

Ethnicity, self reported psychiatric illness, and intake of psychotropic drugs in five ethnic groups in Sweden

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Abstract

Study objective—This study hypothesises that the presumed increased risk of self reported longstanding psychiatric illness and intake of psychotropic drugs among Iranian, Chilean, Turkish, and Kurdish adults, when these groups are compared with Polish adults, can be explained by living alone, poor acculturation, unemployment, and low sense of coherence.

Design—Data from a national sample of immigrants/refugees, who were between the ages of 20–44 years old, upon their arrival in Sweden between 1980 and 1989. Unconditional logistic regression was used in the statistical modelling.

Setting—Sweden.

Participants—1059 female and 921 male migrants from Iran, Chile, Turkey, Kurdistan and Poland and a random sample of 3001 Swedes, all between the ages of 27–60 years, were interviewed in 1996 by Statistics Sweden.

Main results—Compared with Swedes, all immigrants had an increased risk of self reported longstanding psychiatric illness and for intake of psychotropic drugs, with results for the Kurds being non-significant. Compared with Poles, Iranian and Chilean migrants had an increased risk of psychiatric illness, when seen in relation to a model in which adjustment was made for sex and age. The difference became non-significant for Chileans when marital status was taken into account. After including civil status and knowledge of the Swedish language, the increased risks for intake of psychotropic drugs for Chileans and Iranians disappeared. Living alone, poor knowledge of the Swedish language, non-employment, and low sense of coherence were strong risk factors for self reported longstanding psychiatric illness and for intake of psychotropic drugs. Iranian, Chilean, Turkish and Kurdish immigrants more frequently reported living in segregated neighbourhoods and having a greater desire to leave Sweden than their Polish counterparts.

Conclusion—Evidence substantiates a strong association between ethnicity and self reported longstanding psychiatric illness, as well as intake of psychotropic drugs. This association is weakened by marital status, acculturation status, employment status, and sense of coherence.

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Although increasing evidence exists with regard to the negative effect of migration on mental health, few studies have disentangled the effects of ethnicity, marital status, acculturation status, employment status, and sense of coherence on mental health.

In contrast with most other countries in the European Union, Sweden received during the past three decades a substantial influx of refugees, particularly from non-European countries. At the dawn of the third millennium, Sweden can be described as a multi-ethnic society with its population of approximately 1.0 million (11.1%) foreign born persons.

International studies have shown that foreign born migrants have an increased risk of psychiatric admission^{1,2} and of suicide.^{3,4} Recent Swedish studies have also showed that foreign born migrants have a higher risk of psychiatric admission,⁵ of attempted suicide,⁶ and of suicide,^{7,8} when compared with native Swedes.

In this study, we examine data from a national sample of women and men from Iran, Chile, Turkey, Kurdistan and Poland, between 20–44 years of age upon their arrival in Sweden between 1980 and 1989. They were interviewed in 1996 by Statistics Sweden⁹ and asked to describe their living conditions before and after migration, focusing on self reported mental health. These five ethnic groups represent 14% of all foreign born persons residing in Sweden and 20% of the immigrants in Sweden who are born outside the Nordic countries. Together they make up 25% of all immigrants who have arrived in Sweden during the 1980s.¹⁰

Since the revolution in Iran in 1979 and the war between Iran and Iraq, 32 000 Iranians have settled in Sweden. The majority are well educated Muslims, who, since their arrival in Sweden have had to cope with a society and culture substantially different from their own. The Chileans belong to the second wave of migrants who came to Sweden because of increasing oppression during the dictatorship in the 1980s. The Turks came to Sweden during the 1960s and 1970s as labour migrants. Turkish migrants arrived in Sweden during the 1980s, primarily because of family ties, along with refugees, who came to escape religious persecution. Since the early 1970s about 20 000 Kurds have come to Sweden, as a consequence of war and political conflicts in Turkey, Iran, Iraq and Syria. In this study, we analyse Kurds from both Turkey and Iran. Approximately 12 500 Poles came after the military coup in December 1981—that is, during our study period.

