

Incidence of schizophrenia among ethnic minorities in the Netherlands: A four-year first-contact study

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Abstract

There is only one previous report on the first-contact incidence of schizophrenia among immigrants in the Netherlands, which was based on a small number of cases, particularly for second generation immigrants. We conducted another two-year first-contact incidence study in the same geographical area, combined the data of both studies and compared risks over all four years. The incidence of schizophrenia was increased for all first generation non-Western immigrants. The risk was particularly high for second generation immigrants: the age- and gender-adjusted incidence rate ratio was 5.8 (95% CI, 2.9–11.4) for Moroccans, 2.9 (1.6–5.0) for Surinamese, 2.3 (1.0–5.4) for Turks, and 3.5 (1.8–6.8) for immigrants from other non-Western countries.

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1. Introduction

Studies from the United Kingdom and Scandinavia have reported a very high incidence of schizophrenia among several immigrant groups (Cantor-Graae and Selten, 2005; Kirkbride et al., 2006). A two-year first-contact study in The Hague, the Netherlands, found an increased incidence of schizophrenia among immigrants from Surinam and among male immigrants from Morocco (Selten et al., 2001). The risks were not

significantly increased for Moroccan or Turkish women, or for immigrants from Western countries. However, these results were difficult to interpret, because the number of cases was small, particularly for the second generation.

As the high schizophrenia incidence rates among immigrants are still poorly understood (Sharpley et al., 2001) and have been questioned (Strakowski et al., 1996; Fernando, 2003; Arnold et al., 2004), it is important to clarify which immigrant groups are at higher risk, and to what extent second generation immigrants are affected. We therefore conducted a second two-year first-contact incidence study in The Hague and combined the results of both studies. We compared the risks of schizophrenic disorders (DSM IV:

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schizophrenia, schizophreniform disorder, schizoaffective disorder) in immigrants with those in native Dutch persons.

2. Method

2.1. Classification of ethnicity

The municipality of The Hague classifies ethnicity according to citizens' country of birth and to that of their parents. Immigrants include both those who are foreign-born (first generation) and those who have at least one foreign-born parent (second generation). Seven categories of ethnicity are used: (1) Morocco, (2) Surinam, (3) Turkey, (4) the Netherlands Antilles, (5) other non-Western countries, (6) Western or westernised countries (Western or Northern Europe, the former Yugoslavia, the USA, Canada, Australia, New Zealand, Japan or Israel), and (7) native Dutch (those who are Dutch-born and whose parents were also born in the Netherlands). The municipal authorities provided population data, including ethnicity, age (five-year groups) and sex, for the years of the study.

2.2. Subjects

The criteria for inclusion and exclusion were similar to those used in the World Health Organization Ten-Country Study (Jablensky et al., 1992). Subjects whose residence in The Hague was shorter than six months or who lived there illegally were excluded. The study was conducted in two periods (April 1, 1997–April 1, 1999 and October 1, 2000–October 1, 2002). There was collaboration with the local general practitioners, psychiatrists and residents in psychiatry, to access every possible case. Over the four years of the study, 394 citizens of The Hague aged 15–54 years made first contact with a physician for a (suspected) psychotic disorder. Thirty-three subjects were excluded because of a diagnosis of a substance-induced psychotic disorder, a psychotic disorder due to a somatic condition, or a non-psychotic disorder. Participants gave written informed consent for the study. The study was approved by the ethics committee of University Medical Centre Utrecht.

2.3. Diagnostic protocol

The patients were interviewed by Dutch residents in psychiatry (first study: JDB and NV; second study: WV), using the Dutch translation of a semi-structured diagnostic interview, the Comprehensive Assessment of Symptoms and History (CASH) (Andreasen et al.,

1992). Relatives were interviewed by trained nurses ($N=4$) using the Instrument for the Retrospective Assessment of the Onset of Schizophrenia (IRAOS) (Häfner et al., 1992). In addition, the residents asked the treating physicians for detailed clinical information. Using information derived from CASH, IRAOS and the medical file, the residents compiled a narrative history of the patient's illness. For the patients who refused the interviews, they constructed a history using anonymised information from the responsible physician. During a diagnostic meeting, two psychiatrists made a consensus DSM-IV diagnosis on the basis of the narrative history.

