Moderated Online Social Therapy In Youth Mental Health: Seizing The Opportunity

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ABSTRACT
This paper describes an innovative research and clinical framework for the development and evaluation of online social-media interventions specifically designed to address key challenges in youth mental health (i.e., improving social functioning and long-term recovery). It describes the new treatment opportunities brought about by the social media revolution and in particular the MOST (Moderated Online Social Therapy) model integrating on-line peer support and evidence-based interventions with a unique clinician and consumer-centered service delivery process. The paper is also novel in examining evaluation methods for the use of social media platforms in this new context.

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YOUTH MENTAL HEALTH: THE CRITICAL PERIOD FOR MENTAL HEALTH INTERVENTIONS
Relative to the respective burden of disease, access and engagement rates with mental health services fall disappointingly below those for physical ill health [1]. This is particularly true for young people 12-25 years – a period of peak risk for the onset of severe mental disorders such as depression, psychosis and bipolar disorders [2]. For those in the 12-25 age range, suicide is the second leading cause of death globally [3] and depression is the single greatest cause of disability [1] and is projected to be the leading cause of disability globally by 2030 [2].

LONG-TERM RECOVERY IN YOUTH MENTAL HEALTH: THE GRAND CHALLENGE
Despite largely positive initial treatment responses to current psychological and pharmacological interventions for young people with severe mental health disorders, relapse rates of depression and psychosis remain stubbornly high, with 80% experiencing repeated episodes. This severely disrupts critical aspects of development and functioning, from education and employment to social relationships [3]. The result is that over half of young people with severe mental health disorders fail to achieve social and functional recovery. Social and functional deficits (such as isolation and unemployment) are both the costliest aspect of mental illness and a higher treatment priority for young people, than symptomatic improvement.

Online technologies have the potential to enable accessible, relevant, engaging and effective long-term support for young people suffering from severe mental health disorders. However, despite e-mental health interventions demonstrating efficacy across a range of populations [4] maintenance of longer-term engagement remains a key challenge [5-7]. To date interventions have focused on symptomatic management via either fully automated interventions or those incorporating clinician support.

Only a handful of e-mental health interventions have integrated online social media technologies or specifically targeted functional and social recovery in young people. To the best of our knowledge, no e-mental health intervention has attempted to improve functional and social recovery in youth mental health over the longer term.

GENERATION NEXT: PROMOTING LONG-TERM RECOVERY IN YOUTH MENTAL HEALTH VIA ONLINE SOCIALLY-DRIVEN INTERVENTIONS
Our team has pioneered a suite of social media-based interventions focused on promoting engagement and long-term social recovery in young people suffering from severe mental health disorders. We propose that, if the field is to maximise the potential of social media to promote long-term recovery of mental health, online peer-to-peer support needs to be informed by, and evaluated through, well-designed controlled studies, involving the adoption of participatory design principles and applying testable, theory-driven models of user engagement and participation. Importantly, interventions need to incorporate cutting edge

thinking from psychological models focused on building resilience and social connectedness. We provide a description of a new model of social media-based interventions in youth mental health incorporating these principles.

ONLINE SOCIAL MEDIA: NEW OPPORTUNITIES

The social media revolution has made information and communication accessible to all. An emerging evidence base indicates that people with serious mental illness take advantage of the opportunities provided by social media [8, 9]. For example, people suffering from psychosis use online social networking to create new relationships, maintain existing social connections, reconnect with old friends and obtain peer support [10]. Preliminary research indicates that use of social media is ubiquitous amongst young people suffering from mental disorders, with virtually all young people diagnosed with psychosis or depression using social media daily −an average of 2 and 3.5 hours per day, respectively [11]. It is clear, therefore, that novel technologies offer an unprecedented opportunity to extend the well-documented benefits of e-mental health interventions in mental health treatment [12].

THE SCIENCE OF DEVELOPING AND EVALUATING ONLINE SOCIAL MEDIA INTERVENTIONS

The design and development process of new social media-based interventions is critical in ensuring quality interventions that are safe, engaging and effective. The development process needs to follow participatory design methods, with end-users actively involved in the inception, design, and delivery of the social media platform [13]. We need to advance a science of development of online social media interventions in mental health involving theory-driven, testable models of user engagement, user experience and intervention effects as well as novel combinations of cross-disciplinary experts. For example, a significant challenge is to create an online environment that enables meaningful relationships, creating a sense of belonging and a positive therapeutic environment. Furthermore, improving social functioning requires online users to transfer the newly acquired skills, knowledge, and confidence into behavioural change in the real world. Creating such a platform is likely to require the collaborative input of clinical psychologists, creative writers and artists (to develop engaging materials that will be attractive to young people), software developers, experts in human computer interaction, game developers, and end-users.

The rapid development of online technologies has outpaced the timeline of conventional randomised controlled trials of social media-based interventions (which can take many years) resulting in interventions that are obsolete by the time trial results become available. Novel research frameworks balance the need for ongoing technological improvements while maintaining the internal validity of the interventions being tested [14]. In this way, the core elements and theoretical principles of an online social-media based intervention can be operationalized while allowing for ongoing quality improvements on the functionality, thereby maintaining technological currency [14].

