Original Article

Facebook as an effective recruitment strategy for mental health research of hard to reach populations

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ABSTRACT

Recent reports indicate that Facebook (FB) may facilitate recruitment of hard to reach participants into mental health research. The present study aimed to contribute to this emerging literature by exploring recruitment data from a recently completed trial of online treatment for symptoms of anxiety and depression that targeted Arab people. The present study compared traditional recruitment strategies such as media releases, emails, and print advertisements with Facebook strategies including boosting posts, promoting websites, events and FB public fan pages. The main outcomes of interest were the number of started applications and the time and cost per application associated with the FB and traditional recruitment strategies. A target sample of 350 was sought and a total of 81 participants applied to participate over the 42-week recruitment period. Overall, 86% of the resultant applications occurred via FB recruitment and a Poisson regression analysis indicated the FB strategies were more time-effective, recruiting participants 2.5 times faster than the traditional strategies. However, there were no differences in cost-effectiveness for FB ($US37 per participant) and traditional strategies ($US40 per participant). The findings of the current study add to existing literature detailing the value of FB recruitment strategies, alongside more traditional strategies, as a way of recruiting hard-to-reach populations for research. However, more research is needed to explore alternative and optimal strategies for the successful recruitment of hard to reach populations via FB and other online social media platforms.

1. Introduction

Facebook (FB) is the most popular social media platform in the Western world, with an estimated global membership of 1.49 billion people (Facebook, 2015a). The use of FB has extended beyond maintaining social contacts to use as a platform for commerce, health, education, and a broad range of other purposes. By virtue of its widespread use, relative anonymity, cost-effectiveness and acceptability, FB is increasingly being used as a strategy of recruitment for research (e.g., Batterham, 2014; Berry and Bass, 2012; Eysenbach et al., 2012; Harris et al., 2015; Koenings et al., 2015; Nelson et al., 2014; Wen-Cheng et al., 2011; Young et al., 2014) replacing traditional recruitment strategies (Harris et al., 2014; van Voorst et al., 2015). More recently, FB has also been successfully used to facilitate recruitment of populations who might not respond to traditional recruitment strategies, including adolescents (Amon et al., 2014, 2015), young adults aged 18–23 (Loxton et al., 2015) and ethnic minorities (Ünlü Ince et al., 2014).

For example, a recent study (Ünlü Ince et al., 2014) reported a comparison of outcomes when using different promotional techniques to

recruit Turkish immigrants in Holland to a research trial. These researchers compared traditional promotional techniques, including email distribution lists, press releases, digital mailing, flyers, and newspapers advertisements, with a FB *personal* and *public fan page* designed specifically for the research study. FB *public fan pages* are profiles or sites created in Facebook for organisations to share their stories and connect with people who choose to *like* their page and become fans. FB *personal pages* are profiles or sites created for individuals to share their information (Facebook, 2015b). Ünlü Ince et al. (2014) noted that their FB personal and public fan pages resulted in 76% of applicants to the research trial, a proportion superior to all the other recruitment strategies they employed combined. Other studies have reported similar results comparing FB with traditional recruitment campaigns (Loxton et al., 2015). This highlights the potential of Facebook in the recruitment of other hard-to-reach ethnically diverse populations, such as the Arab community.

The term *Arabs* refers to individuals of an Arabic speaking background with origins from 22 countries in North Africa and the Middle East (Victorian Arabic Social Services, 2010). Arabs are a difficult to reach and under-researched population in mental health research (Abudabbeh and Hays, 2006; Redwood and Gill, 2013). As of May 2014, the total number of Arab FB users was 81 million, compared with 54 million 12 months earlier, representing an FB

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penetration rate in May 2014 of 21.5% (Arab Social Media Report, 2014). The growing numbers of FB users in the Arab region indicate that this platform could be used to facilitate recruitment of Arabs into mental health research. However, to our knowledge, there are no published accounts of using FB for this purpose. Given the limited evidence of efficacy of psychological treatments with Arab people (Gearing et al., 2012; Takriti et al., 2005), recruitment of Arabs to mental health research is an urgent priority.

