Workplace mental health promotion online to enhance well-being of nurses and allied health professionals: A cluster-randomized controlled trial

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ABSTRACT

Objective: Well-being is an important prerequisite for the mental health and work functioning of nurses and allied health professionals. The objective of this study was to examine the effectiveness of a workers' health surveillance (WHS) module that offers screening, tailored feedback and online interventions targeting positive mental health and mental health complaints. WHS is a strategy at the workplace to implement preventive action by identifying and treating health complaints.

Methods: All wards of one hospital were randomized, and all nurses and allied health professionals working in these wards (N = 1140) were invited to participate in either the Online Intervention group (OI) or the Waitlisted control group (WL). Primary outcome was positive mental health (Mental Health Continuum — Short Form, MHC-SF); secondary outcomes were work engagement (Utrecht Work Engagement Scale, UWES), a specific well-being measure (WHO-5 Well-being Index) and mental health symptoms (Brief Symptom Inventory, BSI). Online self-report measurements were conducted at baseline, and after three and six months.

Results: Participation rate for the intervention at baseline was 32% ($N_{OI} = 178$; $N_{WL} = 188$). The intervention significantly enhanced positive mental health, in comparison to the control group (F = 3.46, p = 0.03). Cohen's d was 0.37 at post-test and 0.28 at follow-up, which can be considered as a moderate effect and a small effect respectively. In particular, psychological well-being (a subscale on the MHC-SF) was enhanced (Cohen's d 0.43 at post-test and 0.50 at follow-up). No significant or relevant differences between groups on secondary outcomes were found. The uptake and compliance of the online interventions was very low (28/178, 16% logged in; 9/178, 5% started with one or more modules within an intervention).

Conclusion: We can conclude that the intervention was capable of enhancing positive mental health. However, due to a high attrition rate, especially in the intervention group, this result should be considered with caution. Improvement of the screening instrument, more use of persuasive technology within the interventions and individual guidance to support engagement and compliance may be recommended.

1. Introduction

1.1. Nursing, mental health and well-being

Many nurses suffer from mental health problems. A cross-sectional study reports a twice as high prevalence rate of depression in nurses as compared to the prevalence rate in the normal adult population (Letvak et al., 2012). This state of affairs not only concerns themselves, but could also seriously affect their work productivity (Anderson et al., 2011) and functioning (Letvak et al., 2012). Impaired mental health in nurses is associated with medication errors, near misses, patient safety and patient satisfaction (Gärtner et al., 2010). Therefore, early detection of mental health complaints or reduced work functioning is essential for the quality of nursing care (Gärtner et al., 2012).

1.1.1. A focus on well-being

A focus on symptoms and impaired work functioning may not be sufficient to enhance the mental health of nurses. The mental health care system has traditionally focused more on the treatment of mental disorders

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and symptoms than on the promotion of well-being (Seligman and Csikszentmihalyi, 2000). However, it is widely recognized that mental health is more than just the absence of mental illness, as is stated in the World Health Organization's definition of mental health (WHO, 2004, page 12):

> Mental health is 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 is able to make a contribution to his or her community.

According to this definition, well-being and well-functioning are core elements of mental health. Recently, these elements are captured into a dynamic concept of health in which empowering people to take charge of their own health, in the face of adversity, plays a central role: *Health is the ability to adapt and self-manage in the face of social, physical and emotional challenges* (Huber et al., 2011). This might be a highly applicable concept for nurses and allied health professionals, such as physiotherapists and radiotherapists, as working in this area can have a serious impact on mental well-being and resilience. This impact is due to high workload, time pressure and coping with human suffering and pain (McCann et al., 2013). The self-management capacity of a nurse to cope with the challenges at work and restore one's sense of well-being might determine to a certain extent their mental health.

The benefits of well-being on people's functioning are recorded both in cross-sectional and longitudinal research. They include improved productivity at work, better physical health and as a consequence less health care uptake, and having more meaningful relationships (Howell et al., 2007; Keyes and Grzywacz, 2005). In addition, the available evidence suggests that well-being reduces the risk of developing mental health complaints and disorders at a later point in time (Wood and Joseph, 2010). In this sense, well-being acts as a protective factor for mental health and healthy functioning. Three different types of well-being have been identified in various studies. Subjective well-being refers to positive affect and/or life satisfaction (Diener, 1984). Psychological well-being refers to the level of positive functioning containing constructs such as meaning in life, goal setting, and mastery (Ryff, 1989). Social well-being contains constructs such as the level of social integration and social contribution, together forming the construct of 'positive mental health' (Keyes, 2002).

