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A randomised controlled trial of a self-guided internet intervention promoting well-being

Joanna Mitchell [a,*], Rosanna Stanimirovic [b], Britt Klein [c], Dianne Vella-Brodrick [a]

[a] School of Psychology, Psychiatry and Psychological Medicine, Monash University, P.O. Box 197, Caulfield East, Vic. 3145, Australia
[b] Department of Performance Psychology, Australian Institute of Sport, Bruce, ACT, Australia
[c] National eTherapy Centre for Anxiety Disorders, Faculty of Life and Social Sciences, Swinburne University, Hawthorn, Vic., Australia

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ABSTRACT

Positive psychology is paving the way for interventions that enduringly enhance well-being and the internet offers the potential to disseminate these interventions to a broad audience in an accessible and sustainable manner. There is now sufficient evidence demonstrating the efficacy of internet interventions for mental illness treatment and prevention, but little is known about enhancing well-being. The current study examined the efficacy of a positive psychology internet-based intervention by adopting a randomised controlled trial design to compare a strengths intervention, a problem solving intervention and a placebo control. Participants (n = 160) completed measures of well-being (PWI-A, SWLS, PANAS, OTH) and mental illness (DASS-21) at pre-assessment, post-assessment and 3-month follow-up. Well-being increased for the strengths group at post- and follow-up assessment on the PWI-A, but not the SWLS or PANAS. Significant changes were detected on the OTH subscales of engagement and pleasure. No changes in mental illness were detected by group or time. Attrition from the study was 83% at 3-month follow-up, with significant group differences in adherence to the intervention: strengths (34%), problem solving (15.5%) and placebo control (42.6%). Although the results are mixed, it appears possible to enhance the cognitive component of well-being via a self-guided internet intervention.

1. Introduction

Enhancing well-being at a population level is explored in this introduction in the context of two relatively young disciplines, namely positive psychology and internet interventions. An overview of theory and research in positive psychology and then internet interventions is presented as a rationale for the current study.

1.1. Positive psychology, mental health and well-being

The positive psychology movement has helped create the research momentum necessary to broaden mental health knowledge and understanding beyond a focus on illness and its direct alleviation. Positive psychology is the scientific study of well-being and optimal functioning, focusing on positive emotions, character traits and enabling institutions (Seligman & Csikszentmihalyi, 2000). The proponents of this movement aim to bring together and develop previously disparate lines of theory and research to provide a complete picture of mental health (Duckworth, Steen, & Seligman, 2005; Seligman, Steen, Park, & Peterson, 2005). The notion of a complete picture of health is reflected in the World Health Organisations definition of mental health as:

> ...a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her own community. (WHO, 2001a, p. 1).

This definition encapsulates the idea that mental health is the presence of well-being and not just the absence of mental illness. To test a model of complete mental health and psychosocial functioning Keyes (2005) surveyed a nationally representative sample of 3032 American adults. The results supported the theory that mental health and mental illness are independent but correlated axes; and not merely opposite ends of a continuum. Moreover, Keyes found that participants with no mental illness but low well-being (Keyes labels this *languishing*) had equivalently poor psychosocial outcomes as the participants with a mental illness. Consequently, promoting well-being and optimal psychosocial functioning is important in its own right, and not just an adjunct to mental illness treatment and prevention.

Well-being, also referred to by some researchers as happiness (these terms will be used interchangeably), is a complex construct concerned with optimal experience and functioning (Ryan & Deci, 2001). There are two major conceptual approaches to defining and

* Corresponding author. Tel.: +61 3 9214 5867; fax: +61 3 9214 5260.
E-mail address: psychjm@gmail.com (J. Mitchell).

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measuring well-being: *eudaimonic* and *hedonic*. Aristotle (384–322 BC) first articulated the eudaimonic approach as being true to one's inner self. In contemporary psychology this approach is best reflected by the concept of psychological well-being (PWB), which is broadly defined as the degree to which a person is fully functioning and focuses on meaning and personal growth (Ryan & Deci, 2001; Ryff, 1989). In contrast, the hedonic approach focuses on pleasure attainment and pain avoidance (Ryan & Deci, 2001) and in contemporary psychology subjective well-being (SWB) best encapsulates this approach. SWB is defined as how an individual evaluates his/her own life (Diener, 1984) and incorporates both affective (e.g., positive and negative moods or emotions) and cognitive (e.g., satisfaction judgements) components. There has been debate over the utility of the eudaimonic/hedonic divide and more recently it has been proposed that these models are not mutually exclusive and can independently and in combination provide valuable insight about well-being measurement and underlying mechanisms (Kashdan, Biswar-Diener, & King, 2008; Keyes, Shmotkin, & Ryff, 2002; Ryan & Deci, 2001). Subsequently, some well-being theorists have combined both SWB and PWB into unifying models of well-being, for example, the complete state model of mental health (Keyes, 2005; Keyes, 2007) and the orientations to happiness (Peterson, Park, & Seligman, 2005).

