CLINICAL INVESTIGATION

in

Encouraging young men's participation in mental health research and treatment: perspectives in our technological age

Young men have traditionally been under-represented in mental health research, which has had significant implications for the validity of reported findings and for the delivery of effective mental health services to this group. Innovative strategies are needed to recruit young men to mental health research and treatment. The internet, and in particular social media, offer a promising new way to engage with young men around their mental health. Youth participation approaches also offer the potential to enhance young men's engagement with research and mental health services. In this article we draw on our experience with these approaches, we discuss their potential strengths and limitations and describe opportunities for technology-based engagement with young men on issues of mental health.

Keyword: intervention • mental health • recruitment • young men

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The majority of young Australian men with mental health problems do not seek professional help [1]. When left untreated, mental illness can often lead to further complications, such as self-medication with alcohol or other substances, as well as the inability to thrive socially, academically and vocationally [2]. Research efforts are urgently needed to identify which models of service delivery and interventions are efficacious for young men; but to conduct such research, this group first needs to be targeted and enrolled. A key challenge faced by researchers is how to engage young men in mental health research and treatment. How can the challenges of stigma, fear and confidentiality concerns be overcome to embed a culture where young men feel comfortable accessing professional mental heath services and taking part in mental health research?

The purpose of this article is to highlight the main issues relating to the engagement of young men with mental health research and treatment. We outline innovative strategies to enhance young men's recruitment to mental health research and approaches to improve their engagement with mental health services. We draw on our experience with internet-based recruitment and youth participation approaches to mental health research and discuss the successes and potential limitations of these methods for engaging young men. In the following section, we begin by providing some background information to the area by summarizing identified gender differences in mental illness, and outline the barriers to mental health service utilization and participation in research for young men.

Background

Gender differences in mental health disorders

Although overall rates of mental health disorders are very similar among males and females [3], research shows striking gender and age differences in the prevalence of specific disorders. For example, conduct disorder has been identified as the most common psychiatric problem in childhood, with three-times as many boys being affected [4]. During adolescence and early adulthood, boys are more likely to engage in high-risk behavior and are more likely to commit suicide [5]; and during adulthood men report higher rates of alcohol and other substance-use disorders and antisocial personality

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disorders, while females report higher rates of depression, anxiety and somatic complaints [6,7]. However, the validity of such findings is based on the assumption that the samples are demographically representative of the wider population being studied [8]; and there is evidence to suggest that young men are one group that continue to be under-represented in mental health research [9]. Undoubtedly, it is important for adequate numbers of young males to be included in mental health research and, consequently, for effective strategies to be identified to overcome any barriers to participation.

Disparities in mental health service use

It is well established that females are more inclined to seek professional help for mental health problems than males and that the low rates of service use by young men are a particular area of concern [1]. The most recent Australian survey of mental health and wellbeing indicated that over 80% of young men aged 16–24 years did not seek formal mental health service support despite meeting criteria for a mental health disorder in the previous 12 months [10]. Young men remain disengaged from mental health services [1], which is a significant barrier to reducing the long-term impact of mental health problems and protecting against the development of more severe forms of mental disorder [11]. They are also less available for studies that recruit through clinical referrals and service contacts [8], and they are also less likely to have input in the way that existing mental health services are provided.

The reasons for young men's poor engagement with mental health services are complex. Young men have higher mental health stigma than young women [12,13]. The broader help-seeking literature also lists Western norms and societal depictions of masculinity that emphasize self-reliance, stoicism and strength, as well as the desire to manage personal problems independently [14,15], as barriers to effective help-seeking in young men. Other barriers found to affect young men include: inadequate mental health literacy (i.e., knowledge and beliefs about mental disorders that aid in their recognition, management or prevention) [11,16]; poor emotional competence (i.e., having the language for identifying and describing emotions that aids in the recognition and management of one's current affective state); as well as negative attitudes towards mental health professionals [17,18].

