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ORIGINAL ARTICLE

Risk of mental disorders in family reunification migrants and native Danes: a register-based historically prospective cohort study

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Abstract
Objectives Although family reunification migrants form a large proportion of migrants, their prevalence of mental disorders is unknown because research has focused on mixed groups of first generation immigrants and refugees. Our aim was to investigate the risk of mental disorders among family reunification migrants compared with that among native Danes.
Methods Family reunification migrants ($n = 31{,}923$) were matched on age and sex with native Danes ($n = 127{,}687$). Civil registration numbers were linked to the Danish Psychiatric Central Register to obtain data on diagnosis for all first-time psychiatric hospital contacts for migrants ($n = 972$) and native Danes ($n = 5{,}390$) between 1 January 1994 and 31 December 2003.
Results Overall family reunification migrants had a significantly lower risk of having a first-time psychiatric contact for mental disorders than did native Danes (RR = 0.78; 95% CI 0.71–0.87); specific risks of psychotic, affective and neurotic disorders did not differ except for migrant men, who had a higher risk of nervous disorder than that of native Danes (RR = 1.59; 95% CI 1.17; 2.17).
Conclusions Overall, family reunification migrants had a similar or lower risk of mental disorders compared with native Danes. The results may reflect true morbidity patterns or an underestimation of mental illness due to problems of access to care.

Keywords Migrants · Mental disorders · Access · Incidence · Barriers

Introduction

Family reunification migrants began arriving in Denmark in the 1960s and 1970s as relatives to labour migrants; this reunification continued in the 1980s and 1990s, adding to it relatives of refugees. Since 2001, approximately 50,000 family reunification migrants have arrived in Denmark, mainly from Iraq, Turkey, Somalia, Afghanistan and Pakistan (The Danish Immigration Service 2008). Family reunification migrants come to Denmark on three different legal grounds: (1) reunification with refugee; (2) reunification with (labour) immigrant; or (3) reunification with Danish or Nordic citizen. Family reunification migrants comprise parents, spouses or children of migrants. After family reunification, migrants have obtained a residence permit, they have 1 year to enter Denmark. Alternatively, they can apply for family reunification while staying in Denmark on a tourist or work visa. Family reunification migrants hold a residence permit when they register at the National Register in their local municipality. This implies that they are included under the Danish National Health Insurance and, therefore, have the same rights to healthcare as those of Danish citizens. Apart from a quarantine period of 6 weeks, this implies free access. There are no available guidelines from the Danish Immigration Service or the

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National Board of Health concerning the medical reception of newly arrived family reunification migrants. They are not officially introduced to the Danish healthcare system, but have to rely on their relatives and language schools for the introduction. This is in contrast with refugees, most of whom come to Denmark as asylum seekers and consequently receive medical screening upon arrival and an introduction to the Danish health care system by the Danish Red Cross, who are responsible for asylum seekers' living conditions and healthcare.

Most studies of the incidence of mental health problems of migrants living in Western countries concern either refugees alone (including asylum seekers) or a mix of first generation immigrants and refugees. Most often migrants are divided into these groups based on country of origin rather than on information from immigration authorities. For mixed groups of first generation migrants from non-Western countries, studies show higher incidences of psychotic disorders (Cantor-Graae and Selten 2005; Cantor-Graae et al. 2005; Selten et al. 2001; Westman et al. 2006) as well as affective and nervous disorders among migrants compared with non-migrants (de Wit et al. 2008; Helweg-Larsen et al. 2007; van der Wurff et al. 2004). The higher rates of mental health disorders have been attributed to a series of experiences related to the migration process (Bhugra 2004; Lindert et al. 2008). Pre-migration experiences include violence, trauma, poverty and torture. Migration experiences include trafficking under life threatening conditions and lack of access to medicine and healthcare. Finally, post-migration experiences in recipient countries encompass language barriers, cultural bereavement, marginalisation, isolation, discrimination and uncertainties about legal status. Family reunification migrants do not necessarily come from conflict areas; generally, they do not need to use illegal trafficking as a means for their journey. Therefore, their mental wellbeing would be expected to be primarily influenced by post-migration experiences related to life in exile.

