1. Title: Transcultural psychiatry: Exploring the assessment and diagnoses of migrants in Denmark

2. Project period: The data collection is finished and the Ph.D. period will run until March 2019.

3. Investigator: Signe Skammeritz, MD, Ph.D. student

4. Supervisors and collaborative partners
The project supervisors include Senior Consultant Jessica Carlsson, PhD (CTP, Mental Health Centre Ballerup), Professor Erik Lykke Mortensen (University of Copenhagen) and Associate Professor Marie Nørredam (MESU, University of Copenhagen).
The project is carried out in collaboration with Section of immigrant medicine, Department of Infectious Diseases, University Hospital Hvidovre (IMK), The Danish Research Centre for Migration, Ethnicity and Health (MESU), and Psychiatric outpatient clinic Ballerup.

5. Background
Prevalence of psychiatric diagnoses and diagnostic shifts
In Denmark, as in many other countries, there has been an increase in migrants over time[1,2]. In January 2013, 10.7% of the Danish population consisted of migrants and their descendants originating from over 200 different countries[2,3]. Studies have shown that migrants have a higher risk of developing psychiatric illnesses, such as schizophrenia, compared to the native population[4–6]. This also applies when migrating from one western country to another[7,8]. Norredam et al. have found that refugees are at significantly higher overall risk of having a first-time contact with mental disorders compared to native Danes[9]. The complex interplay between the migration process, cultural bereavement and cultural identity along with biological, psychological, and social factors is hypothesized to play a major role in the increased rates of mental illness[10].
A broad overview of the prevalence of the different mental disorders in all groups of migrants in Denmark will help us understand the treatment demand and thereby improve the ability to plan the treatment needed for this vulnerable patient group. A high number of diagnostic shifts in migrants will potentially reflect a low reliability in the diagnostic processes and a lack of diagnostic precision in migrant patient populations. A more valid diagnosis will supposedly imply better mental health care for this group of patients as treatment and care often are determined by the specific psychiatric diagnosis.

Diagnosing mental disorders across cultures
To this date, there is no objective measurement to help clinicians determine a psychiatric diagnosis. Because of this, diagnostic systems such as the International Classification of Diseases-10 (ICD-10) and the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5), were developed, and diagnostic tools such as Schedules for Clinical Assessment in Neuropsychiatry (SCAN), are used to increase the diagnostic validity. Consequently, diagnosing mental disorders can be challenging, and diagnosing patients across cultures adds an extra dimension to this challenge. Studies show that migrants are at risk of being misdiagnosed[11–13]. In clinical everyday life, it is essential for the clinician to be aware of the cultural context in order to reach a full understanding and precise diagnosis, which will secure the correct treatment. Studies have pointed out that sociocultural differences are potentially a source of error in the diagnostic process. Therefore, a

greater awareness of sociocultural differences is recommended[14–16]. It is important to study the underlying explanations for a potential diagnostic uncertainty in a Danish context, because it could reduce misdiagnosing and thereby lead to better and more efficient mental health care.

Cultural competence and the Cultural Formulation Interview (CFI)
Cultural competence is the ability to understand and be aware of cultural factors[17–19], such as culturally embedded health beliefs and practices. Cultural factors have a major influence on the explanatory models of the patients, which are the ways patients behave and think about their illnesses and the treatments they are offered[19–23]. The capabilities of the clinician to understand these explanatory models often determine the patients' satisfaction with the treatment, the compliance, and the clinical outcome[24,25]. Adeponle et al. have shown the importance of the cultural competence in the diagnostic process, by examining the change of diagnoses following a cultural consultation, where the clinician used the Outline for Cultural Formulation (OCF) from DSM-IV[26]. Adeponle et al. reviewed the medical records of 325 patients and found that 49% changed diagnosis from a psychotic to a non-psychotic disorder after a cultural consultation[11,27]. This study and others point to the need for methods and tools that are culturally sensitive[28,29].
The CFI is a new instrument in DSM-5, which was developed based on the experiences from the OCF. The CFI is an example of a tool developed to identify and cover the cultural issues and context of the patient. As far as we know, no research has been conducted on the possible effect of the CFI on the diagnostic process and planning of treatment. Studies in this area would likely provide the clinician with important information to help ensure optimal care and a patient-centred approach.