Key challenges in recruiting young men to mental health research

Further research is needed to understand the mental health service needs of young men. However, with females far more likely to participate than males [19], engaging young men in this process can be a challenge. A review of 15 randomized controlled trials of internet-based mental health interventions found that participants tended to be 'female and educated', with reported gender-based sampling bias in some trials as high as 90% [20]. Commonly reported barriers to participation in mental health research not limited to young men include the stigma of mental illness, as well as fear, confidentiality concerns, illness severity, inconvenience, transportation difficulties and lack of financial reward [8]. In addition, factors such as design, participant reimbursement, staff training and media have also been found to impact on recruitment success in intervention research [21]. It is not clear whether young men are more sensitive to these factors, although males do report higher mental health stigma and to experience greater fear regarding the confidentiality of mental health services [22], so these factors are likely to be important to explaining the poor participation rates by young men in mental health research.

Using technology to enhance young men's participation rates

Internet use by young men

Recent research has highlighted that young men are prolific users of technology [17,23–24]. In a recent large national study, young men reported spending 3.1 hours on the internet per day during the average school or workday [24]. Internet use was even higher among those with moderate to high levels of psychological distress (4.6 hours on an average school/workday) [24]. Research also suggests that the internet is also the preferred tool for receiving mental health information and support for young men [24]. One study of young people aged 16–24 years [17] found that more than half of young men (55%) had sought help for their problems online. Notably, the vast majority reported that talking online 'helped' (81%), and that they were 'satisfied' or 'very satisfied' with the online help they received (83%). Interestingly, and perhaps representing a shift in online help-seeking behavior, this study also found that age predicted online help-seeking, with younger males being more likely to have used this mode of help-seeking [17]. These insights are important as they have begun to change the way researchers engage with young men in relation to recruitment to mental health research and services, as discussed in further detail below.

The advantages of using technology to engage with young men

As a mode of interacting with young people, the internet has several inherent advantages: it reaches a wide audience; it is accessible 24 hours a day at little or no cost; it has few geographic limitations; websites can be updated frequently; it is interactive [25]; and, can it link people to other relevant resources [20,26]. Furthermore,

the internet may address the strong desire for independence and autonomy in males and provide a nonconfrontational medium through which to seek help [27–29]. As a result, shifts in recruitment to include internet-based methods, such as posting on university websites, clubs and support organizations, are being used to increase participation rates of young men and other target groups to mental health research.

An even more recent shift has been the use of social media to recruit participants, particularly young people, to mental health research [30]. The most popular social networking site is Facebook, with an estimated 1.15 billion active users worldwide, of whom 60% will log on to Facebook in any given day [31]. In Australia, use of social networking sites is the number one online activity for 16–25 year olds, with 92.7% using them on a regular basis (a 61% increase from 2008 [24,32]). In the next section, we give insight into our first experience in using Facebook to recruit young people to mental health research.

Using Facebook to recruit young men to mental health research

In 2010, we conducted an online survey to explore young people's attitudes and behaviors towards mental health, online habits and technology use [23]. To begin with, the survey was advertised nationally for a 2-month period through youth-serving organizations, including youth centers and clinics, online service providers, charities, colleges, universities and relevant government organizations, via a flyer and link to the survey, which was distributed via email. However, only a handful of young people took part in the survey and very few were male. As a result, we decided to advertise the study on Facebook, in the hope of dramatically increasing recruitment numbers. The advertisement was posted on Facebook for a 1-month period and was specifically targeted to appear on the pages of Australian Facebook users between the ages of 16–24 years. The advertisement comprised of a short title ("mental health and technology"), an image, and a longer description ("tell us what you think about how technology might be used to encourage young people to engage with mental health services"). People were also given the option to 'like' or 'share' the advertisement with their Facebook friends, thus initiating snowballing recruitment through people's network of contacts. A total of 1,484 people clicked on the Facebook advertisement (the average cost per click was US$0.42) and individuals who chose to participate were taken to the online questionnaire, which was hosted on the third-party website SurveyMonkey. In total 1,038 young people (aged 16–24 years) participated in the survey (53.2% female; n = 552/1,038 [mean age = 18.84 years; SD age = 2.75]). The majority of participants provided complete data (completion rate = 71.9%) and the survey had good national coverage with respondents from all Australian States and Territories.

In summary, for this study, Facebook advertising proved to be an effective means to recruit young men for survey research. In comparison to similar research using traditional computer-assisted telephone interviewing (CATI) [24], Facebook advertising was considerably more cost-effective (a cost reduction of approximately 85%), quick (it took half the time in total for recruitment and coding) and may also have resulted in more accurate reporting of socially undesirable attributes or sensitive questions [33].

