



## **Proposals for the Alicia Koplowitz Foundation PhD Fellowships**

PROJECT PROPOSAL NUMBER 1

### **Internet-delivered treatment for anxiety-related disorders in youth with Autism Spectrum Disorder: A randomised controlled trial with health economic evaluation and long-term follow-up**

Up to half of young people with Autism Spectrum Disorder (ASD) have comorbid anxiety or obsessive-compulsive disorders, though these disorders are seldom treated with evidence-based approaches. Mounting evidence suggests that these common mental disorders can be successfully managed with cognitive-behaviour therapy (CBT) specifically adapted for persons with ASD. Unfortunately, treating anxiety-related disorders in persons with ASD is resource-intensive, and such treatment is only currently available at a few specialized clinics in Sweden, creating a huge gap between demand and availability of treatment. Internet-delivered CBT (ICBT) was developed as an innovative solution to overcome existing treatment barriers, with demonstrated efficacy and cost-effectiveness in youth with a range of common mental disorders, including anxiety disorders and obsessive-compulsive disorder (OCD). However, these studies systematically excluded participants with ASD. Therefore, little is known about whether ICBT could be a viable alternative to treat common comorbid disorders (i.e., anxiety and OCD) in patients with ASD. Capitalising on the existing infrastructure available within our research network and experience developing eHealth interventions for several psychiatric and functional somatic disorders in young people, aim to evaluate the efficacy and cost-effectiveness of an ICBT protocol for anxiety-related disorders specifically adapted for the needs of persons with high functioning ASD. We will partner with patients, families, and clinicians to further develop this intervention and evaluate its efficacy, durability, and cost-effectiveness in a fully powered randomized controlled trial (N=92 participants) with a long-term follow-up (12 months after treatment). We will also perform a cost-effectiveness evaluation of the intervention from the healthcare and societal perspectives. If successful, the intervention will be implemented in Stockholm's new CAMHS Internet treatment clinic.

## PROJECT PROPOSAL NUMBER 2

### **Identifying targets for prevention in Obsessive-Compulsive Disorder (the OCDTWIN study)**

Obsessive-compulsive disorder (OCD) is a common and impairing disorder which strongly affects quality of life and presents a burden to the individual as well as society at large. Despite dedicated research, the causes of OCD remain largely unknown. Gene-searching efforts are well underway but the identification of specific environmental risk factors should be regarded as a scientific priority because some of these risk factors may be amenable to early intervention and prevention strategies. Genetically-informative studies, in particular those employing the discordant monozygotic (MZ) twin design, are ideally suited to study environmental risk factors. In Sweden, we have launched OCDTWIN, an ambitious project to create the world's first cohort of MZ twin pairs where at least one twin has a confirmed diagnosis of OCD. We are building a unique biobank of biological specimens, including blood, saliva, urine, stool, hair, and brain imaging data from MZ twin pairs. Data on other prenatal and early-life environmental exposures (e.g., obstetric complications, childhood infections, childhood stress) will be available through linkage with the Swedish nationwide registers. We will identify environmental risk factors (e.g., epigenetic changes) that are in the causal pathway to OCD through within-pair comparisons of discordant MZ twins, which will allow us to isolate the impact of unique environmental factors, while strictly controlling for genetic and shared environmental influences. The innovative project design, along with the unique data available in the Swedish registers and existing infrastructure, provide an unparalleled opportunity to generate new insights into the potentially modifiable causes of OCD. The study, which is underway (25 MZ twin pairs already recruited), will generate many kinds of data for analysis. Prospective PhD students can focus on various aspects of the study, according to their own personal preference/expertise.

## **PhD SUPERVISORS**

**Prof David Mataix-Cols**, PhD, leads the Obsessive-Compulsive and Related Disorders Across the Lifespan research group at the Department of Clinical Neuroscience, KI (<http://ki.se/en/cns/david-mataix-cols-research-group>). He is an internationally leading expert in the field of anxiety, OCD, and related disorders. He also works as a consultant clinical psychologist at the OCD and Related Disorders Clinic for children and adolescents at the Child and Adolescent Psychiatry Research Centre in Region Stockholm. He is the coordinator of the Alicia Koplowitz Foundation advanced training fellowships and the new PhD fellowships hosted at the Karolinska Institutet.

**Dr Lorena Fernández de la Cruz**, PhD, Senior Researcher, is a clinical researcher specialized in the field of OCD and related disorders. She has clinically trained in Spain and the UK. She currently leads the “Health consequences and lifestyle modification group”, which primarily focuses on the long-term medical and socioeconomic consequences of OCD and related disorders and the development of lifestyle interventions.

## **RESEARCH SETTING AND PRACTICAL ARRANGEMENTS**

The PhD student will become part of the Obsessive-Compulsive and Related Disorders Across the Lifespan research group, led by Prof. Mataix-Cols. The group is part of the Department of Clinical Neuroscience (CNS) at Karolinska Institutet (KI) and has strong links with the Child and Adolescent Psychiatry Research Centre within the CAMHS in Region Stockholm. The PhD student will have the necessary desk space as well as access to the Internet and to online library/data searches, the institution's network, and statistical software.

## **ADDITIONAL TRAINING ACTIVITIES**

Doctoral level courses related to the content and methodological skills needed for the development of the epidemiological projects described above will be available at KI (with no cost for the PhD student), such as:

- Basic Course in Medical Statistics
- Clinical Research in Child and Adolescent Psychiatry
- Writing Science and Information Literacy
- To Communicate Science in Different Contexts

- How to Conduct Systematic Reviews and Meta-Analyses
- Medical Research Ethics
- Epidemiology I: Introduction to epidemiology
- Epidemiology II: Design of epidemiological studies
- Biostatistics: Introduction for epidemiologists
- SAS (statistical package for epidemiological studies) for beginners

Additionally, the fellow will be able to attend other educational activities hosted at the Karolinska Institutet and the Child and Adolescent Psychiatry Research Centre, including our monthly Journal Club, trimestral KI OCD Sessions, and several series of periodic lectures at KI (e.g., KI Discovers, the Stockholm Psychiatry Lectures), among many others.

### **CLINICAL ACTIVITIES**

There is the possibility for the PhD student to obtain an honorary clinical contract to participate in clinical sessions at the different clinics within the Child and Adolescent Psychiatry Research Centre (e.g., OCD and related disorders clinic, immunopsychiatry clinic, neurodevelopmental disorders / neuropsychiatry clinic, gender dysphoria clinic, trauma clinic) and other child and adolescent psychiatric clinics within Region Stockholm. However, most sessions will be in Swedish and therefore this option will be linked to the willingness of the PhD student to quickly learn the basics of the Swedish language. The Swedish Government offers free Swedish Courses for Immigrants.