The present study aimed to contribute to the emerging literature by comparing traditional and FB recruitment strategies using data from a recent trial of internet-delivered cognitive behavioural treatment (iCBT) for anxiety and depression that targeted Arab people (Kayrouz et al., 2016). At the time of the study, FB offered several promotional strategies including: (1) promoting posts; (2) promoting public fan pages; (3) promoting websites and (4) promoting events. The present study also sought to extend on the available literature by also comparing the time and costs associated with traditional and FB strategies. Consistent with recent reports, it was expected that FB strategies would be superior to traditional recruitment strategies.

2. Method

2.1. Design

The evaluation of recruitment strategies involved a *post hoc* design. The design was enacted as a response to the low participation rate arising from traditional strategies for a trial of a free internet-delivered cognitive behaviour therapy for Arabs (Kayrouz et al., 2016) and the emerging literature about the effectiveness of Facebook as a recruitment strategy (e.g., Harris et al., 2015; Loxton et al., 2015). Consequently, the research team thought it was important to report findings in order to inform other researchers about the potential of FB in reaching hard to reach populations. A formal evaluation of cost, time, and scale of recruitment was performed in order to better understand the outcomes and limitations of each strategy. Details of the main study are described in more detail in Kayrouz et al. (2016) and relevant information is summarised below.

2.2. Background information about the main study

The main study aimed to evaluate the efficacy and acceptability of a culturally modified version of an evidence-based treatment, the Wellbeing Course (Dear et al., 2015; Titov et al., 2013, 2014, 2015a,b) for use with Arab people. The modified course, the Arabic Wellbeing Course, is a five-lesson iCBT intervention delivered over eight weeks targeting symptoms of anxiety and depression (Kayrouz et al., 2015). The main study was approved by the Human Research Ethics Committee of Macquarie University, Sydney, Australia, and registered as a clinical trial with the Australian New Zealand Clinical Trials Registry, ACTRN12614000124639.

The main study aimed to recruit 350 Arab people, regardless of location in the world. Inclusion criteria for participation in the main study were the following: (1) person who self-identified as being of Arabic ancestry (i.e. the person, their parents or grandparents were born in an Arabic-speaking country); (2) living anywhere in the world including Arab and non-Arab countries; (3) between the ages of 18 and 70; and (4) having reliable internet access. Exclusion criteria for participation were the following: (1) experiencing very severe symptoms of depression (defined as a total score ≥ 23 or a score > 2 on question 9 of the PHQ-9) (Kroenke et al., 2001); and (2) if taking medication for anxiety or depression, not having been on a stable dose for at least one month.

2.3. Outcome measures (present study)

The present study examined two outcome measures evaluating the cost and time effectiveness of traditional and FB strategies. The two

outcome measures of interest included the following: (1) the cost in $US of starting a new application due to the overall strategy (Facebook vs. Traditional), that is, the cost-effectiveness per person who applied; and (2) the time taken in weeks for a new application to occur because of the overall strategy (Traditional vs. Facebook), that is, time-effectiveness per person who applied.

The comparison of strategies was enabled through the collapsing of several, diverse recruitment strategies into two overall clusters of strategies, considered here as "Traditional" and "Facebook". Recruitment was defined as those who started an application to the main study. Within each strategy, several steps were taken to attract participants. Over a period of 14 weeks, "Traditional" community engagement efforts such as radio interviews, newspaper advertisements, email circulation to health professionals, religious and secular organisations were taken. Some of these strategies and their effectiveness may have overlapped, making the unique comparison between more specific strategies unclear. However, paid FB strategies occurred at a different time, with some weeks no FB strategies used. Thus, a distinct period of 28 weeks is used to compare a recruitment window where Facebook strategies were used uniquely, against the window of recruitment where traditional strategies were used.