Social media and online survey techniques may also facilitate contact with people who may not possess a fixed household telephone line. This is a significant consideration given the decreasing rates of active landline telephones, particularly among young adults [34]. In Australia in 2010, 33% of all 18–24 year olds had no landline telephone in their household and for those living outside the parental home, the figure was almost 60% [35]. This trend is occurring worldwide, and is a crucial problem when employing CATI techniques of landlines only [30].

Another potential advantage of using the internet is that, in contrast to CATI-based data collection techniques, the respondent has more control over the survey situation (i.e., the locus of control sits with the respondent rather than the interviewer). For example, the respondent of an online survey chooses when, where and at what pace online questions are answered [36]. This may be particularly appealing to young male respondents who have a strong desire for independence and autonomy [37,38] and increased concerns about privacy and confidentiality.

Following our first success with using Facebook advertising, we have since repeated this methodology for related research exploring the impact of technology on young people's mental health and wellbeing. For example, we used Facebook advertising to recruit 3,000 young people aged 16–24 years (n = 944 males) to the National Young and Well Survey [24]. Although a male recruitment rate of only 31% may seem low, in the mental health arena where where gender-based sampling is as high as 90%, this result was still considered rather good. However, when we run the next National Young and Well Survey, we plan to investigate more thoroughly the use of key words and images that might increase the participation rate of young men. A key advantage of using Facebook is the ability to create multiple advertising campaigns and to closely monitor their real-time performance, which would allow us to reallocate resources between campaigns to direct

recruitment efforts toward targeted parameters, such as gender and age. This is something we will certainly be looking into in the near future.

Overall, social media can be an effective, low-cost means of recruiting harder to reach groups [39], including young men and geographically isolated participants. However, recruitment using Facebook is still in its infancy and few empirical studies have examined the representativeness of samples obtained via Facebook, particularly those that employ chain referral or snowball sampling [30]. Two major disadvantages of using social media will most likely relate to non-coverage and sample selection difficulties that will have important ramifications for the representativeness of the survey data for the general population (i.e., the sample will consist of only those people who could be reached through Facebook [resulting in non-coverage error] and those who responded to the survey advertisement [resulting in non-response error]). However, as identified by Fenner and colleagues [30], social media recruitment holds great potential to yield a demographically representative sample by using techniques such as oversampling (e.g., targeting more males than would typically be done if everyone in the sample had an equal chance of being selected) and then appropriately weighting data (i.e., correcting biases in the survey sample and taking account of population differences).

In looking at our own research, we are currently in the process of comparing data from our CATI and online surveys to examine potential variance in demographics and item responses resulting from these two modes of data collection. It is clear from our initial investigations that there are some differences in demographics and item responses, with a higher proportion of young people with psychological distress taking part in the online surveys than what we would expect in the general population. However, given that the surveys were advertised using keywords such as "mental health", this result is hardly surprising. Nevertheless, one of the areas we will be exploring in the near future is whether we can use weighted techniques so that the demographics from the online sample match the representative CATI sample. It is too complex to go into detail here, with various ways to derive weights for online surveys, each of which we are exploring, but these have been described elsewhere in the literature [40] and are not the main focus of this paper.

Despite potential problems regarding representativeness of online survey data, because of its capacity to target parameters such as age, gender and residence, social media is a highly useful recruitment tool to reach specific hard-to-reach groups, such as young men. Furthermore, this strategy is highly cost-effective in comparison with many traditional methods. However, we need to continue to think about in what circumstances and how social media can be used for data collection, and to develop approaches that will be as robust and representative as possible [41]. In the following section, we describe another useful method to increase engagement with young men.

Using youth participation to enhance young men's participation rates

The importance of youth participation in mental health intervention design & delivery

An increasing number of technology-based mental health interventions have now been trialed and have been successfully delivered via the internet [20]. With the accumulation of a critical mass of research describing online treatments and outcomes, confidence in online delivery of mental health interventions has also grown. Tailoring these interventions to cater for the needs and expectations of particular groups, such as young men, represents the next challenge for researchers. To meet this need, there has been a shift in focus to directly involve young men throughout all stages of intervention design and development [11]. Youth participation includes young people's involvement in health service delivery decision-making processes, a role they have traditionally been excluded from [42,43]. Adopting a youth participation approach is considered an effective way of ensuring that organizations remain current in their approaches to both service design and mode of delivery [44,45].