To the best of our knowledge, no studies on mental disorders among first-generation migrants focus exclusively on family reunification migrants. Nevertheless, this group is interesting to study separately for the following reasons: (1) family reunification migrants form the majority of individuals who obtain residence permit in Denmark and many other Western countries; (2) family reunification migrants do not fulfil the refugee convention, although some may originate from conflict areas, and their mental health problems are, therefore, likely to vary from that of refugee populations; (3) unlike refugees, family reunification migrants in Denmark do not receive any systematic medical reception or introduction to healthcare services.

Consequently, our aim was to investigate the risk of mental disorders among family reunification migrants compared with that among native Danes. Our study is part of a research project where we have previously looked at the risk of mental disorders among refugees (Norredam et al. 2009). It is based on a cohort of all migrants who arrived in Denmark 1993–1999. The data allowed us to separate 31,923 family reunification migrants from refugees. We studied the overall rate of mental disorders according to the ICD-10 system and specific rates of psychotic, affective and neurotic disorders after a mean follow-up of 6 years.

Method

Study population

The study population was obtained through the Statistical Department at the Danish Immigration Service. Migrants who obtained residence permission as refugees or through family reunification in Denmark between 1 January 1993 and 31 December 1999 were included; 84,379 individuals were identified. Individuals who were <18 years ($n = 18,861$) when they obtained residence permission were excluded. Another 3,042 individuals were excluded due to missing civil registration numbers or because their civil registration numbers appeared more than once in the sample. The study population then totalled 62,476 individuals. A Danish-born reference population was identified through Statistics Denmark, which performed a 6:1 matching at population level on sex and age at start of residence permission in Denmark. Further, all controls were Danish-born residents with Danish-born parents to avoid including second generation migrants. Controls were used only once. Data from Statistics Denmark included: socioeconomic information, date of death and dates of emigrations. We then matched 4:1 on an individual level on age and sex through a random sampling procedure. This was done to identify to which case every single control belonged. We were able to make a 4:1 matching for all family reunification migrants, which amounted to a total cohort of 159,610 individuals: 31,923 family reunification migrants and 127,687 controls. The mean follow-up time was approximately 6 years for both family reunification migrants and Danish-born controls. Mean follow-up time was defined for both family reunification migrants and their corresponding controls from start of residence permission for the family reunification migrant until one of the following four events: (1) start date of first psychiatric contact; (2) study closure (31 December 2003); (3) date of death; (4) date of emigration from Denmark.

Data collection and measures

The civil registration numbers of the study cohort were linked to the Danish Psychiatric Central Register, which

contains data on all psychiatric hospital contacts in Denmark. Subsequently, all individuals in the cohort who had had an inpatient or outpatient psychiatric hospital contact between 1 January 1994 and 31 December 2003 were identified. Diagnoses were based on the patient's diagnosis upon discharge according to the ICD-10. The Danish Psychiatric Central Register began using the ICD-10 coding system from 1 January 1994, a change from the previously used ICD-8 coding system. As no official translation exists from ICD-8 to ICD-10, we decided to include only ICD-10 contacts from 1 January 1994 and onwards in the study. We pooled inpatient and outpatient contacts in our analyses. Inpatient contacts were registered from 1 January 1994 by the Danish Psychiatric Central Register, whereas outpatient contacts were not included in the register, and consequently not in our study, until 1 January 1995.

As in similar studies we used first-time psychiatric hospital contact as a way of measuring the existence of mental disorder in the cohort (Leao et al. 2006; Mitter et al. 2004). In reality this implies a first-time contact after inclusion into the study for both family reunification migrants and controls. Thus, our definition of first psychiatric contact is as a mixture of true first psychiatric contacts and readmissions. When all contacts with missing information on diagnosis code or diagnosis date were excluded, 6,362 first-time psychiatric contacts were registered: 972 for family reunification migrants and 5,390 for Danish-born controls. We studied all psychiatric disorders combined and the following diagnostic main groups specifically: psychotic disorders (F20–F29), affective disorders (F30–F39) and nervous disorders (F40–F48).

Analysis

Statistical analyses were performed for all mental disorders combined and for psychotic disorders, affective disorders and nervous disorders separately. Incidence of diagnosis on first admission was estimated as cases pr 10,000 person years at risk in the relevant cohort segments. The response measures are in the form of rate ratios and a relevant analysis tool is Poisson regression analysis. This analysis needs to take the matching (by age and sex) into account, and a full analysis would involve postulating a separate parameter for each stratum. Although such an analysis would be valid (Stijnen and van Houwelingen 1993), we approximated the full matched analysis by assuming that the each stratum effect could be fully described by the age and sex of the stratum. Thus, differences between incidences for family reunification migrants and Danish-born controls were analysed by fitting Poisson regression models to the data, adjusting by the matching variables age and sex.

