Clinical Psychology Review 34 (2014) 249–255

Contents lists available at ScienceDirect

Clinical Psychology Review

Remission from post-traumatic stress disorder in adults: A systematic review and meta-analysis of long term outcome studies

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HIGHLIGHTS

- We conducted a meta-analysis on spontaneous long-term remission from PTSD.
- Remission was defined as reporting PTSD at baseline and not after at least ten months.
- 42 studies and 81,642 participants were included.
- Overall, 44.0% of participants remitted from PTSD after a mean of 40 months.

ARTICLE INFO

Article history:
Received 16 November 2013
Received in revised form 7 February 2014
Accepted 7 March 2014
Available online 14 March 2014

Keywords:
Post-traumatic stress disorder
Prospective studies
Meta-analysis

ABSTRACT

Posttraumatic stress disorder (PTSD) is a frequent mental disorder associated with significant distress and high costs. We conducted the first systematic review and meta-analysis on spontaneous long-term remission rates, i. e., without specific treatment. Data sources were searches of databases, hand searches, and contact with authors. Remission estimates were obtained from observational prospective studies of PTSD without specific treatment. Remission was defined as the actual percentage of PTSD cases at baseline who are non-cases after a minimum of ten months. Forty-two studies with a total of 81,642 participants were included. The mean observation period was 40 months. Across all studies, an average of 44.0% of individuals with PTSD at baseline were non-cases at follow-up. Remission varied between 8 and 89%. In studies with the baseline within the first five months following trauma the remission rate was 51.7% as compared to 36.9% in studies with the baseline later than five months following trauma. Publications on PTSD related to natural disaster reported the highest mean of remission rate (60.0%), whereas those on PTSD related to physical disease reported the lowest mean of remission rate from PTSD (31.4%). When publications on natural disaster were used as a reference group, the only type of traumatic events to differ from natural disaster was physical disease. No other measured predictors were associated with remission from PTSD. Long-term remission from PTSD without specific treatment varies widely and is higher in studies with the baseline within five months following trauma.

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http://dx.doi.org/10.1016/j.cpr.2014.03.002
0272-7358/

1. Introduction

Epidemiological research indicates that most people experience at least one potentially traumatic event during their lifetime (Breslau, Davis, Andreski, & Peterson, 1991; Creamer, Burgess, & McFarlane, 2001; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Perkonigg, Kessler, Storz, & Wittchen, 2000). In many parts of the world, individuals are exposed to large-scale traumatic events, such as wars or natural disasters (Neria, Nandi, & Galea, 2008; Priebe et al., 2010). Whilst traumatic experiences can lead to a range of mental health problems, post-traumatic stress disorder (PTSD) is the most documented disorder following trauma. The diagnostic criteria for PTSD require the onset of characteristic symptoms following exposure to a traumatic event that must be present for more than one month (American Psychiatric Association, 2000). The prevalence estimates of PTSD are high. For example, in the European and US general population the 12-month prevalence of PTSD has been estimated between 2.0 and 3.5% (Kessler, Chiu, Demler, Merikangas, & Walters, 2005; Wittchen et al., 2011). PTSD is associated with significant mental and physical distress (Nemeroff et al., 2006) as well as high economic burden (Kessler, 2000; Sabes-Figuera et al., 2012; Wittchen et al., 2011).

There is good empirical evidence for the moderate efficacy of trauma-focused psychological interventions (Ehlers et al., 2010) and to a lesser degree for pharmacotherapy (Stein, Ipser, & McAnda, 2009). Yet, a significant number of individuals with PTSD do not seek treatment for their complaints (Gavrilovic, Schützwohl, Fazel, & Priebe, 2005), or fail to receive treatment, e.g., when they live in areas with limited or no access to mental health services after war or natural disasters (Morina, Rushiti, Salihu, & Ford, 2010). The question arises as to how important it is to expand the provision of treatment to all those people with PTSD who are currently without treatment. This can only be assessed based on data about the long-term outcomes of PTSD without treatment. Available prospective studies on the course of PTSD indicate different trajectories in different populations. Differences across studies are presumed to occur due to the different nature of traumatic events, methodological differences, current living conditions, and psychological factors (Brewin, Andrews, & Valentine, 2000; Ozer, Best, Lipsey, & Weiss, 2003; Schnurr, Lunney, & Sengupta, 2004). There is lack of a published systematic review on the remission rate of PTSD without specific treatment. Accordingly, we conducted a systematic review and meta-analysis of prospective studies to assess the remission rate of PTSD without specific treatment. Furthermore, the study aimed at identifying variables that explain variations in remission estimates across studies.