From a service provision perspective, youth participation approaches increase the likelihood that services will be appealing and relevant to their target population [46,47]. At an individual level, practical involvement in mental health service delivery may promote protective factors including social connectedness and self-efficacy [44,48–50]. Below we report on our experience in applying a youth participation approach to the development of a technology-based mental health intervention for young men.

WorkOut: a youth participation case study

From 2010 to 2011, we were involved in the development of 'WorkOut', a web-based program designed to help young men overcome the barriers towards help-seeking and to build the skills they need to understand and manage their own mental health. The program was developed in response to research indicating that web-based interventions may be an effective medium to engage young men [17]. The targeted intervention aimed to provide cognitive behavior therapy-based techniques to build confidence, resilience and self-esteem in young men. The design and evaluation of the intervention was developed in collaboration with young men using the principles of youth participation described above and by others [44]. A group of eight

to 10 young men were initially recruited to assist with the concept development and look and feel of the program. The team also consulted researchers, service delivery and social marketing experts and digital media consultants through a series of workshops and interviews that were held at key stages during the intervention design. Iterative cycles of youth consultation were conducted to ensure the design and content of the website was appropriate for young men. Following the development of the first prototype of the program, we conducted one-on-one user testing with 15 young men (aged 18–24 years) from a variety of educational backgrounds and locations across Australia, to explore potential enablers and barriers to engagement with the program. After that, a sample of six young men (aged 18–24 years) were invited to record their experiences of using WorkOut in their own homes/workplaces for 3 weeks and record their thoughts and feelings as they navigated their way through the site and completed the missions. These participants were then interviewed about their experiences of using the site, which was audiotaped, transcribed and analyzed using content analysis. User testing and interview outcomes informed the next iteration of the program concept, which was then developed and returned to another group of young men to evaluate.

Overall, the results from user testing and interviews provided preliminary evidence to suggest that WorkOut had the potential to attract young men, but that further work needed to be done to ensure that they remain engaged with the program. Firstly, attention needed to be given to the appearance and language of the website so that it would be relevant and engaging for young men. For example, young men advised that the content be delivered in an active and positive frame. Thus, active terms such as 'mental fitness', 'building confidence' and 'building resilience' were chosen instead of passive terms to avoid the negative connotations associated with mental health or mental illness. Young men also advised against creating an explicitly 'male only' service, preferring a service they themselves chose to identify with. The use of male iconography and role models were, therefore, used over more explicit service elements, such as names and taglines. Secondly, young men recommended leveraging notions of self-improvement by setting challenges and immediately reflecting back the results or benefits of taking up the challenge. This was subsequently done through the inclusion of a gaming element that allowed users to self-manage their mental health by undertaking tailored and achievable 'missions'. As a result, evidence-based mental health content was introduced to the program within the context of relevant scenarios in the form of 'missions' (i.e., tasks designed to encourage users to apply the skills they are learning to their daily life). The program has been designed so that young men can set, carry out and receive feedback on their behavior and its impact over time. These missions can be conducted at their own pace and in private. Third, young men expressed concern that the program might be too text heavy and that video-based stories and vignettes would increase interest and engagement with the missions. Again, they expressed a clear preference for 'real guys' rather than celebrities and sport stars to feature in the videos. Thus, the decision was made to incorporate videos throughout the program that would be informative, relatable and a good tool for young men who would prefer not to read instructions.

Importantly, the findings from the user testing and interviews has given us the opportunity to go back and make further adjustments to the program to increase user-engagement. However, throughout this process it was important to ensure that emphasis is placed on engagement with the program, rather than with the technology. There is little point in developing a program that, while deeply engaging for the user, does little to achieve its overall intended outcomes [51]. For online mental health programs to be successful they need to achieve such a balance, whereby an appropriate level of engagement with the technology enhances engagement with the mental health content and activities [52].

Discussion

Opportunities for innovation in survey & intervention design

A key barrier to the development of effective mental health initiatives has been the often time-consuming and costly task of collecting the necessary data to determine whether an intervention has been successful at both engaging the target audience, as well as changing the target behavior (e.g., reducing symptom severity or some other index of wellbeing). In this paper, we describe the use of social media and internet technologies as a particularly useful method of recruiting young men to mental health research and interventions. We also described the incorporation of youth participation processes to help build engaging programs that are both appealing to and endorsed by young men. However, another important consideration is the impact of marketing and design choices on survey and intervention response rates.

