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Research report

Ethnic differences in seasonal affective disorder and associated factors among five immigrant groups in Norway

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ABSTRACT

Background: Research studies on seasonal affective disorder (SAD) among immigrant populations are scarce. The objective of this article was to explore the associated risk and protective factors on prevalence of winter SAD (W-SAD), sub syndromal SAD (S-SAD) and Summer-SAD among five immigrant groups living in Oslo, Norway.

Methods: The Oslo Immigrants Health study (innvandrer HUBRO, 2002), is a large cross sectional epidemiological survey conducted among five of the largest immigrant groups living in Oslo. 1047 subjects were included in the analysis out of 3019 who participated in the survey. Mailed questionnaire which included selected items of the seasonal pattern assessment questionnaire (SPAQ), Hopkins symptom check list (HSCL) and other variables were used in the analysis.

Results: The lowest levels of W-SAD were found among Sri Lankan men and women and the highest among Iranians. W-SAD was significantly associated with country of birth, younger age, smoking, presence of mental distress, frequent visits to general practitioner or psychiatrist, self reported poor health and presence of chronic disorders. S-SAD was significantly associated with country of birth, smoking and higher levels of alcohol consumption.

Limitations: SPAQ was not culturally validated. Poor response rate (39.7%) can also be considered as a limitation.

Conclusions: Ethnic differences in W-SAD and S-SAD were observed. Sri Lankans had the lowest levels of W-SAD. However, there is a need for culturally validated instruments and further research must focus on exploring protective factors for SAD.

1. Introduction

Seasonal variation in behavior and mood is called seasonality (Sohn and Lam, 2005). Seasonal affective disorder (SAD) describes the extreme end of the seasonality experienced by an individual. SAD is described in the winter (W-SAD) and summer seasons (Haggarty et al., 2002; Kasof, 2009; Oyane et al., 2008). Prevalence rates of W-SAD are found to be much higher than Summer- SAD (Magnusson, 2000). W-SAD is more prevalent in temperate climates with higher latitudes and Summer-SAD in tropical climates in countries nearer to the equator (Avasthi et al., 2003; Boyce and Parker, 1988; Kasof, 2009; Wehr et al., 1987). In addition, a milder form of SAD, sub syndromal SAD (S-SAD) has also been described in the literature (Magnusson, 2000; Magnusson and Partonen, 2005).

In addition to depressive mood, W-SAD is characterized by several atypical symptoms; increased sleep, increased appetite, weight gain and craving for starchy food (Rosenthal et al., 1984; Thompson and Cowan, 2001). Another interesting finding is the improvement of W-SAD with the exposure to bright light (Kasper et al., 1989a; Michalak et al., 2001; Rosenthal et al., 1984). Higher latitude, reduced amount of sunlight per day (photoperiod), female gender, young age, ethnicity, higher annual income (Oyane et al., 2005; Rastad et al., 2005), lower education level and living alone are described as associated with higher prevalence of SAD (Hansen et al., 1998; Magnusson, 2000; Rosenthal et al., 1984; Sohn and Lam, 2005). However, many research articles

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claim that other factors such as environmental factors, climate and socio- cultural effects are also important (Lund and Hansen, 2001; Magnusson, 2000; Mersch et al., 1999; Young et al., 1997). It is also interesting to note that migration to higher latitudes from lower latitudes has been associated with higher prevalence rates of SAD, especially among non indigenous people (Low and Feissner, 1998; Magnusson and Axelsson, 1993; Magnusson, 2000; Suhail and Cochrane, 1997). In contrast, length of stay in a geographical area with a higher latitude has a negative correlation with prevalence rates of SAD (Booker and Hellekson, 1992; (Low and Feissner, 1998; Magnusson and Axelsson, 1993; Saarijarvi et al., 1999).

Prevalence of SAD varies from country to country and among different communities in the same country (Magnusson, 2000). Prevalence of SAD among the Norwegian population as estimated in different studies varies between 6.5% and 19% (Hansen et al., 1991; Lund and Hansen, 2001; Magnusson, 2000). Different prevalence rates in different studies have been attributed to the differences in weather and climatic conditions but some of the different values are due to the different methodological approaches that have been used (Magnusson, 2000). Some studies have used non random recruitment methods such as paper advertisements and telephone surveys, and different studies have used different instruments to measure the prevalence of SAD (Lingjaerde and Reichborn-Kjennerud, 1993; Magnusson, 2000). SPAQ which is used in many studies can also give higher values of depression compared to other instruments which were used to measure SAD (Blazer et al., 1998).