First, family reunification migrants were divided into the seven largest geographical areas of origin according to the WHO guidelines: Africa (Sub-Saharan), Asia, East Europe (excl. former Yugoslavia), former Yugoslavia, Iraq, Middle East (incl. North Africa), and other Western countries (incl. South and Central America).

A Poisson regression model including residence status (Danish born, family reunited migrant), sex, age and region of origin was fitted to the data. For each of the models (all diagnoses, psychotic disorders, affective disorders and nervous disorders) the following two-term interactions were tested: sex $\times$ residence status, sex $\times$ age, and age $\times$ residence status. The influence of region of origin was studied by a Poisson regression model adjusted by sex and age, using a modification of region of origin including a new category for those born in Denmark. Adjusted rate ratios and 95% CIs were evaluated by Poisson regression with log person years as offset and with a log link. This was done using PROC GENMOD in SAS version 8.

Results

Table 1 shows the characteristics of the family reunification migrants and their corresponding Danish-born controls. The cohort had a mean age of about 27 years at entry. It is noteworthy that the cohort was followed for about 6 years, and that about one-third of the family reunited migrants came from the Middle East (incl. North Africa). Table 1 also shows that the percentage of first-time psychiatric contacts was 3.0% among family reunification migrants and 4.2% among native Danes.

When looking at all psychiatric disorders combined, the risk of having a mental disorder was significantly lower for family reunification migrants (RR = 0.78; 95% CI 0.71; 0.87) than for native Danes, adjusted for age, sex and geographical region of origin. None of the tested interactions was significant at the 5% level. Table 2 shows the rate ratios by region of origin adjusted by sex and age. The results show a significantly lower risk of having a mental disorder for family reunification migrants from Asia (RR = 0.39; 95% CI 0.30; 0.50) and from the Middle East (RR = 0.76; 95% CI 0.66; 0.88) than for native Danes, while compared with native Danes, no significant differences were observed for the rest of the subgroups.

For psychotic disorders only, no significant difference was observed for family reunification migrants (RR = 1.02; 95% CI 0.85; 1.22) compared with native Danes. None of the tested interactions was significant at the 5% level. The model studying the effect of geographical origin showed that only migrants from Africa (Sub-Saharan) had an increased risk of having a psychotic disorder (RR = 1.79; 95% CI 1.24; 2.60) compared with native

Table 1 Characteristics of the family reunited individuals and their corresponding Danish-born controls (total $n = 159{,}610$)

Population characteristics	Family reunited ($N = 31{,}923$)	Native Danes ($N = 127{,}687$)
Age at entry (mean and quartiles)	27.42 (23.17; 33.66)	27.43 (23.16; 33.64)
Follow-up (mean and quartiles)	6.13 (4.53; 8.03)	6.64 (5.14; 8.34)
Sex % (n)		
Female	63.8 (20,366)	63.8 (81,462)
Geographical origin % (n)		
Africa (Sub-Saharan)	11.2 (3,567)	
Asia	18.6 (5,951)	
Eastern Europe (excl. former Yugo)	11.2 (3,581)	
Former Yugoslavia	5.9 (1,894)	
Iraq	4.3 (1,365)	
Middle East (incl. North Africa)	33.8 (10,776)	
Western countries (incl. S-C Amercia)	15.0 (4,789)	
Events during follow-up % (n)		
First-time psychiatric contacts	3.0 (972)	4.2 (5,390)
Deaths	0.8 (244)	1.3 (1,711)
Emigrations	17.9 (5,701)	4.4 (5,568)
Population at study closure	78.3 (25,006)	90.1 (115,018)

Table 2 Relative risks with 95% CI of having a first-time psychiatric contact for all psychiatric ICD-10 categories combined (according to ICD-10) among family reunited migrants compared with native Danes by region of origin, adjusted by sex and age

Geographical origin	All psychiatric ICD-10 categories combined	
	RR (95% CI)	*N*
Native Danes	1.00	5,390
Africa (Sub-Saharan)	0.79 (0.62; 1.01)	106
Asia	0.39 (0.30; 0.50)	96
East Europe	1.04 (0.84; 1.28)	148
Former Yugoslavia	0.81 (0.59; 1.11)	62
Iraq	1.29 (0.96; 1.74)	71
Middle East (incl. North Africa)	0.76 (0.66; 0.88)	335
Western countries (incl. South America)	1.06 (0.86; 1.30)	154

N number of psychiatric contacts

Danes (Table 3). Compared with native Danes, no significant differences were observed for the rest of the regions (Table 3).