The time and date of each started application to the main study were recorded by the research clinic software system. For traditional and FB strategies, new applications arising during the implementation of the respective strategies were used to measure the effectiveness of the overall strategy. Fig. 1 shows a timeline of when traditional and FB recruitment strategies were implemented and the new applications arising at the time the recruitment strategies were used. A notable point from the figure is the immediacy of a successful application within the week or close after the recruitment. Thus, recruitment appears to translate to applications within the week, and without a delayed effect.

2.4. Procedure

Details of the promotional strategies are included in Table 1. Most of the traditional strategies were presented in English, with the exception of the two newsletters, the heading of the flyer, and the radio interviews, which were in Arabic. All of the Facebook strategies were presented in English. The reading age/literacy level assumed was the ability to read a local English or Arabic newspaper. Compared to FB, the text used in traditional strategies was longer and provided more details about the main study (see Figs. 2 vs. 4–6). Culturally appropriate images (see Figs. 2 and 6) and content were used across both strategies. The content of both strategies addressed the barriers of cost, the stigma of seeking help, and the lack of trust in mental health services (Gearing et al., 2012; Kayrouz et al., 2014), by emphasising that participation was free, anonymous and could be done from home (see Figs. 2, 3 and 6). All recruitment campaigns targeted adults of Arabic ancestry who experience stress, anxiety or depression living in Western (e.g., Australia, UK and the USA) and Arab (e.g., Lebanon, Egypt, Saudi Arabia and Kuwait etc.) countries.

2.4.1. Traditional recruitment strategies

The recruitment campaign began by utilising traditional strategies (see Table 1). These strategies included the following: (1) a media release by the University media and communications department to relevant media organisations; (2) emails with attached flyers (see Fig. 2) to 94 different relevant Arab organisations (e.g., medical, secular and religious organisations), 108 health professionals and to approximately 80 interested individuals; (3) two newspaper advertisements in English, costing $US 440 (see Fig. 3) and two editorials in Arabic in an Australian Arabic newspaper; (4) flyers (see Fig. 2) in English in religious organisations and the Australian Lebanese Medical Association's newsletter; and (5) information about the research on websites of the University and five mental health related organisations. Due to a slow rate of recruitment from these traditional strategies, and the emerging

Fig. 1. Number of applications by week in relation to recruitment strategies.

Table 1
Types of recruitment for the main study.

Method of recruitment	Details of recruitment strategy (cost)
1. Press release [a] Press release by Macquarie University	Resulted in 2 editorial articles in local Arabic newspaper [b] (free) Resulted in 2 radio interviews with local broadcasting stations [b] (free) Macquarie University placed announcement on website (free) Two mental health related organisations advertised study on website (free)
2. Emailing [a] Researcher's personal and professional networks 94 organisations providing services to Arabs 108 Arabic speaking health professionals 80 interested individuals of an Arabic-speaking background 20 Muslim and Christian religious clergy for Arabs	3 mental health care organisation promoted the research on their websites (free) 5 religious organisations—announcement on newsletters (free) [resulting in collateral promotions, such as clergy speaking to respective congregations about the study]
3. Advertisements [a] Two advertisements in the largest Arabic newspaper in Australia and an English newspaper in Lebanon	1 local newspaper and online advertisement over two weekends ($US 440) 1 international newspaper and online advertisement for one day (free)
4. Facebook—Promoting posts [a]	25 campaigns of boosting posts on FB page (US $2122)
5. Facebook—Promoting FB pages [a]	10 campaigns of boosting likes on FB page (US $438)
6. Facebook—Promoting websites [a]	1 campaign of boosting website (US $18)
7. Facebook—Promoting events [a]	1 campaign of paid boosting of an event (US $11)

Note.
[a] Published in English.
[b] Published in Arabic.

evidence for FB in the recruitment of ethnic minority populations (Ünlü Ince et al., 2014), FB recruitment strategies were then employed. Overall, the traditional recruitment strategies were active for 14 weeks from Jan. to July 2014, with emails sent for 3 weeks, newsletters for 2 weeks, print and online ads for 4 weeks, SBS radio interview podcast for 2 weeks and newspaper editorial for 3 weeks (see Fig. 1).