6. Aim/s
The assessment and diagnostic process of migrant patients with mental health problems are areas receiving little research attention in Denmark. Consequently, there is a need for more evidence to ensure a culturally appropriate and patient-centred approach, which will benefit patients, clinicians and be of socioeconomic value, thus assuring a more effective use of resources in the assessment and treatment[30,31]. On the basis of the existing knowledge described below, we will investigate the psychiatric diagnoses and assessment of migrants in Denmark and whether there are ways to improve the current practices. The overall aim of this study is to strengthen the knowledge about the assessment and diagnoses of migrant patients with mental health problems in Denmark and thereby increase the possibility of improving the mental health care for this group of patients.
This PhD project consists of three sub-studies. In the first study, we will examine whether migrants have a higher incidence of mental disorders than native Danes, and give an indication of potential problems with the diagnostic validity in the migrant population. In the second study, we will examine factors that can influence the diagnostic process and validity. In the last study, we will investigate a tool to overcome the potential problems with diagnostic validity. The research questions are as follows:

1. *What is the incidence of psychiatric diagnoses among migrants compared to native Danes and do migrants have a higher number of diagnostic shifts compared to native Danes?*
2. *Do migrant patients change diagnoses during the course of referral, assessment and evaluation of the treatment at the Competence Centre for Transcultural Psychiatry (CTP) and if so, what are the possible causes for the changes?*

3. *Does the clinician find that the use of the Cultural Formulation Interview (CFI) provides important information for the diagnostic process and treatment plan?*

The research questions are based on the following hypotheses:

1. *Migrants have a higher incidence of psychiatric diagnoses than native Danes and migrants have a higher number of diagnostic shifts than native Danes.*
2. *A considerable number of migrant patients will change diagnoses during the course of referral, assessment and evaluation of the treatment at the CTP.*
3. *The CFI provides important information for the diagnostic process and treatment plan.*

7. Methods

7.1 Registry-based study on diagnoses and diagnostic shifts among migrant patients

7.1.1 Number of participants (N)

7.1.2 Population

This study will be based on data retrieved from Statistics Denmark. The data will include all migrants, but not descendants, living in Denmark during the period from 2003-2013 as well as a Danish-born comparison group (1:6). The Danish control group is defined as Danish-born by Danish-born parents in order to exclude descendants of migrants. To obtain information on refugee and family reunification status, the migrant population identified by Statistics Denmark will be linked with an existing cohort at Danish Research Centre for Migration, Ethnicity and Health (MESU), University of Copenhagen, obtained through the Danish Immigration Services.

7.1.3 Description of data and data collection

The personal identification numbers of the population will be cross-linked to the Danish Psychiatric Central Register (PCR) in order to obtain information on psychiatric diagnoses. Individuals will be followed from 1 January 2003 until the date of one of the following events: 1) disease event, 2) death, 3) emigration, 4) end of study (31 December 2013). The PCR contains data on all psychiatric admissions from 1969, including outpatient contacts[32]. Only ICD-10 diagnoses will be included and emergency room visits will be excluded because the diagnostic validity of the short encounters is suspected to be low.

7.1.4 Application/acceptance from the Danish Data Protection Agency, the National Committee on Health Research Ethics: Yes

7.1.5 Analysis

The accumulated number of different diagnoses in the two groups will be compared over a period of 10 years, and the first and last diagnose in the given period will also be compared. This will give an estimate of diagnostic shifts in the two groups. Regression analyses will be conducted adjusting for age, sex and socioeconomic characteristics.

7.2 Observational study of the transcultural assessment and treatment at CTP

7.2.1 Number of participants (N): According to the preliminary numbers approximately 120 patients will be included per year.

7.2.2 Population
All patients at CTP that meet the referral criteria and who are not enrolled in an ongoing randomised controlled trial at the centre will be included in the period from 1 July 2014 to 30 June 2016. The referral criteria at CTP include being an adult (18 years or older), being a migrant with a mental disorder where cultural issues play a significant role in the development, the assessment or the treatment of the disorder, or being a traumatised refugee with a trauma-related disorder. The traumatised refugees with Post-Traumatic Stress Disorder (PTSD) are typically included in an ongoing randomised controlled trial.