For affective disorders, there was a borderline significant tendency for family reunification migrants (RR = 0.81; 95% CI 0.65; 1.00) towards having fewer affective disorders diagnoses compared with native Danes. No significant interactions were found. Contrasting findings were obtained when looking at region of origin as family reunited migrants from Africa (Sub-Saharan) (RR = 0.81; 95% CI 0.65; 1.00), Asia (RR = 0.34; 95% CI 0.21; 0.55) and the Middle East (RR = 0.73; 95% CI 0.56; 0.95) showed a significantly decreased risk of affective disorders compared with native Danes, whereas individuals from Iraq (RR = 2.12; 95% CI 1.40; 3.20) and other Western countries (RR = 1.61; 95% CI 1.18; 2.19) showed the opposite tendencies (Table 3).

For nervous disorders, the interaction gender × residence status was found significant and therefore included in the analysis. The results show that for female family reunification migrants there was no significant difference in the rate of nervous disorders compared with female native Danes (RR = 0.99; 95% CI 0.82; 1.19). However, for migrant men a significantly higher rate ratio was found compared with native Danes (RR = 1.59; 95% CI 1.17; 2.17). For region of origin, adjusted by sex and age, the results (Table 3) showed no significant differences except for migrants from Asia, who had a decreased risk of nervous disorders (RR = 0.44; 95% CI 0.27; 0.71); and migrants from Iraq, who had a significantly increased rate of mental disorders (RR = 2.18; 95% CI 1.39; 3.42). No significant interactions were found when introducing the region of origin.

Discussion

The main finding of the study was that overall family reunification migrants had a significantly lower risk of having a first-time contact for all psychiatric disorders combined than did native Danes after a mean follow-up of 6 years. For psychotic disorders, affective disorders and nervous disorders specifically, we found no significant differences for all family reunification migrants compared

Table 3 Relative risks with 95% CI of having a first-time psychiatric contact for either a psychotic, affective or nervous disorder (according to ICD-10) among family reunited migrants compared with native Danes by region of origin, adjusted by age and sex

Geographical origin	Psychotic disorders (F20–F29)		Affective disorders (F30–F39)		Nervous disorders (F40–F48)	
	RR (95% CI)	*N*	RR (95% CI)	*N*	RR (95% CI)	*N*
Native Danes	1.00	643	1.00	1,016	1.00	1,521
Africa (Sub-Saharan)	1.79 (1.24; 2.60)	29	0.20 (0.08; 2.49)	5	0.89 (0.56; 1.43)	34
Asia	0.91 (0.60; 1.38)	23	0.34 (0.21; 0.55)	17	0.44 (0.27; 0.71)	33
East Europe	1.23 (0.77; 1.97)	18	1.05 (0.73; 1.50)	31	1.33 (0.92; 1.91)	58
Former Yugoslavia	0.85 (0.42; 1.70)	8	0.93 (0.54; 1.60)	13	1.28 (0.75; 2.19)	26
Iraq	0.36 (0.09; 1.46)	2	2.12 (1.40; 3.20)	23	2.18 (1.39; 3.42)	37
Middle East (incl. North Africa)	1.02 (0.77; 1.35)	54	0.73 (0.56; 0.95)	56	1.25 (0.99; 1.58)	148
Western countries (incl. South America)	0.67 (0.40; 1.15)	14	1.61 (1.18; 2.19)	42	1.42 (0.97; 2.08)	52

N number of psychiatric contacts

with native Danes, apart from migrant men who had a significantly higher risk of being diagnosed with a nervous disorder. When divided by country of origin, the most consistent tendencies were that migrants from Asia had lower frequencies of contact for mental disorders, whereas migrants from Iraq showed the opposite tendency. No other subgroup showed any consistent differences from native Danes.