2.4.2. Facebook promotion strategies

The Facebook recruitment strategies were active for 28 weeks from July 2014 to March 2015. After creation of a personal profile and a dedicated FB public fan page about the research (for a detailed description of the process see Ünlü Ince et al., 2014), four FB promotion strategies were implemented (see Table 1), which are described below.

2.4.2.1. Promoting posts via boosting. Promoting posts occurs by paying for specific posts on a dedicated FB public fan page to have greater reach via *boosting*, a strategy whereby the post is made visible in the *news feeds* of followers of a FB page or to a specified target audience. Promoting posts has been found to be more effective in generating more likes to a FB public fan page than FB ads (Chan, 2012; Young et al., 2014). Several campaigns ($n = 25$; at a combined cost of $US 2122) of several different posts over 27 weeks were created to attract members of the Arab community to participate in the research. Posts primarily varied in terms of the images that were uploaded or attached to the post, and these comprised either animated images (see Fig. 4), or static images of Arab individuals expressing sadness or anxiety (see Fig. 6). Target audiences of boosted posts also varied across studies. Recruitment to the main study targeted the fans and friends of fans of the research team's public FB page. All posts were boosted to reach more FB users. For example, one post that was boosted targeted the fans and their friends of the dedicated research public fan page, males and females, aged, 18–65+, specified locations (e.g., living in Australia, Algeria, Egypt, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, United Arab Emirates, United Kingdom, Algeria, Egypt and Palestine), set a maximum budget (i.e., $100) over a specified duration (i.e., 7 days) and finally organise payment (i.e., credit card details). Despite these differences, the content and structure of the posts were similar. A typically promoted post comprised a succinct description about the research, with a hyperlinked relevant image about anxiety and depression that directed the FB user to information about the main study on the research website (see Fig. 4).

A Free Internet-Delivered Education Course to Strengthen Emotional Health in Adults of an Arabic Speaking Background (18+)

استشارة مجانية حول الصحة النفسية لأبناء الجالية العربية

DID YOU KNOW? ...

- 1 in 5 Adults experience anxiety or depression each year.

- Research shows that lack of time, cost, and stigma are barriers stopping people learning how to improve their emotional health.

- There are practical, but proven skills that can help people manage low mood, stress and anxiety. The Wellbeing Course teaches such skills.

Free, Self-Guided and Anonymous

The Course is **free** meaning it costs you nothing to participate.

The Course is **self-guided** meaning that you work online through the material of the Course on your own.

The Course is **anonymous**, if you choose we will not know who you are.

What is the purpose of the Arabic Wellbeing Course?

The Arabic Wellbeing Course is a free internet-delivered education course that teaches practical skills for managing symptoms of low mood, stress and anxiety.

We have created versions of the Wellbeing Course for different ethnic groups, including for Arab Adults. We did this because we know many people have difficulties with low mood, stress and anxiety, but few people have access to, or never seek effective treatment. The Wellbeing Course is suitable for:

- Adults of Arabic heritage
- Adults aged 18 and over
- Adults with symptoms of low mood, stress and anxiety
- Adults that have a basic English reading level.

What does the Course involve?

- The Arabic Wellbeing Course consists of 5 online lessons completed over 8 weeks.
- Simple do it yourself (DIY) guides are also available to help you to learn the material.
- Your participation is anonymous, that is, we will not know who you are, except we will ask for an email address so we can send you important information.
- But, we will ask you to fill in online questionnaires about your symptoms before, during and after Course and at 3 and 12 months after the Course. These questionnaires will take 10 to 15 minutes to complete.

