up. Inclusion criteria for the trial also included individuals aged 16–17. However, data from these individuals (n = 25) are excluded as were recruited from face-to-face meetings in local communities and schools in South Australia [14]. This study reports data from participants recruited through the various paid and unpaid online channels, regardless of eligibility for the trial.

Paid online recruitment. Two paid advertisements for the study were placed on the search engine Google. These ads appeared on the top of the search results for a range of selected keywords (e.g., *mental health*, *anxiety*, *depression*, *health apps*). No demographic targeting was set for these ads. A complete list of search terms is shown in Appendix A. Google advertisements were placed for a total of 10 days (between 9th January and 24th January, 2015) and a pay-per-click limit of A$200 was set for each ad. Similarly, two paid advertisements were placed on Twitter for a period of 2 weeks (26th February–12th March, 2015). These ads appeared based on (1) information provided by the user on registration with the service, (2) the networks a user is following or followed by, (3) search activity, or (4) location and browser data. The total costs for Twitter advertisements amounted to A$2,100 but were covered through the *Twitter for Good Program*.