Methodological strengths and limitations

Our study used the unique Danish national registers to link data on migration to data on psychiatric inpatient and outpatient care. This enabled us to identify a large cohort of family reunification migrants based on specific information on migrant type from the immigration authorities. Second, the register-based approach allowed us to use the professional psychiatric discharge diagnoses based on ICD-10 codes instead of interview or self-report data using simple psychiatric survey tools. Third, the design allowed us to calculate contact rates during an average of 6 years' follow-up rather than using only prevalence rates, and enabled us to compare directly with a matched group of native Danes. Fourth, we could divide family reunification migrants according to seven geographical subgroups.

There are several limitations to consider when interpreting the study's results. First, our analyses according to region of origin are based on relatively small samples; however, this is also the case in other work using register studies (Leao et al. 2006). This represents a common dilemma within epidemiological research on migrants' health: researchers wish to subdivide migrants into several meaningful categories to enhance valid interpretations of results; subsequently, this dilutes the statistical power of the analyses. Data collection was limited by outpatient contacts not being available until 1995. Ideally, we would have included outpatient contacts from 1994, as we did for inpatients. It is possible the lack of outpatient data from 1994 led to underestimation of morbidity rates for both family reunification migrants and native Danes; however, there is no reason to believe that this underestimation differed between the two groups. Moreover, as done previously, we used diagnosis upon discharge of 'first-time' contacts as a measure of the risk of mental disorders among refugees compared with native Danes (Leao et al. 2006; Mitter et al. 2004). We decided on this after our initial analyses showed that only 15–20% of the treated individuals changed from one (major) diagnosis group to another after their first contact. Consequently, we considered first-time contact a valid indicator of the person's true mental health problem over time. Nevertheless, as mentioned, it may not be a 'true first-time' contact for native Danes as they may have had contacts before 1994 when our data collection began. Conversely, this is not necessarily a bias, as family reunification migrants may also have had previous psychiatric hospital contact in their country of origin. However, we do not know the true balance between 'real' first time contacts and readmission in the two groups and, therefore, cannot exclude that an alternative interpretation of our results would be that compared to native Danes family reunification have a higher risk of first psychiatric contacts and a lower risk of readmission. Finally, we did not control for socioeconomic status because register data about this for first generation migrants are not considered valid.

Our findings in perspective

The literature on mental health disorders among migrants in European countries generally shows higher rates compared with those among non-migrants, the most consistent being higher rates of schizophrenia and other psychotic disorders

among migrants (Cantor-Graae et al. 2005; Harrison et al. 1997; Leao et al. 2006; Selten et al. 2001; Westman et al. 2006; Zolkowska 2001) In a recent meta-analysis of the literature, it was found that first generation migrants had a 2.7-fold increased risk of developing schizophrenia (Cantor-Graae and Selten 2005). In a Danish context, Helweg-Larsen et al. (2007) showed higher rates of mental disorders across several diagnostic categories among first generation migrants compared with those among non-migrants; and Cantor-Graae et al. (2003) specifically showed a 2.4-fold increased risk of developing schizophrenia among first generation migrants in Denmark—the results were most striking for migrants form the Middle East (3.75) and Africa (3.85). Although few studies concern the risk of affective disorders and nervous disorders (de Wit et al. 2008; Levecque et al. 2007; Westman et al. 2006), they likewise show a tendency towards higher rates of illness among first generation migrants compared with non-migrants, albeit the results vary according to country of origin. The mentioned study populations are, however, not directly comparable with our study population because they represent a mix of first generation migrants from non-Western countries with both refugee and immigrant background. Only one epidemiological study (Leao et al. 2006) divides migrants into refugees and labour migrants. The latter group includes migrants who were 'born in labour immigrant countries', thus encompassing traditional labour migrants as well as family reunification migrants, which makes it somewhat more similar to our study group but still not identical. The findings on mental disorders among mixed groups of first generation migrants vary from studies focusing solely on rates among refugee populations (Hermansson et al. 2002; Lie 2002; Norredam et al. 2009; Steel et al. 2002). These studies show even higher rates of mental disorders compared with those of non-migrants; not surprisingly, the highest rates among refugees are seen for nervous disorders, including post-traumatic stress disorder (PTSD). In a recent study (Norredam et al. 2009) of refugees in Denmark deriving from the same cohort as the current study population of family reunification migrants, we found a significantly increased risk of having a first-time psychiatric contact for combined and specific disorders among refugees compared with non-migrants. Our finding that Iraqi men had a higher risk of nervous disorders most likely stems from their coming from conflict stricken areas and, therefore, being more likely to be traumatised, as is the case for refugees. Our contrasting finding that Asian migrants fare significantly better than non-migrants is supported by other studies (Norredam et al. 2009; Steel et al. 2002). Presumably, rates of mental disorders in our cohort would have been more in line with those of the aforementioned Danish and European register-based studies of 'mixed population' if we had not excluded refugees.