How to Participate

Visit our website (www.ecentreclinic.org) and read more about the **Arabic Wellbeing Course**. Please also contact us via the details below if you have any questions.

Project Investigators: Mr Rony Kayrouz, Dr Blake Dear & A/Prof. Nick Titov

Fig. 2. A flyer created for traditional recruitment strategies, distributed by email across 94 organisations, 108 health professionals and 80 interested individuals.

2.4.2.2. *Promoting FB public fan pages.* FB public fan pages can be *promoted* by paying for the FB public fan page to have greater reach and generate more fans via *liking* the page. However, if posts are not boosted they reach only a fraction (i.e. approximately 1–2%) of one's fans of their FB public fan page. In comparison, boosted posts reach approximately 20% of the fans of a FB public fan page and friends of fans making this strategy an attractive recruitment option. Ten campaigns over six weeks of promoting the dedicated research FB public fan page, eCC Arabic Wellbeing (at a cost of $US438) were conducted prior and during the boosting of posts for the main study (see Fig. 5) targeting the same audience as the FB boost post example in the previous section.

2.4.2.3. *Promoting websites. Promoting websites* on FB public fan pages is achieved by paying for a website to have further reach using an advertisement created by FB. This advertisement requires the target website URL, a headline, text explaining the purpose of the page, that is, research, and an image on the FB public fan page. Similar to the FB post target audience, one campaign over two weeks (costing $US18) was run with promoting websites in the main study, and an example is included as Fig. 6.

2.4.2.4. *Promoting events.* The fourth promotional strategy offered by FB involved creating events on one's personal page and/or FB public fan page then *promoting that event* by inviting friends to participate in the research event. Using this strategy, the researcher creates a new event describing the details of the research, providing a location and time of the event, instructions on how to apply for the event and invites friends or fans to apply for the research. FB sends out automatic reminders to friends or fans as the date of the event approaches. This strategy also

Fig. 3. Print and online media advertisement.

allows the researcher to post more information about the event as *comments*, and to answer questions about the event. FB allows payment to raise attendance at the event on FB public fan pages, and allows targeting of an audience by demographic characteristics including language, age, gender, interests, behaviours and other categories (Facebook, 2014). The main study included two campaigns of promoting events over two weeks. The first used the *no-payment* option and the second used the *payment* option (costing $US 11) on the FB page (see Fig. 7).

2.5. Analytical plan

A Poisson regression analysis was conducted on the count of started applications and the associated recruitment strategy. To account for the changing duration of active recruitment within each strategy, the number of weeks associated with each strategy was used as an offset variable. The Poisson model, with the offset variable, enables the calculation of the recruitment efficacy as an incidence density ratio (IDR) for time. IDR-time is the amount of weeks needed by each strategy in order to recruit one participant. A similar analysis was conducted to test the second aspect of recruitment efficacy, the amount of money spent on each strategy, and the corresponding count of successful cases (IDR-money). The IDR-time and the IDR-money were used as the dependent variables. The recruitment strategy as a group of strategies was used as an independent variable (i.e., the sum of all traditional strategies vs. the sum of all Facebook strategies). The Poisson model estimates the odds ratio $(\exp(\beta))$ for IDR-time and IDR-money, which indicates the increase or decrease in the time and cost of recruiting one participant resulting from the sum of traditional strategies relative to the sum of FB strategies, respectively. A Poisson regression analysis was conducted with SPSS22.

Fig. 4. An example of a promoted post.

3. Results

3.1. Demographic characteristics

Demographic data about people who were included in the 2007 Australian National Survey of Mental Health and Wellbeing (NSMHWB; Slade et al., 2009) were compared with the Arab sample obtained for the present study, to provide information about the characteristics of the obtained sample relative to an Australian sample who met diagnostic criteria for an anxiety or depressive disorder. Although the samples were not formally compared, this comparison indicated that the Arab sample had a similar proportion of females (56.0% in the Arab sample vs. 54.5% in the NSMHWB), similar proportion were married (45.0% vs. 49.0%), lower rates of employment (44.0% vs. 62.2%) and higher rates of post-school qualification (90.0% vs. 33.0%).

