Finding the golden lining

Assessment, self-help and treatment after trauma

van der Meer, C.A.I.

Citation for published version (APA):

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: https://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.
General introduction
In Japan, an ancient tradition exists called *Kintsugi*, wherein broken objects are being repaired with gold because of the philosophy that suffered damage should be emphasized rather than disguised, making the object more valuable and unique (Keulemans, 2016). Experiencing potential traumatic events may result in mental health damage, and similar to Kintsugi, people may view their trauma as precious scars, learn from them, and value life and relationships more. Although most people are resilient and some may even experience positive growth after trauma, a substantial group will suffer from psychological problems, such as posttraumatic stress disorder (PTSD) or depression (de Vries & Olff, 2009; Kessler et al., 2017).

This thesis aims to broaden our knowledge of empowering trauma-exposed individuals, including those who are regularly exposed to stressful work-related events, like police officers and healthcare providers. In more detail, this thesis examines facilitating (self) assessment and self-management of post-trauma outcomes, and providing a better understanding of clinical populations with PTSD and treatment outcomes.

In this general introduction, we will first describe common post-trauma reactions, (the burden of) PTSD symptoms, and opportunities to empower trauma-exposed individuals. Further, we will provide the outline of the current thesis and subsequently address the specific studies.

**Trauma and common reactions**

If you were asked if you ever experienced a stressful event, such as the sudden death of a loved one, a motor vehicle accident or physical or sexual violence, your answer would probably be ‘yes’. Most of us will experience a potentially traumatic event (PTE) during our life (Benjet et al., 2016; de Vries & Olff, 2009), defined as a direct or indirect exposure to an actual or threatened death, serious injury, or sexual violence (American Psychiatric Association, 2013). In fact, around 70% of the world’s population will be exposed to at least one PTE in their life, with 30.5% of the trauma-exposed individuals facing more than four PTEs on average (Benjet et al., 2016). This exposure is higher in individuals with high-risk jobs, such as police officers and healthcare professionals (e.g. doctors and nurses), who are regularly exposed to PTEs during their work. Generally, most people are shaken up by an event, and may feel jumpy, anxious or sad, have nightmares or unwanted memories about the event, or difficulties concentrating. These acute reactions are considered normal, and in the majority of people they naturally resolve after a few weeks (Bonanno, Westphal, & Mancini, 2011).
PTSD symptoms

Around 10% of trauma-exposed people develop posttraumatic stress disorder (PTSD). The lifetime prevalence rate of PTSD is around 8% in the general population, with women generally showing a two to threefold rate compared to men (de Vries & Olff, 2009; Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012). In police officers and healthcare professionals PTSD prevalence rates vary between 7% (Carlier & Gersons, 1995; Maia et al., 2007) and 29%, respectively (De Boer et al., 2011; Petrie et al., 2018; Roberts, Kitchiner, Kenardy, & Bisson, 2009). PTSD is characterized by re-experiencing the traumatic event (e.g. unwanted memories, nightmares, flashbacks), avoidance of trauma-related stimuli (e.g. avoidance of places, persons, memories, conversations), negative alterations in cognitions and emotions (e.g. blaming self or others, feeling sad or ashamed), and hyperarousal (e.g. sleeping difficulties, hypervigilance). People suffering from PTSD frequently experience comorbid mental health problems such as depression, alcohol and substance abuse, and somatization symptoms (Cukor, Wyka, Jayasinghe, & Difede, 2010; Kessler et al., 2012), and are at increased risk of physical morbidity including diabetes, cardiovascular disease or cancer (Clemens et al., 2018). PTSD not only imposes a profound burden on the individual, but also on their families, friends, and the society as a whole. PTSD ranks fourth among the most common psychological conditions, and has the highest healthcare costs in comparison to other anxiety disorders (Marciniak et al., 2005). Furthermore, PTSD symptoms may interfere with work performance, which could lead to severe repercussions in the duties of police officers and healthcare professionals, who are responsible for a person’s safety, health, and sometimes life.