Why do family reunification migrants have a lower risk of mental disorders?

What can explain our overall finding that family reunification migrants have similar or lower risks of having a first-time psychiatric contact compared with native Danes? We have identified two overall explanations. First, our results may depict true morbidity patterns reflecting that family reunification migrants are less vulnerable to mental health problems. As already mentioned, family reunification migrants are not exposed to the same pre-migration and migration stressors as are refugees. In addition, protective factors may include family reunification migrants' lack of exposure to the pre-migration and migration stages of the migration process. Also, in contrast with forced migrants (i.e. refugees), family reunification migrants voluntarily choose to migrate to Denmark at their relatives' request. In this process, it is likely that relatives in exile do not select family members with mental health problems as this may constitute a burden. Moreover, family reunification migrants arriving in Denmark and other Western countries enjoy the social support from having family members who are already anchored in the recipient society and on whom they may rely for help. Indeed, social support has been shown as critically important in preventing depressive symptoms (Bhugra 2004). In our study, the mentioned protective factors appear to outweigh post-migration risk factors for mental health problems including language problems, discrimination and marginalisation.

Conversely, our results may be due to an underestimation of mental health disorders among family reunification migrants. An underestimation may be caused by lack of adequate diagnosis due to obstacles to migrants' help-seeking process. This argument is supported by international studies documenting lower utilisation of mental healthcare services among migrants compared with non-migrants (Kirmayer et al. 2007; Linderet al. 2008) and more complex pathways to specialist care (Bhui et al. 2003). Studies find various barriers to mental healthcare. A Dutch study found that Turkish and Moroccan first generation migrants were reluctant to report mental health problems, focusing on somatic symptoms instead (Levecque et al. 2007). Another study found that migrant populations have a preference for solving their problems on their own (Fassaert et al. 2009). Furthermore, doctor–patient communication and lack of ethnic similarity in the therapist–patient interaction may complicate help-seeking for mental health problems (Knipscheer and Kleber 2004a, b; Knipscheer and Kleber 2005). In a Danish context, a barrier to timely diagnosis may also be that family reunification migrants are not offered medical screening upon arrival for mental health problems, unlike refugees, and that they are not systematically introduced to the Danish healthcare system.

Conclusions

Our study contributes to the literature in that we singled out family reunification migrants based on clear criteria. In contrast to the literature, our study is striking because we did not find any overall increased risk of mental disorders among migrants. The results may reflect true morbidity patterns implying that protective factors specific for family reunification migrants outweigh more well-known stressors for mental health problems related to life in exile. Alternatively, our results stem from an underestimation of morbidity due to problems of access to care. Both explanations require further investigation to illuminate our findings.

Conflict of interest statement None.

References

Bhugra D (2004) Migration and mental health. Acta Psychiatr Scand 109(4):243–258

Bhui K, Stansfeld S, Hull S, Priebe S, Mole F, Feder G (2003) Ethnic variations in pathways to and use of specialist mental health services in the UK. Systematic review. Br J Psychiatry 182:105–116

Cantor-Graae E, Selten JP (2005) Schizophrenia and migration: a meta-analysis and review. Am J Psychiatry 162(1):12–24

Cantor-Graae E, Pedersen CB, McNeil TF, Mortensen PB (2003) Migration as a risk factor for schizophrenia: a Danish population-based cohort study. Br J Psychiatry 182:117–122

Cantor-Graae E, Zolkowska K, McNeil TF (2005) Increased risk of psychotic disorder among immigrants in Malmo: a 3-year first-contact study. Psychol Med 35(8):1155–1163

de Wit MA, Tuinebreijer WC, Dekker J, Beekman AJ, Gorissen WH, Schrier AC, Penninx BW, Komproe IH, Verhoeff AP (2008) Depressive and anxiety disorders in different ethnic groups: a population based study among native Dutch, and Turkish, Moroccan and Surinamese migrants in Amsterdam. Soc Psychiatry Psychiatr Epidemiol 43(11):905–912

Fassaert T, de Wit MA, Tuinebreijer WC, Verhoeff AP, Beekman AT, Dekker J (2009) Perceived need for mental health care among non-western labour migrants. Soc Psychiatry Psychiatr Epidemiol 44(3):208–216