3.2. Efficacy analysis

FB recruitment strategies generated 70 applications (86.4%) for the main study at a cost of US $37 per application, whereas traditional
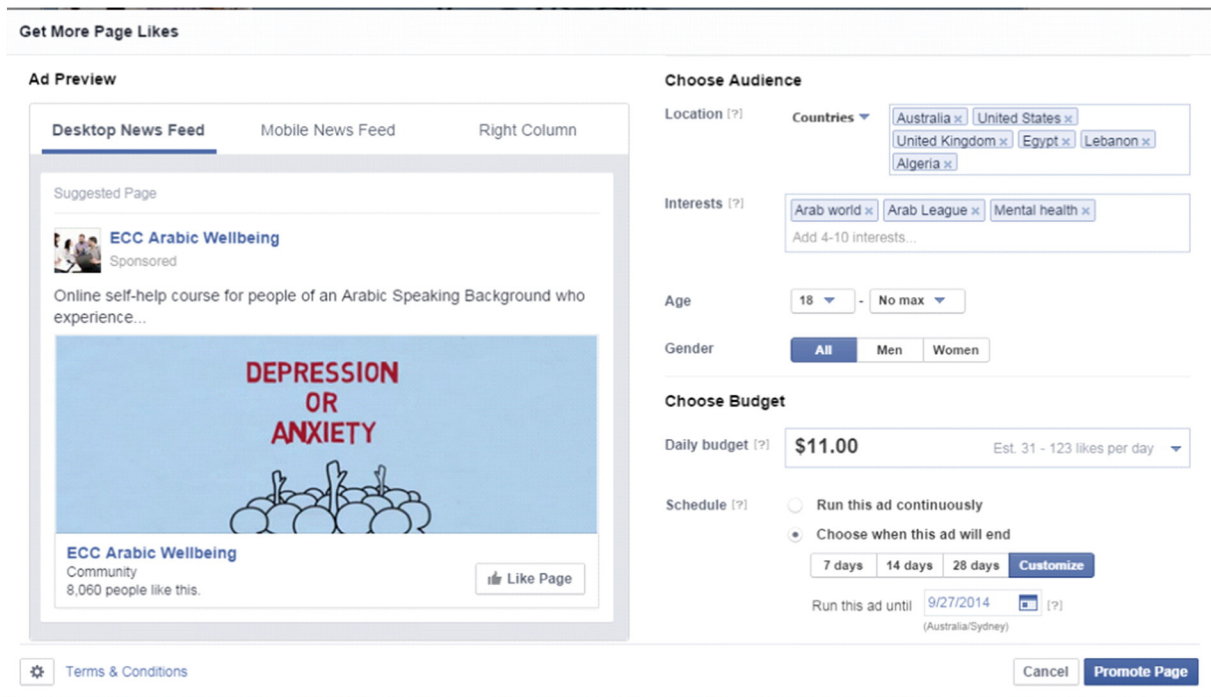
Fig. 5. An example of a promoted FB public page.

Fig. 6. An example of promoting a website.

strategies yielded 11 applications (13.6%) at a cost of US $40 per application (see Fig. 8). Compared to traditional recruitment strategies, the IDR-money of the sum of FB strategies (i.e., US $37 per application spent on FB to recruit one participant) was not significantly different from the IDR-money of the sum of traditional strategies at US $40 per participant ($Wald\ \chi^2 = .059$, $p = .81$, ($\exp(\beta) = 1.08$). In relation to time-effectiveness (see Fig. 8), the IDR-time of the sum of FB recruitment strategies at 0.5 week per participant was 2.5 times faster than the IDR-time of the sum of the traditional strategies at 1.27 weeks per participant ($Wald\ \chi^2 = 8.30$, $p = .004$, $\exp.(\beta) = 2.54$).