ONLINE PEER SUPPORT, RESEARCH INNOVATION AND SERVICE DELIVERY: THE MODERATED ONLINE SOCIAL THERAPY (MOST) APPROACH

With the aim of improving youth specific e-mental health intervention engagement and long-term effectiveness, we describe the moderated online social therapy (MOST) model, guided by participatory design principles based on continual user feedback [15]. For example, our initial focus groups with young people with psychosis and depression revealed that they favored a social media-based platform enabling meaningful peer-to-peer contact as well as clinicians' support [12]. This is in keeping with recent findings that over 70% of young people with psychosis or depression would like to be contacted by professionals via social media when experiencing symptoms [11]. In addition, online peer-to-peer systems should resemble commercial social networking packages (i.e., asynchronous/ongoing communication), but be separate from them, and expert moderators should guide, but not censor the interaction to ensure a safe and supportive network [12]. This is consistent with findings that a lack of moderation may adversely affect the online group's ability to attain a sense of community [16]. Finally, young people indicated that systems should provide self-guided, tailored interventions, relevant to their moment-by-moment needs [12].

Informed by young people's feedback as well as research in the mental health and human computer interaction fields, our MOST model merges: i) online social media, ii) interactive therapy modules, iii) a positive psychology, strengths-based framework, and iv) peer and professional moderation, creating a constant flow for the user between the social and therapy elements. The online social networking component of MOST has been designed to counteract social isolation and disadvantage – a risk factor for developing psychosis and depression and poor symptomatic and functional outcomes [17-18], enhance engagement with online interventions – a key challenge in the field [19], and improve uptake and acquisition of therapeutic strategies. Professional moderation follows a theory-driven model drawing on new frameworks operationalising online human support (i.e., the supportive accountability model [20]), motivation theories (i.e., self-determination theory [21]) and new models of positive psychotherapy (i.e., strengths-based models [22]) as a means of enhancing user engagement and self-efficacy. The use of peer moderation is a key component of MOST, serving to normalise experiences, counteract stigma and promote engagement.

Our strengths-based approach seeks to help users identify, discuss and exercise key personal strengths both within the online environment, and in real-life, in order to address both symptom-related factors (i.e., relapse risk), and

psychological wellbeing. Furthermore, applying positive psychology principles to the online moderation framework may bolster user engagement. For example, key benefits of adopting a strengths-based model is the focus on positive traits and flourishing, enabling use of the intervention regardless of symptom status, and reducing the risk of over-exposure to, and contagion of, deficit-related content including focus on symptoms and negative affect [23]. In practice, the MOST model adopts an action-based approach. User character strengths [25] are identified at the beginning of the intervention through an interactive online game. Once selected, key strengths are saved within the online platform, where clinical moderators can refer back to them, reinforcing and encouraging users to put their key strengths into action. Users are also prompted to practice newly acquired skills through purpose-developed behavioural experiments, designed to bridge the gap between online therapy and the real-world. Behavioural experiments focus on the use of personal strengths to cope with ongoing symptoms or stress, and aim to enhance wellbeing or improve social connectedness.

In MOST, the sum is greater than the parts. The result is a completely new therapeutic milieu in which participants can safely self-disclose, take positive interpersonal risks, broaden and rehearse coping skills, obtain encouragement and validation, and learn how to solve problems and discover their personal strengths [24].

FUTURE RESEARCH AGENDA

To date, the MOST model has been effectively implemented in six studies, including four pilot studies with (i) young people recovering from psychosis [24], (ii) young people at ultra high risk of developing psychosis, (iii) young people recovering from depression [26], and (iii) carers looking after young people experiencing mental ill health [27]. In addition, there are two currently active longer-term randomised controlled trials evaluating MOST (iv) as a relapse prevention intervention for first episode psychosis, and (v) to support carers of young people with psychosis.

There are extraordinary opportunities to incorporate further technological innovations within the MOST model, and development is underway for the integration of native smartphone applications and emerging technology including wearable devices. The eruption of online peer-to-peer support together with novel data analytic approaches afford fascinating opportunities to address key questions in relation to the effects and mechanisms of these networks. New data will be generated and novel data analytic approaches such as social networking analysis (SNA) [28] and data mining and aggregation can be used to determine how online social interactions and relationships develop and influence both mental health and social outcomes. Linguistic analytics [29] and sentiment analysis can be employed to determine how the emotional valence of online communication affects engagement, online interactions and

mental health outcomes. Coupled with machine learning methodologies, these new types of data may be used to make individualised predictions of risk for disengagement, imminent risk for relapse, self-harm or suicide attempt, or even onset of psychosis in high-risk individuals [30]. Novel social gamification approaches provide a promising avenue to facilitate participants interaction with one another and enable meaningful relationships, including fun quizzes to get to know other users, team up apps to jointly face challenges, or therapeutic puzzles. Other important questions to address are: What are the parameters (e.g., size, operations, etc.) of online social networks that ensure safety and effectiveness? Can online peer-to-peer support result in improved real world social functioning? How do the characteristics of online social networks mediate their effects on mental health and social outcomes? What is the level of participation in a therapeutic social network that is required to gain benefits? What are the appropriate targets for social media based interventions? How do clinicians or 'peer supporters' best intervene at the level of social networks as well as with individuals? How can we scale and disseminate effective social media-based interventions? We are still a long way from knowing the answers to these questions.

Who can say how far new mobile and online technologies will take us in solving old problems and the kinds of new problems it will pose, but we agree that the time is ripe to embrace the challenge.

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