Harrison G, Glazebrook C, Brewin J, Cantwell R, Dalkin T, Fox R, Jones P, Medley I (1997) Increased incidence of psychotic disorders in migrants from the Caribbean to the United Kingdom. Psychol Med 27(4):799–806

Helweg-Larsen K, Kastrup M, Baez A, Flachs EM (2007) Ethnic differences in contact patterns in psychiatry—a registerbased study [In Danish]. The National Institute of Public Health, Copenhagen

Hermansson AC, Timpka T, Thyberg M (2002) The mental health of war-wounded refugees: an 8-year follow-up. J Nerv Ment Dis 190(6):374–380

Kirmayer LJ, Weinfeld M, Burgos G, du Fort GG, Lasry JC, Young A (2007) Use of health care services for psychological distress by immigrants in an urban multicultural milieu. Can J Psychiatry 52(5):295–304

Knipscheer JW, Kleber RJ (2004a) A need for ethnic similarity in the therapist–patient interaction? Mediterranean migrants in Dutch mental-health care. J Clin Psychol 60(6):543–554

Knipscheer JW, Kleber RJ (2004b) The importance of ethnic similarity in the therapist–patient dyad among Surinamese migrants in Dutch mental health care. Psychol Psychother 77(Pt 2):273–278

Knipscheer JW, Kleber RJ (2005) Help-seeking behaviour regarding mental health problems of Mediterranean migrants in the Netherlands: familiarity with care, consultation attitude and use of services. Int J Soc Psychiatry 51(4):372–382

Leao TS, Sundquist J, Frank G, Johansson LM, Johansson SE, Sundquist K (2006) Incidence of schizophrenia or other psychoses in first- and second-generation immigrants: a national cohort study. J Nerv Ment Dis 194(1):27–33

Levecque K, Lodewyckx I, Vranken J (2007) Depression and generalised anxiety in the general population in Belgium: a comparison between native and immigrant groups. J Affect Disord 97(1–3):229–239

Lie B (2002) A 3-year follow-up study of psychosocial functioning and general symptoms in settled refugees. Acta Psychiatr Scand 106(6):415–425

Lindert J, Schouler-Ocak M, Heinz A, Priebe S (2008) Mental health, health care utilisation of migrants in Europe. Eur Psychiatry 23(Suppl 1):14–20

Mitter PR, Krishnan S, Bell P, Stewart R, Howard RJ (2004) The effect of ethnicity and gender on first-contact rates for schizophrenia-like psychosis in Bangladeshi, Black and White elders in Tower Hamlets, London. Int J Geriatr Psychiatry 19(3):286–290

Norredam M, Garcia-Lopez A, Keiding N, Krasnik A (2009) Risk of mental disorders in refugees and native Danes: a register-based historical prospective cohort study. Soc Psychiatry Psychiatr Epidemiol 44(12):1023–1029

Selten JP, Veen N, Feller W, Blom JD, Schols D, Camoenie W, Oolders J, Van der Velden, Hoek HW, Rivero VM, van der Kahn R GY (2001) Incidence of psychotic disorders in immigrant groups to The Netherlands. Br J Psychiatry 178:367–372

Steel Z, Silove D, Phan T, Bauman A (2002) Long-term effect of psychological trauma on the mental health of Vietnamese refugees resettled in Australia: a population-based study. Lancet 360(9339):1056–1062

Stijnen T, van Houwelingen HC (1993) Relative risk, risk difference and rate difference models for sparse stratified data: a psoeudo-likelihood approach. Statist Med 12(24):2285–2303

The Danish Immigration Service (2008) Facts and figures on migration 2008. The Danish Immigration Service, Copenhagen

van der Wurff FB, Beekman AT, Dijkshoorn H, Spijker JA, Smits CH, Stek ML, Verhoeff A (2004) Prevalence and risk-factors for depression in elderly Turkish and Moroccan migrants in The Netherlands. J Affect Disord 83(1):33–41

Westman J, Johansson LM, Sundquist K (2006) Country of birth and hospital admission rates for mental disorders: a cohort study of 4.5 million men and women in Sweden. Eur Psychiatry 21(5):307–314

Zolkowska K, Cantor-Graae E, McNeil TF (2001) Increased rates of psychosis among immigrants to Sweden: is migration a risk factor for psychosis? Psychol Med 31(4):669–678