Young people are frequent users of technology or 'digital natives' (also referred to as the Net Generation and the Millennials [53,54]). They are adept at navigating vast amounts of online content and honing into the information that interests them (and discarding the rest). From a service-delivery perspective, this makes marketing and refinement crucial when developing

new technology-based interventions. Simple oversights can significantly impact uptake and 'click-throughs' (progressing from an initial advertisement to the registration phase of the intervention) and while many may visit an intervention website or download an app, it is possible that simple design oversights can hamper page views and intervention completion rates. Thus, when designing technology-based mental health interventions for specific populations, the importance of effective design choices should not be underestimated. This was a limitation observed during the development of the WorkOut intervention. The decision to include a number of surveys before program commencement so that we could understand more about the program users impeded many participants from progressing through to the active intervention. Thus, subsequent iterations of WorkOut have adjusted the format of baseline data collection components.

Another important consideration for recruiting young men to technology-based interventions is the capacity to reduce participant burden using 'passive' data acquisition. For instance, the explosion of fitness devices or even the rudimentary features of smartphones offer researchers the ability to acquire activity, sleep and location data from participants, as well as the capacity to send 'push' or SMS-based reminders or messages. These advances provide the means to record important biometric information and to provide feedback on performance and progress without burdening the individual with manual data entry. Also, and perhaps most importantly, these technological developments hold the capacity for the delivery of intuitive interventions that use passively collected data to personalize and tailor interventions, potentially improving the quality of care as well as the quantity of people able to access care. For young men, this may help overcome issues of engagement by quickly establishing the relevance of the intervention to them.

Beyond recruitment and intervention delivery, technology also offers the ability to display and disseminate information. Facebook pages, animations and blog posts offer the capacity to educate, inform and involve people from the privacy of their own home; to offer access to virtual communities; to create partnerships to reach goals, to challenge and surprise. This is incredibly significant for mental health services, as geographical and financial considerations have traditionally impeded access to appropriate care. However, all of these advances come with one sizeable caveat: our 'digital natives' have a delicate palette and are selective about what they consume. This is a substantial risk for researchers designing technology-based interventions. Building quality interventions is expensive and has required researchers to arm themselves with skills more closely aligned to marketing and design. However, the changing landscape of service delivery to a technology-based platform has promoted the establishment of strategic partnerships between designer and researchers to deliver mental health interventions and to deliver these to virtual meeting places, such as Facebook, where young people, including those at risk, are known to congregate.

Future perspective

The explosion of social networking services means that young men are online and are likely to be part of a network of interconnected peers. Previous small-scale intervention recruitment strategies have relied on a one-to-one approach with the researcher at some point having direct contact with the participant. Leveraging the connectedness of online communities provides researchers access to 'networks' of participants and the ability to broadly as well as selectively recruit.

Executive Summary

Background

- Females are far more inclined to seek professional help for mental health problems than males.
- Participants in mental health research tend to be 'female and educated', with reported gender-based sampling in some studies as high as 90%.
- There is evidence to suggest that mental health stigma and fear regarding confidentiality might be two key barriers to young men's participation in mental health research and treatment.

Using technology to enhance young men's participation rates

- Technology offers promising new ways to engage young men in mental health research and treatment.
- Targeted recruitment using Facebook is a cost-effective strategy to recruit hard to reach populations, such young males, who have increased concerns about privacy and confidentiality.

Using youth participation to enhance young men's participation rates

- Youth participation approaches should be used to help build engaging programs that are both appealing to and endorsed by young men

Conclusion

- The next challenge will be to keep up with technological advances, as well as ensuring that the methods we use to enhance participation rates are as robust as possible.

We have described examples of technology-based recruitment strategies and interventions to attract young men to mental health research and services. As we move forward, the challenge would appear to be twofold. The first challenge will be keeping up to date with technological advances that are relevant to mental health research and care. The rate of change in research cannot match the rate of development within the technology sector; therefore, researchers must choose wisely where they allocate their funding dollars. Secondly, so that we can better understand how best to leverage technological innovation, in parallel with design and implementation of interventions must come critique of the limitations of technology-based surveys and interventions (eg., problems with sampling frames, non-randomness and non-response) and to develop approaches to ensure that the methods used are robust and that the samples are as representative as possible.

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