Of importance, an even larger proportion of trauma-exposed people who do not meet the diagnostic criteria for full-blown PTSD nonetheless suffer from posttraumatic stress symptoms (PTSS) (Brancu et al., 2016; Kessler et al., 2017) with point prevalence rates ranging up to about one-third in police officers and healthcare professionals (e.g. Carlier & Gersons, 1995; De Boer et al., 2011). Although PTSS are generally less impairing than full-blown PTSD, they nevertheless are associated with a heightened suicide risk, depressive symptoms, alcohol use, and limitations in occupational and social functioning (Brancu et al., 2016; Cukor et al., 2010). Moreover, individuals who suffer from PTSS are at increased risk to develop (delayed) PTSD, even more so after experiencing subsequent PTEs or other stressors (Smid, Mooren, van der Mast, Gersons, & Kleber, 2009). This increased chance to develop (delayed) PTSD may especially apply to high-risk professionals including police officers and healthcare professionals, who are exposed to PTEs on a regular basis (McFarlane & Bryant, 2007; Petrie et al., 2018).
Assessment of mental health after potential traumatic events
Despite the fact that a considerable proportion of people suffers from trauma-related symptoms, the majority of them do not seek professional help due to several reasons. First of all, many trauma-exposed individuals do not recognize their symptoms (as being trauma-related), even those who have been treated for PTSD before (Harik, Matteo, Hermann, & Hamblen, 2017). If people do recognize their symptoms, personal concerns like embarrassment, fear of stigma, negative consequences (for example on career), bad experiences with psychological treatment, and avoidant behavior may withhold them from seeking help (Corrigan, 2004; Kuhn et al., 2018). These barriers in timely recognizing trauma-related symptoms and seeking help are alarming, especially since early provision of appropriate interventions following trauma is associated with less PTSS development (Roberts et al., 2009). Therefore, there is an urgent need to explore innovative methods to facilitate (self) assessment of trauma-related symptoms. Smartphone applications (apps) offer promising opportunities in this regard (Olff, 2015; Price, Yuen, et al., 2014). Via apps, easy-accessible assessment tools may be delivered to a wide range of trauma-exposed people, in order to help them recognize symptoms, stimulate help seeking behavior, and facilitate referral to professional care if needed (Olff, 2015; Price, Ruggiero, et al., 2014; Price, Sawyer, Harris, & Skalka, 2016; Price, Yuen, et al., 2014). However, extensive research on the validity and reliability of apps to assess trauma-related symptoms is frequently lacking. So far only a few studies have been conducted on the feasibility and usability of apps assessing and monitoring mental health after trauma, which suggest high usage and user satisfaction, but not deliver evidence on the validity and reliability of these apps (Donker et al., 2013; Olff, 2015; Price, Ruggiero, et al., 2014; Price et al., 2016).

Additionally, when assessing mental health after PTEs, it is not only important to focus on mental health outcomes, but also on factors that may affect these outcomes including external factors (e.g. social support and a healthy family environment) and internal capacities (Bonanno, Brewin, Kaniasty, & Greca, 2010; Brewin, Andrews, & Valentine, 2000). A crucial aspect of the internal capacity is psychological resilience, meaning the extent to which individuals evaluate themselves as being resilient, which is considered to positively influence post-trauma outcomes (Connor, 2006; Windle, Bennett, & Noyes, 2011). Although several (commercial) resilience scales have been developed (Chmitorz et al., 2018) many of them attempt to assess multiple facets of resilience instead of a clear, distinct factor, such as psychological resilience. Up to now, a freely available scale to measure psychological resilience is lacking.
Self-management of trauma-related symptoms
When trauma-related symptoms are determined, (professional) care may be required. However, the aforementioned personal barriers including stigma plus time, cost and logistic constraints may prevent people from seeking and receiving help (Corrigan, 2004; Kuhn et al., 2018). In addition, healthcare institutions frequently lack the capacity to deliver interventions to all trauma-exposed individuals with (subclinical levels of) trauma-related symptoms (Brewin et al., 2010; Shalev, Ankri, Peleg, Israeli-Shalev, & Freedman, 2011). And even though (subclinical) trauma-related symptoms are highly prevalent, associated with comorbid psychological problems and limitations in daily functioning, potentially worsen over time and progress into delayed PTSD (Marshall et al., 2001; Smid et al., 2009), there is a serious lack of easy-accessible interventions to diminish these symptoms (Kuhn et al., 2018; Olff, 2015). Via apps, low-intensity interventions to self-manage trauma-related symptoms may be delivered on a large scale (Owen et al., 2015; Owen et al., 2018). Studies that rigorously examined the efficacy of apps in reducing mental health problems are scarce (Donker et al., 2013), but some studies have shown the efficacy of apps in reducing anxiety (Firth et al., 2017), work absence and depressive symptoms (Birney, Gunn, Russell, & Ary, 2016), and depression, substance abuse, and stress (Donker et al., 2013). Also, some evidence suggests that apps may be efficacious in reducing PTSS in individuals with high levels of PTSS (i.e. probable full-blown PTSD) (Kuhn et al., 2017; Miner et al., 2016; Possemato et al., 2016). However, it is unclear if self-help apps for self-management of PTSS are efficacious in individuals with lower levels of PTSS.