Nevertheless, irrespective of the different prevalence rates found in different studies, evidence show that seasonal affective disorder is under - diagnosed at the primary care level and the patients receive suboptimal and expensive anti-depression treatment (Michalak et al., 2001). On the other hand, in her qualitative study done in the Northern Norway, Cynthia M. Stuhlmiller argues that seasonality is a normal phenomenon experienced by the Northern Norwegians every year and it should not be labeled as a medical disorder (Stuhlmiller, 1998).

There is a paucity of research on seasonal affective disorder among immigrant populations and the few research articles published so far were mostly conducted among sub groups of immigrants such as students (Guzman et al., 2007; Low and Feissner, 1998; Suhail and Cochrane, 1997). About 13% of the Norwegian population is comprised of immigrants from various parts of the world (Statistics Norway, 2012). Almost half of the immigrants (46%) in Norway have immigrated from countries in the Asian and African region with tropical warm weathers and minimal seasonal variation in weather and amount of daily sunlight (Statistics Norway, 2012). Norway has a latitude range between 57° N and 81° N. As a result the country experiences extreme changes in different seasons of the year. So we would expect to find higher and different prevalence rates of SAD among different immigrant groups living in Norway. To our knowledge there is no previous research done on SAD among the immigrant groups living in Norway. The objectives of this study is to explore the prevalence rates of W-SAD, S-SAD and Summer-SAD and the associated risk and protective factors among five immigrant ethnic groups living in Oslo, Norway.

2. Methodology

2.1. Participants

The Oslo Immigrants Health Study (Innvandrer HUBRO), a large cross sectional epidemiological survey was conducted in 2002-2003 by the National Health Screening Service (now Norwegian Institute of Public Health—NIPH) and the University of Oslo (UiO). The study is described in detail elsewhere (Kumar et al., 2006, 2008; Sogaard et al., 2004). The target study population included residents of Oslo, who were born in Turkey, Sri Lanka, Iran, Pakistan and Vietnam between 1942 and 1971. A total population of 7890 met eligibility criteria and 7607 were reached by mail to participate in the study. 3019 gave written consent and participated in the study. The study was carried out from October 2002 to June 2003 and all the different ethnic groups were approached at the same time. The response rate for the total population was 39.7% and the response rates for individual countries of birth were; Turkey 32.7%, Sri Lanka 50.9%, Iran 38.8%, Pakistan 31.7% and Vietnam 39.5%. Non responders were sent one written reminder between 3 and 8 months after the first invitation letter. Ethnicity, age and gender were determined by using the Norwegian population register and only the first generation immigrants were included in the survey. Out of the total 3019 original participants (38.3% of the eligible participants) only 1047 have completed all the items in the SPAQ and also have lived in Norway for the past three or more years and were included in the analysis. A comparison of important characteristics such as mean age, mean duration of stay in Norway and percentages of female participants, between the total sample ($n=3019$), analyzed sample ($n=1047$) and the removed sample ($n=1972$) showed no significant variations between the three samples.

The approval and ethical clearance for the study was obtained from the Norwegian Data Inspectorate and the Regional Committee for Medical Research Ethics. All the participants gave written consent for the study prior to the data collection. Mass media were used to disseminate the information about the study and invitation letters were mailed to the eligible participants two weeks prior to the data collection. One main questionnaire and an additional supplementary questionnaire were completed by the participants and participants who have at least returned one questionnaire was included in the study.

The main questionnaire included questions on physical and mental health, social activities, education, employment, alcohol consumption and dietary and smoking habits. The questionnaire was in Norwegian and also included a translated version of the native language of each participant. The supplementary questionnaire (which was only in Norwegian and English) contained selected parts of the seasonal pattern assessment questionnaire (SPAQ).

2.2. Instruments

The SPAQ includes several different scales to investigate seasonal changes in mood and behavior (Magnusson et al., 1997; Magnusson, 2000; Magnusson and Partonen, 2005; Mersch et al., 1999; Rosenthal et al., 1987). Three scales of the SPAQ were included in this survey. One of the scales used was the seasonality score index (SSI). SSI investigates seasonal variation of six items; sleep, social activity, mood, weight, appetite and energy. Participants were asked to rate the degree of change they experience on the above items on a scale which ranges from 0 to 4 (no change to major change). The sum of the six items will give a total score range of 0–24 which is called the global seasonality score (GSS). In addition to this, participants were also asked to rate the degree to which they feel the seasonal changes as a problem (no problem to completely disabling problem). The third scale asked the subjects to rate which month of the year they felt seasonal changes worst. These three scales were used to calculate the prevalence rates of W-SAD, S-SAD and Summer-SAD (Kasper et al., 1989b; Magnusson, 2000; Rastad et al., 2005).

The classification of W-SAD, Summer-SAD and S-SAD according to the SPAQ was done using the following criteria. A total score of GSS 11 or more, with respondents feeling the seasonal changes to