2.4. Blinding for ethnicity

During the first period (1997–1999) the psychiatrists who made the DSM-IV diagnosis were blind for ethnicity, because any clue to a patient's ethnicity had been omitted from the narrative history, to ensure that their perceptions of immigrants would not influence their diagnoses. During the second period (2000–2002), information about the patient's ethnicity was included. The psychiatrists could thus take into account culturally based phenomena that could be mistaken for psychopathology.

2.5. Data analysis

For the analysis of the combined data, the number of cases from the two periods was added, as was the number of person-years. First-contact rates were calculated by dividing the number of cases by the number of person-years (ages 15 to 54). Incidence rate ratios (IRR) of schizophrenic disorders, adjusted for (five years) age-group and sex, and 95% confidence intervals (95% CI) were calculated by Poisson regression analysis, using the STATA statistical program, version 9.0.

3. Results

3.1. First period, 1997–1999

The results of the first period have been reported previously (Selten et al., 2001).

3.2. Second period, 2000–2002

One hundred ninety-seven subjects made first contact during this two-year period. Diagnostic interviews were conducted in 155 cases (78.7%) and interviews with key informants in 132 cases (67.0%). A consensus DSM-IV diagnosis could be made for all but one subject. One

hundred nineteen subjects (87 men, 32 women) were diagnosed with a schizophrenic disorder. Among these 119 subjects, the mean age at first contact was 26.7 years (SD, 8.0) for men and 27.9 years (SD, 9.0) for women. The crude first-contact rate for schizophrenic disorders was 2.21 (95% CI, 1.93–2.50) per 10,000 population. For Dutch natives, this rate was 1.27 (95% CI, 0.99–1.55) per 10,000 population.

3.3. Periods combined, 1997–1999 and 2000–2002

Table 1 shows the age-adjusted incidence rate ratios for the immigrant groups, by sex and generation. Among immigrants from non-Western countries (Morocco, Surinam, Turkey, the Netherlands Antilles and other non-Western countries combined), the incidence rate was significantly higher for the second generation than for the first (age- and gender-adjusted IRR, 1.53; 95% CI, 1.02–2.31).

4. Discussion

The risk of schizophrenic disorders was increased for first and second generation immigrants from Morocco,

Surinam, and other non-Western countries. Second generation immigrants from these groups had higher risks than those of the first generation.

Remarkably, whereas the risk was very high for first and second generation Moroccan males, the risk for Moroccan females, first or second generation, was not significantly increased. We have no ready explanation for the low number of Moroccan women with a schizophrenic disorder, but the reason is unlikely to be that they avoid the mental health services. They visit their general practitioner more often than Dutch women do (Van der Most van Spijk, 1991), they are only somewhat less frequently in contact with the outpatient departments of psychiatric services than Dutch women are and more often than Surinamese or Antillean women (Dieperink et al., 2002).

4.1. Comparisons between the first and the second periods

The first-contact rate of schizophrenic disorders obtained in the second study (2.2 per 10,000; 95% CI, 1.9–2.7) was not significantly higher than that of the first (2.1 per 10,000). The IRRs for immigrants groups

Table 1

Incidence rate ratios (IRRs) of first contact for schizophrenic disorders^a in ethnic groups in The Hague, April 1, 1997 to April 1, 1999 plus October 1, 2000 to October 1, 2002