1.1.2. Well-being in the nursing profession

In the context of work, a considerable amount of research has been conducted on the well-being related construct of *work engagement*, a positive, fulfilling, work related state of mind that is characterized by vigour, dedication and absorption (Bakker, 2011). For nurses and allied health professionals, promoting well-being strengthens work commitment and performance (Kanste, 2011; Sun et al., 2012). Nursing could be regarded as highly demanding work, both emotionally and physically, and therefore training programs to enhance work engagement and to strengthen personal resources seem warranted (Chou et al., 2012). Likewise for society, keeping our health care workforce mentally fit is of crucial importance. The need for health care workers is growing, as the population is ageing at a rapid pace. In the meantime the health care workforce is ageing at a similar rate. In the Netherlands, only 27% of the nurses predict they will be able to work until they reach retirement age, because of high work pressure and low work engagement (Maurits et al., 2012). This raises serious questions about the sustainability of health care in the long run (Lokkerbol and Smit, 2013). All in all, it seems important to promote mental health at the workplace (Czabala et al., 2011) and to foster well-being and work engagement among nurses and other health professionals in particular (Jenaro et al., 2011).

1.1.3. Workers' health surveillance

One strategy for prevention in the workplace involves workers' health surveillance (WHS), a system to detect work-related detrimental health effects at an early stage, in order to enable timely interventions

(Koh and Aw, 2003). In occupational healthcare, WHS is an important feature. In the Netherlands, it is a mandatory action for employers to allow their employees to do such a check-up that is aimed at preventing or reducing the risks that the work poses for the employee health. In the Netherlands, it has three aims: 1) to prevent the onset, recurrence, or worsening of work-related diseases, 2) to monitor and promote work-related health and work functioning, and 3) to monitor and improve sustained employability (NVAB, 2013). Although both the International Labour Organization and the Dutch guideline for occupational physicians prescribes supplementing WHS as an important part of surveillance (ILO, 1998; NVAB, 2013), not all workplaces have implemented this system and those who do usually don't follow the screening up with adequate interventions.

Enhancing WHS with automated individual feedback and an offer of online interventions targeting the well-being and mental health of nurses and allied health professionals is a new way to conform to this regulation and has not been reported before, as far as we know. Providing feedback and online interventions may offer a suitable and effective strategy for reaching a large target group in the workplace. In particular, online *self-help* interventions are potentially more affordable and accessible for many people, as opposed to face-to-face interventions which use up resources such as therapists' time (Muñoz, 2010). People can use self-help interventions at their convenience, at their own pace and in the privacy of their own homes.

1.2. The current study

The primary objective of the current study is to examine the effectiveness of a workers' health surveillance module combined with personalized feedback and an offer of online interventions (OI) on the well-being, work engagement and mental health of nurses and allied health professionals, compared to a waitlisted control group (WL). The study targets the effectiveness of the whole WHS module, including the screening, feedback and offer of online interventions. In theory, this WHS module could enable a large part of a working population to be reached with online interventions, thereby contributing to public mental health. The current study is part of a larger trial which includes a third study arm (invitation for a consultation with an occupational physician for the positively screened workers: OP group) (Gärtner et al., 2011). These results are published elsewhere (Gärtner et al., 2013). Former published results can be summarized as follows: regarding work functioning, the OI group was not more effective compared to the WL (Ketelaar et al., 2013a), although non-inferior to the OP group (Ketelaar et al., 2013c). Also, no significant effects were found on work-related stress and work-related fatigue for the OI group in comparison to the WL (Ketelaar et al., 2013a) and the OI group was not effective from a health economic perspective (Noben et al., 2014). Workers in the OP group showed less work functioning impairments in comparison to the WL (Gärtner et al., 2013) and produced this response against lesser costs (Noben et al., 2014).

We hypothesized that the OI group would demonstrate a significant increase in well-being and work engagement, as well as significant symptom reduction at three month and six month follow-up, compared to the WL. The online interventions offered in the WHS-module are all self-help interventions. Most have proved to be effective in separate trials on a range of clinical outcomes such as depression (Spek et al., 2008; Warmerdam et al., 2008), well-being (Bolier et al., 2013), and risky drinking (Riper et al., 2008). The workplace was a new setting for the implementation of these interventions.

2. Methods

2.1. Study design

The study is a cluster-randomized controlled trial in which the effectiveness of a WHS module, followed by tailored feedback and an offer of