2. Method

Observational prospective studies on the natural course of PTSD published since 1980 (i.e., since the introduction of PTSD in DSM-III) (American Psychiatric Association, 1980) were located in the following computerized bibliographic databases: PUBMED, PsycINFO, and the PILOTS database managed by the US National Center for PTSD. The following search terms were used: *post-traumatic stress disorder or post-traumatic stress disorder or PTSD AND long* or prognos* or follow-up or prospect* or cohort* or endur* or prolong* or persist* or ongoing or contin* or durable or outcome study or natural history or clinical course*. In addition, a hand search of the following journals assumed to be likely to publish relevant articles was conducted: *American Journal of Psychiatry, Archives of General Psychiatry, British Journal of Psychiatry, Journal of Nervous and Mental Disease, and Journal of Traumatic Stress*. Finally, an iterative bibliography search was performed on citations published of all articles included in the review. The last search was conducted in March 2013.

Publications had to meet the following criteria: 1) use of a prospective design, 2) a sample size of at least 40 participants at the first assessment; 3) at least 80% of participants older than 17 years; 4) report of remission rates of PTSD, 5) use of a validated PTSD measurement (diagnostic interview or self-report) that was based on either DSM or ICD criteria for PTSD, 6) follow-up conducted at least ten months after the first assessment, 7) report of response and drop-out rates, and 8) the majority of participants were not treated for PTSD during the study (i.e., intervention studies were excluded as well as studies reporting that the majority of participants had received PTSD-related treatment during the observation period of the study). We decided to include studies with a follow-up conducted at least ten months after the first assessment in order to examine the long term course of the diagnosis of PTSD. If a publication provided information on more than one follow-up being conducted at least ten months after the first assessment, we used the data from the last follow-up period if this provided the necessary information on remission from PTSD.

Relevant data from relevant publications were extracted using a construed coding protocol. In studies with more than two measurement points, the first valid assessment and the last assessment were used. Age was entered as a mean for each single study. If age was reported in categories, mean age was attained by multiplying number of participants with the median age in the respective category. The median of the category 65+ was 75 years. The marital status of participants was determined in percentages per sample, with cohabiting and married participants being the same category. The remaining participants were coded as not living together. The response rate at baseline was the percentage of participants who were included at baseline compared to all those contacted who met study criteria. Number of drop-outs was attained by subtracting the number of study completers from the total of included participants at baseline.

The following variables were used as study-level predictors: type of sampling (population based vs. critical population), type of instrument used to assess PTSD (self-report measurement vs. diagnostic interview), nature of assessment (face-to-face vs. via telephone), gender (proportion men), age at study baseline, partnership at baseline, employment status at baseline, country where study conducted (Western vs. non-Western), treatment between baseline and follow-up, time between trauma and baseline (<six months vs. ≥), time between assessments (months between baseline and last assessment), drop-out rate at follow-up, type of traumatic exposure (abbreviated vs. extended), comorbid depression or anxiety disorders at baseline, and nature of the trauma (separately analyzed using dichotomous variables, e.g. natural disaster vs. accidental injury). In four studies, the time between trauma and baseline could not be estimated due to missing information. Comorbid depression or anxiety disorders at baseline were used as predictors if the authors had reported co-occurring depression or anxiety disorders at baseline among individuals with PTSD. The temporal component of trauma events was dummy coded according to Terr's proposition (Terr, 1991). Type 1 corresponded to a relatively abbreviated exposure such as a motor vehicle accident. Prolonged exposure to traumatic