Population segment	Person-years at risk		Cases		Schizophrenic disorders		
	Male	Female	Male	Female	IRR ^b (95%CI)		
					Male	Female	Gender-adjusted
<i>First generation, aged 15–54 years</i>							
Immigrants, total	172,070	162,143	74	28	2.3 (1.6–3.3)	2.1 (1.2–3.6)	2.3 (1.7–3.0)
Moroccans	22,212	17,480	24	1	5.2 (3.2–8.4)	0.6 (0.1–4.6)	4.0 (2.5–6.3)
Surinamese	43,486	47,183	15	13	2.1 (1.2–3.7)	3.6 (1.8–7.0)	2.6 (1.7–4.0)
Netherlands Antilleans	9036	9311	4	1	2.2 (0.8–5.9)	1.2 (0.2–9.1)	1.9 (0.8–4.6)
Turks	29,199	23,592	8	3	1.4 (0.7–2.9)	1.4 (0.4–4.7)	1.4 (0.7–2.6)
Others, non-Western ^c	44,488	39,874	19	7	2.3 (1.4–3.9)	2.1 (0.9–4.9)	2.2 (1.4–3.5)
Western or Westernised ^d	23,649	24,703	4	3	1.0 (0.4–2.7)	1.5 (0.5–5.1)	1.2 (0.5–2.5)
Native Dutch ^e	316,908	305,822	55	24	1.0	1.0	1.0
<i>Second generation, aged 15–54 years</i>							
Immigrants, total	39,288	38,665	33	15	2.2 (1.4–3.5)	3.3 (1.6–6.6)	2.5 (1.7–3.7)
Moroccans	2919	3075	9	1	6.8 (3.3–14.1)	2.4 (0.3–17.9)	5.8 (2.9–11.4)
Surinamese	10,121	9942	10	5	2.5 (1.2–5.0)	3.9 (1.4–10.6)	2.9 (1.6–5.0)
Netherlands Antilleans	1687	1582	1	0	1.9 (0.3–14.1)	n.a.	1.4 (0.2–10.4)
Turks	4721	4685	4	2	2.0 (0.7–5.6)	3.2 (0.7–13.9)	2.3 (1.0–5.4)
Others, non-Western	6397	6348	5	5	2.3 (0.9–5.8)	6.9 (2.5–18.5)	3.5 (1.8–6.8)
Western or westernised	13,443	13,033	4	2	1.5 (0.6–4.2)	1.8 (0.4–7.8)	1.6 (0.7–3.7)
Native Dutch	316,908	305,822	55	24	1.0	1.0	1.0

^a Includes DSM-IV categories schizophrenia, schizophreniform disorder and schizoaffective disorder.

^b Adjusted for age.

^c Born in any country other than listed in footnotes d and e.

^d Born in Western, Northern, or Southern Europe (including the former Yugoslavia), the USA, Canada, Australia, New Zealand, Japan or Israel.

^e Born in the Netherlands and both parents born in the Netherlands.

obtained in both studies were similar, and their confidence intervals overlapped.

4.2. Strengths and limitations

A strength of our study is the reliability of both the numerators (cases) and the denominators (person-years). The incident cases were derived from all sources of treatment in a defined geographical area. The person-years were derived from a comprehensive municipal registration system. Registration with municipal authorities is compulsory for all individuals residing legally in the Netherlands and a prerequisite for obtaining essential documents and financial aid (e.g. income support).

A second strength of both studies is the use of two different diagnostic methods. The psychiatrists who made the diagnosis during the first study were not involved in the treatment of the patients. Consequently, the researchers could keep them blind for ethnicity. During the second study, the same diagnostic protocol was used, with the only modification that the diagnoses were made by the responsible psychiatrists, who knew the patients well and were aware of their cultural background. Thus, we could explore the possibility that Dutch psychiatrists have a tendency to overdiagnose schizophrenic disorders in non-Dutch subjects. There was no evidence of this, because the proportions of immigrants that received a diagnosis of a schizophrenic disorder were similar in both the first and the second period (65% and 71% respectively; Pearson χ^2 , 0.76; $df=1$; $p=0.38$).

A possible limitation of the study is that the diagnostic interviews were conducted by native Dutch residents, who were not familiar with all the cultures of the subjects. However, semi-structured interviews have been shown to minimize misdiagnosis of immigrant patients (Neighbors et al., 1999). In addition, when asked (in the first period of the study), the large majority of relatives viewed the symptoms as clearly abnormal.

4.3. Mechanism

Hypotheses to explain the findings must take into consideration that the rates of schizophrenia were increased in both first and second generation immigrants. Hypotheses which include psychosocial factors are therefore more viable than hypotheses that focus on a single biological or genetic factor.

Given the reports elsewhere of extremely high risks for black immigrants (Cantor-Graae and Selten, 2005), it is of interest that the highest risk obtained in this study

applies to a non-black minority group, i.e., Moroccan males. Moroccan immigrants to the Netherlands have greater difficulties in their process of acculturation to Dutch society than Surinamese or Antillean immigrants and their relationship with the Dutch population has become increasingly problematic (Dagevos et al., 2003). This suggests that the experience of social defeat (Selten and Cantor-Graae, 2005) and acculturative stress (Berry et al., 2002) might be important factors here. These concepts, encompassing experiences of a subordinate position, 'outsider status' (Selten and Cantor-Graae, 2005), marginalization, perceived discrimination, and a weak ethnic identity (Berry et al., 2002) are likely to operate increasingly across both generations of immigrants.

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