4. Discussion

The primary aim of the present study was to compare the effectiveness of traditional and FB recruitment strategies for recruiting Arab adults worldwide for a research trial of a free internet-delivered treatment for anxiety and depression. Only 23% of the target sample (81/350) was recruited using both recruitment strategies over 42 weeks. However, notwithstanding the failure of recruitment, the results indicated that 70/81 (86.4%) participants had been recruited via FB strategies compared with 11/81 (13.6%) via more traditional strategies. The FB recruitment strategies ($37/participant) were not more cost-effective than traditional recruitment strategies ($40/participant). However, FB was found to be more time-effective than traditional strategies with participants being recruited up to 2.5 times faster than traditional strategies. Thus, the findings of the current study add to existing research highlighting the value of considering FB recruitment strategies, alongside more traditional strategies, as a way of recruiting hard-to-reach populations.

The overall findings of the current study are consistent with recent reports supporting the potential of FB strategies to facilitate the recruitment of hard to reach groups compared with traditional techniques

(Batterham, 2014; Harris et al., 2015; Loxton et al., 2015; Ünlü Ince et al., 2014). In the current study two FB strategies in particular, that is, boosting posts and promoting FB public fan pages, seemed to have the largest impact on recruitment rates. This is broadly consistent with previous studies that have reported that boosting posts resulted in more participants being recruited compared with posting general FB ads (Fazzino et al., 2015). However, the finding of similar cost-effectiveness of FB and traditional strategies is inconsistent with previous findings that reported traditional strategies were less cost-effective when compared to FB strategies (Batterham, 2014; Harris et al., 2015; Loxton et al., 2015; Ünlü Ince et al., 2014). Notwithstanding the similarity in cost-effectiveness, FB offers a time advantage, recruiting participants at a faster rate than traditional strategies. This benefit has not previously been reported but represents an important advantage for researchers.

These results concerning the effectiveness of the FB strategy of combining boosting posts and promoting public fan pages need to be interpreted with caution because of the overlap used across the two FB strategies and the lack of previous research on promoting public fan pages. Despite this and as might be expected these results provide preliminary evidence that certain FB promotional strategies may be more effective than others and highlight the importance of considering different strategies in efforts to recruit participants. Future research comparing the relative efficacy of different FB recruitment strategies and when they may or may not be helpful would be beneficial.

Notwithstanding their benefits, promoting events on one's personal FB profile is limited to one's FB friends and thus promoting events in this manner can quickly result in saturation. Further, promotion of a website is not targeted to specific groups and may therefore be less effective as the promotion can result in the FB advertisement going to interested people who are not of an Arabic speaking background, but cannot participate in the main study. This is a potential question for future

Fig. 7. An example of a promoted event.

research, which could also examine the relative efficacy of promoting events and websites.

There are several aspects of FB promotional strategies and research promotion via FB that may contribute to their usefulness in the recruitment of hard to reach populations. First, as highlighted elsewhere (Ünlü Ince et al., 2014), recruitment FB provides an easy avenue for potential research applicants to contact their research team with any questions or concerns prior to more formal contact about the study or the submission of applications to participate. This communication occurred in a media channel, that is, FB, which allows potential participants to ask questions and make comments about the research in which others can see and may facilitate engagement. We also suggest that FB provides an opportunity for potential applicants to become better informed about the research and the research team and the opportunity to develop a sense of the credibility and trustworthiness of the research team likely to influence decisions to participate in research. Research shows that information about credibility and the effectiveness of mental health interventions, which form part of what is considered mental health literacy, influence decisions to seek treatment (Jorm, 2012). Thus, if FB recruitment can be used to build credibility and positive expectations of intervention, then their potential for recruitment may be significant.

