Mediators and moderators of treatment effects in social anxiety disorder and post-traumatic stress disorder.

Anxiety Disorder PhD Scholarship 2016: Department of Experimental Psychology, University of Oxford

Supervisor: Professor Anke Ehlers

Lay Summary:

Cognitive-behaviour therapies are effective in anxiety disorders. Less is known about why these treatments work and who responds to them. The project will investigate these questions in two common and disabling conditions, posttraumatic stress disorder (PTSD) and social anxiety disorder (SAD). The supervisor's team have developed highly effective cognitive therapy programmes for these conditions. More recently, they have developed therapist-assisted internet-based versions of these treatments that allow very precise investigation of the relationship between patient and therapist behaviours and symptom changes.

In investigate how the treatments work, the project will closely monitor changes in variables that are thought to drive symptom change according to cognitive theories of SAD and PTSD (such as negative beliefs, patterns of attention and memory, and behavioural and cognitive responses to threat), as well as changes in symptom severity and the therapeutic relationship. Statistical analyses will identify which changes in cognitive and behavioural variables lead to subsequent clinical improvement. Furthermore, the internet-based programmes automatically record variables of interest that characterise patients' behaviour in a more detailed way than previously possible in face-to-face therapy. This will allow us to study in detail which components of the treatments are linked to substantial improvement.

The project will also test whether there are patient characteristics that predict poorer treatment response such as gender, concurrent depression, educational background, and type of social fear/ trauma.

The results of the project will help improve the treatments further and help identify people who may benefit from adaptations of the treatment programmes or additional interventions.

Scientific goal: Mediators and moderators of treatment effects in social anxiety disorder and post-traumatic stress disorder.

Research Student: Milan Wiedemann

Hi, my name is Milan. My DPhil is due to start in October 2016 at the Oxford Centre for Anxiety Disorders and Trauma, University of Oxford.

I'm delighted to have been awarded this studentship by MHRUK and to be given this great opportunity to develop my research skills and clinical knowledge. My work will focus on the mechanisms for therapeutic change and recovery in cognitive therapy for two common mental health problems. Understanding the ways in which targeted treatments work will allow us to enhance and refine their therapeutic utility.

I will be supervised by Professor Anke Ehlers and Professor David M Clark, whose research has not only influenced our understanding of how anxiety disorders emerge and are maintained but also, how we use psychological therapies to effectively treat these conditions.

My project aims to investigate mechanisms of treatment effects in cognitive therapy for SAD and PTSD. In particular, how we achieve good therapeutic outcome when a highly successful treatment program for PTSD is delivered via the internet rather than face to face. I'm looking forward to this next step in my career and all the valuable experiences and challenges it will bring.

Start Date: September 2016

Progress Report Year 4, 2020

Currently I'm transforming two of my main chapters of my thesis into manuscripts to be sent out for peer-review. I haven't scheduled my viva yet but will make a plan with Anke in the coming weeks, I'm aiming to finish by October this year.

I've published another R package (software), a manuscript describing this software is also in preparation and will follow at some point soon:

Wiedemann, M. (2020). lcsm: An R package for latent change score modelling. Retrieved from https://github.com/milanwiedemann/lcsm.

Progress Report Year 3, 2019

This year I have completed my research on sudden gains during cognitive therapy for PTSD. I investigated how changes in cognitive processes and associated with sudden gains. The results of this study show that a subgroup of patients with PTSD show concurrent large improvements in PTSD symptoms from one treatment session to the next. Sudden gains were also preceded by greater changes in appraisals than sessions that did not include sudden gains. This supports interventions that target the identification and modification of negative appraisals in PTSD. I have presented the results of this research in a symposium at the World Congress of Behavioural and Cognitive Therapies in Berlin and have also submitted this work to a peer-reviewed journal for further comments and publication. My colleagues and I have also developed and published a new computer program to identify sudden symptom improvements and deteriorations during therapy. We presented a poster illustrating the functions of this program at the same conference. We aimed to introduce our approach to identify sudden gains to other researchers in the field and hopefully improve the methods used in this research area (see Figure). comorbid symptoms are

I have continued to learn the advantages and disadvantages of different methods that can be used to analyse data from clinical trials to better understand how they work. This part of my PhD looks at how changes in cognitive processes are associated with subsequent changes in PTSD symptoms to get a better understanding of the processes through with cognitive therapy for PTSD may work. As part of this I have further developed an R package that automates the analysis of one method that specifically addresses this research question, latent change score modelling. At the moment I am investigating mediation of clinical improvement analysing different clinical datasets using different statistical approaches depending on the design of the trail and the available data.