7.2.3 Description of data and data collection
Patients will follow the standard treatment procedures at CTP and will be invited to a pre-treatment interview with a doctor. The interview includes a clinical assessment, recording of psychiatric, social and somatic anamnesis, and information about the treatment. ICD-10 and part of the standardised diagnostic tool SCAN will be applied in the assessment. Both self-ratings and observer-ratings will be used at the beginning and end of treatment. These ratings include Hopkins Symptom Check List[33,34], WHO-5[35], Sheehan Disability Scale[36], GAF-S & GAF-F[37], HoNOS[38]. Based on the pre-treatment interview, the doctor will decide if the patient should continue to a multidisciplinary assessment. A decision will be made at a multidisciplinary conference on whether the patient should be offered treatment at CTP, and if so, whether a doctor, psychologist, or a nurse should handle the treatment. Manuals are used for all treatment provided at CTP, and data is collected in the patient records.
After the multidisciplinary assessment, clinicians will decide upon a diagnosis. Treatment will be divided into modules 1 (3 months) and 2 (3 months). After module 1 there will be an evaluation of the treatment and the diagnosis will be revised, and it will be decided whether it is relevant for the patient to continue to module 2. The referral diagnosis will be revised at three different times: After the multidisciplinary assessment, between modules 1 and 2, and at the end of treatment.

7.2.4 Application/acceptance from the Danish Data Protection Agency, the National Committee on Health Research Ethics: Yes

7.2.5 Analysis
The diagnosis will be compared for each patient to evaluate whether diagnostic shifts have occurred at all, if shifts have occurred within the same diagnostic chapter in ICD-10 or from one diagnostic chapter to another. The clinician will be asked to note if and why the diagnosis has been changed.
The sociodemographic data, self-ratings, and observer-ratings will be used to describe the mental symptoms, quality of life, social and physical functioning of the patient group. Information on culturally important issues for the patient will be collected at the assessment.

7.3 Study on the use of the Cultural Formulation Interview

7.3.1 Number of participants (N): 70

7.3.2 Population

70 migrant patients referred to the following clinics will be included from 1 January to 30 June 2016: CTP, Section of immigrant medicine, Department of Infectious Diseases, University Hospital Hvidovre (IMK) and Psychiatric outpatient clinic Ballerup. IMK carries out somatic assessments of migrants with complex somatic pathology. A broad recruitment from clinics that differ in patient groups and services will ensure that results are representative in a larger context in the Danish health care system.

The inclusion criteria include being an adult (18 years or older), being a migrant, having a mental disorder, and having given informed consent.

7.3.3 Description of data and data collection

The CFI is a semi-structured interview with a patient version, an informant version, and supplementary modules to use for in-depth details and specific groups such as children or refugees. The average time spent on the CFI is between 15 and 25 minutes[39]. Only the patient version will be used in this study. During the preparatory phase, the investigator and research colleagues have translated the CFI into Danish. A pilot study on the translated CFI is carried out at CTP from May to August 2014.

In the present study, a doctor at the different settings will assess patients and a CFI will be carried out at a separate time from the ordinary clinical assessment. The doctor will summarise the CFI in the patient records and note if the information from the CFI changes his or her view on the understanding of the patients' symptoms, diagnoses, or the content of the treatment plan. This information will be collected using a check box model. Any critical additional information will also be noted.

7.3.4 Application/acceptance from the Danish Data Protection Agency, the National Committee on Health Research Ethics: Yes

7.3.5 Analysis

The data collected will be analysed to give a quantitative estimate of the additional information obtained by using the CFI. After a CFI, the patient will be asked to fill out a questionnaire about acceptability and satisfaction with the interview. Another researcher in a parallel PhD project will record some of the CFI interviews for qualitative analysis of the patients' narratives. The parallel PhD will also investigate the need for cultural competence among clinicians and the clinicians' acceptability and satisfaction with the CFI.

8. Expected results

The results of this study will contribute to the existing knowledge in the field of transcultural psychiatry and is expected to stimulate further research within a relatively short time. We expect the three studies to have a synergistic effect in which they each contribute to and support each other in enhancing the assessment, diagnostic process and treatment in transcultural psychiatry and thereby improve the mental health of migrant patients. The knowledge obtained in this study may also result in socioeconomic benefits through more focused, time-effective, and patient-centred

treatment[30,31,40–42]. If the CFI proves to be a useful tool for assessment, it can be broadly applied throughout the Danish health care system in a scientifically tested version.

9. Dissemination of results

Four publications are planned:

1. "The incidence of psychiatric diagnoses in migrants compared to native Danes"
2. "Psychiatric diagnostic shifts in migrants compared to native Danes"
3. "Changes in diagnoses during treatment at the Competence Centre for Transcultural Psychiatry"
4. "Using the Cultural Formulation Interview with migrants – impact on the diagnostic process and treatment plan"

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