4.1. Limitations

Several limitations of this study should be acknowledged. First, a key limitation is that this was a post-hoc study, and the traditional promotions all occurred before FB, with no randomisation or control for order. Second, the algorithms used by FB in promoting pages are known to change regularly and are likely to continue to change into the future. Thus, it is important that researchers understand how the different promotional strategies attract users, as the fundamental principles of this are likely to remain relevant with any changes made by FB. These principles are also likely to be helpful across other technological mediums (e.g., Twitter, Blogs) and other yet unknown social media services likely to emerge in the future. Third, FB may not be the best recruitment strategy for all communities. For example, those with low mental health literacy and poor Internet skills may still benefit from traditional promotions that can be more direct and personal. Related to this limitation and the relatively small sample recruited, we note
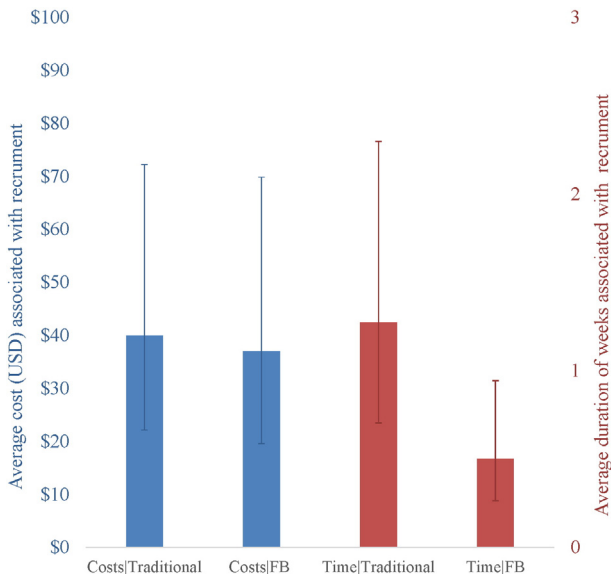

Fig. 8. Time and money estimates associated with the recruitment of a single participant.

that researchers should avoid assuming that the characteristics of those recruited through FB are representative of the target population. Fourth, the use of FB as a recruitment tool required a significant commitment of time, but indirect costs associated with time were not calculated. Our experience was that starting the campaign required approximately 4 h/week, but also required an ongoing commitment of daily monitoring, amounting to approximately 1 h/week in the maintenance phase. Fifth, care must be taken by the researcher when using the personal profile of a researcher as part of the promotional strategy as the premise of FB involves creating *friends*, which is not entirely consistent with the typical ethical position of researchers and therapists in relation to patients. The risks of this latter issue can be mitigated through regular clinical supervision, as well as clearly defined operational policies and procedures with respect to the use of FB and other social media in recruitment activities. Sixth, it is unclear if online recruitment would work as well if there were a face-to-face component to the research (e.g., the research is geographically restricted). Finally, the format/content of advertisements across traditional and FB approaches had to differ by virtue of the requirements for each and it is not possible to separate out the effects of these differences in format and content.

4.2. Conclusions/recommendations

The findings of the current study add to existing research highlighting the value of considering FB recruitment strategies, alongside more traditional strategies, as a way of recruiting hard-to-reach populations for research. The present study highlights the potential of FB and other technology-based recruitment strategies to provide access to research participants for studies aimed at developing and evaluating services for such populations. Nevertheless, despite the use of the FB recruitment strategies, it is important to note that the present total sample recruited was considerably smaller than the initial target numbers. Thus, while FB and other online recruitment strategies offer a new way of reaching potential participants, research exploring alternative and optimal strategies for engaging with hard to reach populations is needed.

Contributors

The lead author designed and promoted the study, conducted the analyses and drafted the manuscript. All co-authors reviewed the design and the manuscript. EK provided statistical advice and support with the statistical analysis and graphs. All authors have contributed to and have approved the manuscript.

Declaration of conflicting interests

The Authors declare that there is no conflict of interest.

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