

# Mobile Tracking for Mental Health and Wellbeing

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## INTRODUCTION

In western countries, up to 30% of young people experience mild, moderate or more severe depressive symptoms by 18 years of age (Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993; Rushton, Forcier, & Schectman, 2002). Mild symptoms can progress to moderate and then severe symptoms (Rushton et al., 2002), resulting in diagnosable mental health disorders. Therefore, there is a substantial need for prevention programs that are simple and low-cost. These programs are fundamental to reducing the economic and personal burden of depression (Andrews, Sanderson, Corry, & Lapsley, 2000). Using a stepped care model may reduce the disease burden of mental illness, beginning with simple and inexpensive prevention programs (that occur before the onset of diagnosed disorders) and 'stepping up' to higher intensity programs as needed (Geisner, 2006; Jorm & Griffiths, 2006; van Straten, Seekles, Beekman, & Cuijpers, 2010). The stepped-care model has the advantage of providing low intensity early intervention programs with reduced length and cost of the treatment to young people experiencing mild mental health symptoms (Kuehner, Huffziger, & Liebsch, 2009; Lynch et al., 2005; Spence et al., 2005). van Straten et al. (2010) advocate the use of 'watchful waiting' with young people experiencing mild mental health problems as a first step in the stepped care model. Current universal prevention programs that focus on

intensive computerised or school-based cognitive behavioural therapy-based programs, such as the beyondblue Schools Research Initiative (Spence, Sheffield, & Donovan, 2003) are costly, time-consuming, have high attrition rates and therefore may be better suited to second-step early intervention targeting young people with elevated symptomatology. Third-step interventions should involve individualised face-to-face therapy with young people experiencing diagnosed disorders. Fourth-step interventions could then involve the use of anti-depressant medication combined with face-to-face therapy for use with severe chronic episodes of depression, anxiety or severe mental illness in combination with CBT and regular monitoring for suicidal ideation and behaviour (van Straten et al., 2010).

As a first step intervention, the 'watchful waiting' approach has two limitations. First, as general practitioners (GPs) are often the first point of contact for people with mild mental health symptoms (Council of Australian Governments, 2006), the onus of watchful waiting would be placed upon GPs. Nonetheless, GPs are under pressure to treat many people within a day and to keep appointment times brief. In Australia, for example, the current average appointment time for GPs is approximately 15 minutes per patient (Britt, Valenti, & Miller, 2002). Second, GPs are more likely to identify mental health problems in young people who are aware of emotion distress (Haller, Sanci, Sawyer, & Patton, 2009); therefore,

watchful waiting may not be useful with young people who are unaware of emotional distress until more severe symptoms are developed.

Mobile phones are well suited to early intervention programs, providing an alternative to watchful waiting. Mobile tracking should be considered as a first-step low-cost high penetration early intervention for young people who are at-risk of mental health problems and exhibiting mild mental health problems. Self-monitoring using tracking applications (apps) has the advantage of helping young people increase their emotional self-awareness while gaining more information about their mental health symptoms, which can direct them to step up to more intensive interventions as needed. Other advantages to mobile tracking include accessibility, affordability, functionality of smartphones, and low cost. The major barriers faced are low uptake, and difficulties implementing mobile tracking in public and primary health care.

In this review, we examine the history, evidence and theory for self-monitoring in general, concentrating on the evidence for the therapeutic benefits of mobile tracking. Research investigating the impact of self-monitoring on mental health and wellbeing will also be discussed.

## OVERVIEW

Self-monitoring has a long history of over 40 years with three main contributions: expressive writing, momentary sampling and therapeutic homework. Lipinski and colleagues (1975) and Nelson (1977) were some of the earliest researchers to explore the therapeutic effects of self-monitoring on emotion using paper and pen. The mechanism by which self-monitoring leads to therapeutic outcomes is proposed to work by increasing emotional self-awareness (ESA; Kauer et al., 2012). ESA is a core therapeutic process utilised in most available therapies, although referred to using several names. Increasing ESA is the first stage

of most psychotherapies and assists an individual to review, observe and gather information about an emotionally distressing event in a positive proactive manner (Prochaska & DiClemente, 1982). Behavioural techniques are often used to increase ESA, such as homework diaries between sessions and regular monitoring of thoughts and feelings (Kazantzis, 2000). Assisting people to think about their thoughts and feelings in a concrete way by answering questions in a diary when processing emotions in a reflective manner can assist individuals to engage in ESA processes with adaptive consequences. By increasing ESA, a person can become more consciously aware of their emotions and can think about how to cope rationally and productively (Prochaska & DiClemente, 1982).

Self-monitoring alone is not likely to provide the support and guidance needed to assist individuals experiencing clinically diagnosed mental health problems, therefore these techniques are typically used in psychotherapy as an adjunct to other therapeutic strategies such as cognitive-behavioural therapy (CBT). Using behavioural self-monitoring as part of the therapeutic process has been shown to increase the benefits of therapy more than therapy alone (Kazantzis, 2000). Kazantzis (2000) suggested that the mechanism by which self-monitoring effects mental health is by increasing ESA. Although rarely used alone for the treatment of clinically diagnosed depression, self-monitoring may provide a simple, low-cost alternative in subclinical populations such as young people suffering from subclinical mental health problems. By self-monitoring, young people may become aware of their emotions earlier than they normally would on their own, thereby increasing their ability to learn productive coping strategies and emotional regulation before the development of clinically diagnosed mental health problems.

With the advent of Web 2.0 and increasing computer capabilities, particularly in terms of miniaturization and portability, self-monitoring can be conducted using apps or SMS on mobile

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