Progress Report Year 2, 2018

During my second year I looked in more detail at some processes of change in cognitive therapy for Posttraumatic Stress Disorder (PTSD). I have finished the sudden gains project I started last year and am writing up a manuscript of this study for publication. While working on this project I have developed a software package that makes it easy to identify clients that experienced sudden symptom improvements or deteriorations during the course of therapy.

The project I'm focusing on at the moment is looking in more detail at the dynamic interplay between changes in symptoms and predictors that are thought to drive symptom change according to cognitive theories of PTSD. More specifically, this project looks at how changes in a mediator variable (e.g. negative trauma related appraisals) are related to changes in PTSD symptoms in the following session (see Figure 1). I have examined the strengths and limitations of different methodological approaches to test whether changes in negative trauma related appraisals precede changes in PTSD symptoms and started analysing data from a recent effectiveness study.
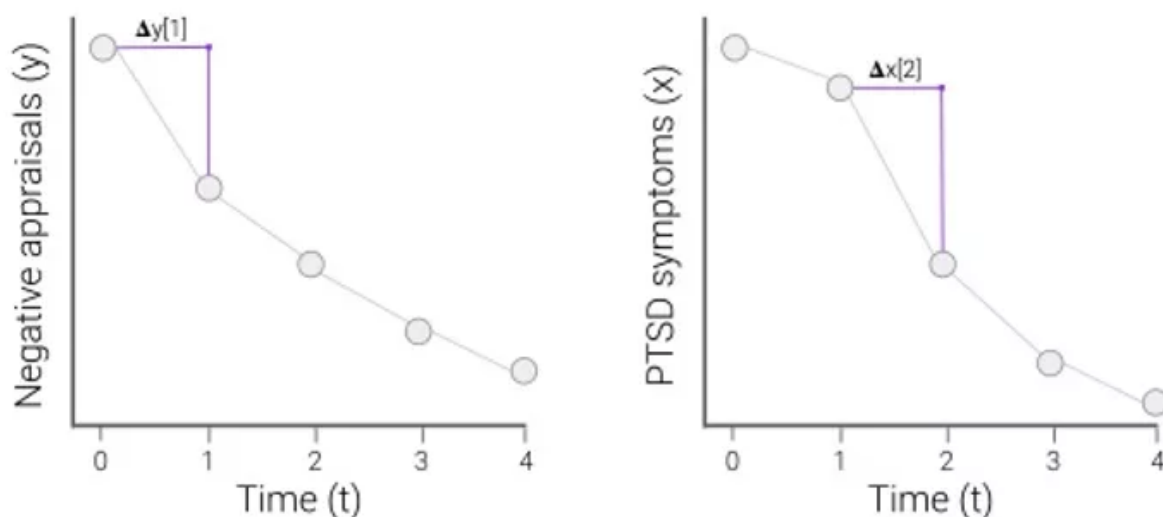
Figure 1. Are changes in negative appraisals related to subsequent changes in PTSD symptoms?

Furthermore, I have familiarised myself with recent research looking at psychological networks in clinical psychology, particularly in therapy for PTSD. I am planning a research project using this method to investigate how networks of different symptoms and cognitive processes change during cognitive therapy for PTSD. Later this year I am attending a Summer School in Amsterdam to learn more about network models.

This year I had the opportunity to present and discuss one of my studies at a departmental seminar at the University of Exeter. In September this year I will present preliminary results of another research project at the University of Groningen.

Progress Report Year 1, 2017

I am trying to understand more about how patients who receive cognitive therapy for posttraumatic stress disorder (PTSD) get better by looking at the change processes during therapy. Specifically, I am looking at how change in symptoms occur and how certain patient characteristics might predict treatment outcome. These factors will be important in order to test whether the treatment works for the reasons suggested by the underpinning cognitive model.

During my first year I focussed on analysing sudden gains in cognitive therapy for PTSD. Sudden gains are sudden and drastic improvements in symptoms experienced by patients in between-session intervals. My findings show that patients with sudden gains do better in treatment overall compared to patients who did not experience a sudden gain. Further analyses will test whether cognitive changes and changes in depression symptoms help to understand the occurrence of these sudden gains. I will also look at session notes and treatment videos to see if specific therapeutic techniques lead to sudden gains.
To complement self-ratings from patients, I am using voice stress analysis to measure changes in emotional arousal during therapy sessions. So far, I have been training in the analysis and ideas behind this relatively new approach in psychotherapy research.

In my next year I will finish my sudden gains analyses and start looking in more detail at the mechanisms of change in cognitive therapy for PTSD using structural equation modelling approaches.