While there is ample literature to suggest the pursuit of happiness is a worthwhile one (for a review see Lyubomirsky, King, & Diener, 2005), there is less literature focussed on whether it can be sustained or enhanced at a population level. One model of enduring, or chronic, happiness proposes three key factors that influence well-being: (1) a person's genetically determined set point, or set range, for happiness; (2) circumstantial factors (e.g., income, location, education level and marital status) and; (3) intentional cognitive, motivational, and behavioural activities that can influence well-being (Lyubomirsky, Sheldon, & Schkade, 2005). It is proposed that this last factor, with its focus on individual psychological processes, is most amenable to change. For example, data from longitudinal studies have demonstrated that well-being can be enhanced via interventions that promote intentional activity, such as practising gratitude, committing acts of kindness, visualizing best possible future selves, and processing positive life experiences (Lyubomirsky, 2006; Lyubomirsky, Sheldon et al., 2005). The current study set out to determine whether well-being could be enhanced by intentional activity and to extend previous research by examining whether this type of intervention can be delivered using the internet.

1.2. The internet and mental health promotion

A key objective of mental health promotion is to deliver interventions that have demonstrated efficacy and are accessible and sustainable. Traditional forms of delivery such as mass media campaigns, or individual or group interventions that are offered through schools or the work place, may demonstrate efficacy but are not always accessible (e.g., to rural communities or small businesses) or sustainable (e.g., are costly to deliver). Mass media campaigns tend to address only the most general determinants of a particular health issue or behaviour (e.g., an Australian campaign run by VicHealth called 'Together We Do Better', which seeks to increase community awareness of the benefits of strong, connected and supportive communities), yet we are told that behaviour change is more likely if interventions are targeted at the individual (de Vries & Brug, 1999). The internet has the potential to address these issues of efficacy, accessibility, sustainability and delivery at an individual level, therefore providing an adjunctive health promotion delivery framework (de Vries & Brug, 1999; Evers, 2006; Mihalopoulos et al., 2005).

Over the past 20 years the internet has become an integral part of the lives of most Australians. A national survey indicated that 84% of Australians, and 60% of Australian households (9.1 million people), have access to the internet (ABS, 2006; DCITA, 2005). These household access rates are similar to those reported for the United Kingdom (60.2%) and United States (62%) (ABS, 2006; Cheeseman Day, Janus, & Davis, 2005). People use the internet for a variety of purposes and there is a growing interest in wellness information unrelated to symptoms of illness, a medical diagnosis or other health crisis (Evers, 2006; Fox, 2006). The internet has been acknowledged by consumers, researchers, policy makers and clinicians as a valuable means of health promotion (Christensen, Griffiths, & Evans, 2002; Evers, 2006; Korp, 2006).

Obtaining health information via the web has taken a variety of forms including static health educational sites, peer support groups, online health consultations and delivery of internet interventions. Ritterband et al. (2003) defined internet interventions for mental health as interventions that promote knowledge and behaviour change via web-based programs that are typically theory driven, self-paced, interactive, tailored to the user and utilise the multimedia opportunities provided by the internet. These intervention websites are generally based on effective face-to-face interventions that have been operationalised and transformed for internet delivery, for example, Panic Online – a treatment program for panic disorder (Klein & Richards, 2001; Klein, Richards, & Austin, 2006).

The number of internet interventions available for mental health treatment and prevention is growing rapidly, as are interventions that promote health behaviour change (see Table 1). These interventions have demonstrated efficacy (e.g., reduction in symptoms or number of people meeting clinical criteria for diagnosis of a disorder, for a range of mental health disorders) and the majority are based on cognitive-behavioural approaches (Christensen, Griffiths, Korten, Brittliffe, & Groves, 2004; Klein et al., 2006, in pressb).

In contrast to the growing internet-based treatment and prevention literature, only one published randomised controlled trial was identified that focussed on well-being enhancement via the internet (Seligman et al., 2005). Seligman et al. (2005) used the internet for participant recruitment, data collection and intervention delivery. Five hundred and fifty-seven participants completed the pre-assessment questionnaires with 166 participants (29%) dropping out before the final 6-month assessment. Participants were randomly assigned to one of six groups including five active interventions and one placebo control. The five proposed happiness interventions included: (1) a gratitude visit; (2) identifying three good things in life; (3) identifying a time when you are at your best; (4) identifying signature strengths; and (5) identifying and using signature strengths in a new way. The placebo control involved writing about earliest memories. Participants completed a demographic survey and two questionnaires measuring depression (Centre for Epidemiological Studies – Depression Scale) and happiness (Steen Happiness Index) that were repeated on six occasions (pre-, post-assessment, 1-week, 1-, 3-, and 6-month follow-up); with reminder emails to complete the questionnaires sent at each time point. The 1-week intervention involved participants receiving instructions for their assigned activity via an email. Participants were encouraged to contact the researchers if they had any questions about the activity. Adherence to the activity was measured by a question requiring a 'yes' or 'no' response.

Using signature strengths in a new way and *three good things* produced significant change in the expected direction on the happiness and depression outcome measures, with benefits apparent at 6 months. The *gratitude* intervention was also effective in improving happiness and depression ratings, however this change lasted only 1 month. In addition, participants who reported continued adherence to the happiness intervention beyond the required 1 week, scored higher on happiness scores at all times points and