Understanding clinical populations and PTSD treatment outcomes
When formal PTSD treatment is indicated, two types of evidence-based psychotherapies, i.e. eye movement desensitization reprocessing (EMDR) or trauma-focused cognitive behavior therapy (TF-CBT), are first choice treatments (Cusack et al., 2016). Although both treatments are (approximately equally) effective in the majority of PTSD patients, at least one-third of patients will still suffer from full-blown PTSD after treatment (Bradley, Greene, Russ, Dutra, & Westen, 2005). A better understanding of clinical PTSD populations and factors that are associated with both negative and positive outcomes after PTSD treatment may contribute to better treatment results. High-risk professionals including police officers and healthcare professionals are important target populations, since they are at increased risk to develop (delayed) PTSD due to the repeated exposure at work to severe suffering, tragic events, and sometimes life threatening situations (Smid, Kleber, Rademaker, van Zuiden, & Vermetten, 2013; Smid et al., 2009). Currently, relatively little is known about the characteristics and PTSD treatment response of police officers with PTSD. Previous studies in various clinical populations have shown that female gender, changes in negative cognitions, and higher baseline PTSS were positively associated with response to PTSD treatments, whereas
negative associations have been found with more previous trauma (Hembree, Street, Riggs, & Foa, 2004; Karatzias et al., 2007; Rizvi, Vogt, & Resick, 2009; Tarrier, Sommerfield, Pilgrim, & Faragher, 2000; Van Minnen, Arntz, & Keijsers, 2002; Zalta et al., 2014). However, literature on PTSD treatment outcomes in police officers is scarce and none of the previous studies have examined treatment outcome predictors. Furthermore, treatment response is generally simply defined as the ab- or presence of full-blown PTSD, unfairly ignoring residual symptoms after treatment and their potential predictors. Additionally, studies on PTSD treatment outcomes have mainly focused on reducing psychopathology instead of increasing positive outcomes that go beyond victimhood, like posttraumatic growth that comprises feelings of positive psychological change and growth (e.g. enhanced appreciation of relationships and everyday life, and increased personal strength) (Knaevelsrud, Liedl, & Maercker, 2010). Examining positive outcomes such as posttraumatic growth during PTSD treatments and their relationship with PTSD symptom change may broaden our knowledge of potential mechanism underlying effective PTSD treatments (Hagenaars & van Minnen, 2010; Knaevelsrud et al., 2010).

Aims and outline of this thesis

The overall objective of this thesis is to empower trauma-exposed individuals by facilitating self-assessment and self-management, and providing a better understanding of clinical populations with PTSD and PTSD treatment outcomes. This overall objective resulted in three specific aims. First, to develop and investigate tools that contribute to and facilitate the assessment of mental health factors and outcomes following trauma (Part I). Second, to examine an easy-accessible self-help intervention to empower trauma-exposed individuals and support self-management of trauma-related symptoms (Part II). Third, to deepen our understanding of the demographic and clinical characteristics of clinical PTSD populations, and gain insight into factors associated with PTSS (severity) and PTSD treatment outcomes (Part III).

To address the aims of this thesis, we conducted the following studies.

Part I - Facilitating assessment of mental health after trauma

In order to facilitate easy accessible screening for trauma-related symptoms, we describe the development and validation of a web-based application called SAM (Smart Assessment on your Mobile) in chapter 2. We demonstrate whether SAM is able to accurately identify PTSD and depression in a sample of (PTSD) treatment seeking police officers. In chapter 3,
we introduce the concept of psychological resilience, a distinct factor that is positively associated with mental health outcomes after adversities. We examine the psychometric properties and measurement invariance of a newly developed scale (RES: Resilience Evaluation Scale) to measure psychological resilience in a general healthy Dutch- and English-speaking population.

**Part II - Self-management of trauma-related symptoms**

To deliver easy-accessible interventions to self-manage trauma-related symptoms, the PTSD Coach was developed in the United States, and adapted and translated into six additional international versions. In chapter 4, all seven versions of the PTSD Coach app (United States, Australia, Canada, The Netherlands, Germany, Sweden, and Denmark) are presented, with a special focus on adaptations and enhancements to the original U.S. PTSD Coach, and research on the efficacy, usability and user satisfaction. We further discuss (global) obstacles in developing, adapting, investigating and implementing mobile apps in the psychotrauma field. In a randomized controlled trial (RCT), we then examine the efficacy of the Dutch equivalent of the U.S. PTSD Coach app, called SUPPORT Coach, as a self-help app in reducing PTSS, negative trauma-related cognitions, lack of social support and enhancing psychological resilience in healthcare professionals with PTSS (chapter 5). In addition, we evaluate the usability and user satisfaction of SUPPORT Coach in this high-risk occupation population.

**Part III – Understanding clinical populations and PTSD treatment outcomes**

In chapter 6, we describe how gender and age are associated with PTSS and (types of) traumatic events in PTSD treatment seeking police officers. In chapter 7, we aim to evaluate whether sociodemographic variables (e.g. gender, age, years with police), exposure to trauma type and clinical variables (e.g. baseline symptoms) were associated with PTSS reduction during TF-CBT and residual PTSS after treatment in police officers with PTSD. In chapter 8, we shift focus from psychopathology to positive outcomes after PTSD treatment, and describe the relationship between posttraumatic growth and symptom improvement in PTSD patients during treatment, directly comparing two different PTSD psychotherapies. Finally, chapter 9 provides a summary and general discussion on the findings of chapters 2-8.
References


Cukor, J., Wyka, K., Jayasinghe, N., & Difede, J. (2010). The nature and course of subthreshold PTSD. *Journal of Anxiety Disorders, 24*(8), 918-923. doi:10.1016/j.janxdis.2010.06.017


Chapter 1


General introduction