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While some other studies have examined psychiatric illness in migrant/refugee populations from countries outside Europe,¹¹⁻¹⁴ most are limited by the restricted geographical region of the study, using outpatients only, limited numbers of migrants, or exclusively interviewing men. We are particularly interested in longstanding psychiatric illness and the intake of psychotropic drugs when seen in relation to ethnicity, acculturation status, employment status, and sense of coherence, using a random non-biased sample of migrants from conflict stricken areas. This interest arises from the high levels of self reported longstanding psychiatric illness and intake of benzodiazepines among migrants (from Eastern Europe and non-Westernised countries outside Europe) when compared with native Swedes. It is important to note that these factors cannot be explained by low educational level, living alone, poor social network, or poor economic resources.¹⁵ Both longstanding psychiatric illness and the intake of psychotropic drugs are interesting to analyse, as it is conceivable that differences exist with regard to the use of psychotropic drugs among different ethnic groups.

Adaptation to the beliefs, values, cultural rules of behaviour and symbols of communication in the dominant culture, as well as learning the dominant language is pivotal in the acculturation process.¹⁶ Acculturation difficulties could be considered as a risk factor for poor mental health. In this study, we use knowledge of the Swedish language as an indicator for acculturation.

Antonovsky^{17, 18} introduced the concept "sense of coherence", consisting of three dimensions: comprehensibility, manageability, and meaningfulness. Each of these dimensions is important for the prevention of ill health. The term sense of coherence describes not only an individual's coping ability, but also certain existential aspects of a person's life. The Lundby study found that a high sense of coherence was associated with good mental health.¹⁹ In our study sense of coherence will be used as an explanatory variable.

The general aim of this study is to analyse the associations between ethnicity among migrants born in Iran, Chile, Poland, Turkey, and those of Kurdish origin from Turkey or Iran, who arrived to Sweden between 1980-89, and the outcome variables self reported longstanding psychiatric illness, and intake of psychotropic drugs. Two different reference groups are used: Swedish respondents to the Swedish Survey of Living Conditions, and a group comprised of the Polish respondents in this study, after adjustment for sex and age.

In the first aim we hypothesise that being foreign born is associated with a higher risk of longstanding psychiatric illness and intake of psychotropic drugs, when compared with native Swedes. Littlewood²⁰ points out how easily the majority population makes itself the norm and regards the minority experience as pathological. To avoid ethnocentrism in the main analyses in this study, the only European migrant group (the Poles) is used as a reference population. In the second aim we hypothesise

that migrants from non-Westernised countries, such as Iran, Chile, Turkey, or of Kurdish origin from Turkey and Iran, will have a higher risk of longstanding psychiatric illness and intake of psychotropic drugs than Polish migrants, after adjustments for sex and age. Furthermore, a hypothesised increased risk for longstanding psychiatric illness and intake of psychotropic drugs among refugees from non-European countries, when these refugees are compared with migrants from Poland, can be explained after adjustment for marital status, acculturation status (defined as knowledge of Swedish), employment status, and sense of coherence.

Methods

THE SWEDISH SURVEY OF IMMIGRANTS

The first Swedish national survey of immigrants was conducted as a joint project by the National Board of Health and Welfare, the Swedish Immigration Board, the National Institute of Public Health, and the Swedish Government. The questionnaire used was the same as the Swedish Survey of Living Conditions,²¹ but included immigrant specific questions.¹⁰

A simple random sample of 3000 migrants born in Iran, Chile, Turkey, and Poland was drawn from the Swedish population register. One hundred and eight people were regarded as over coverage and were eliminated as they did not belong to the population studied (that is, migrants who had lived in Sweden before 1980-1989, had lived abroad for many years, or had died). After the latter were discounted, the sample amounted to 2892 people, including 921 male and 1059 female immigrants/refugees (n=1980). The response rate was approximately 69%.

Data were collected from September 1996 to January 1997 by Statistics Sweden. In this study ethnicity was taken into consideration, resulting in five specific subgroups: Iranians (n=293), Chileans (n=571), Turks (n=351), Kurds (n=197), and Poles (n=568).

The Chileans, Poles, and Turks, who arrived in Sweden between 1980 and 1989, were between the ages of 20 and 44 years at the time of their arrival and between the ages of 27 and 60 years when they were interviewed. Respondents from Iran arrived in Sweden between 1985 and 1989 and were between the ages of 27 and 55 years old at the time of the interview. The interviewers were persons who were fluent in Swedish. In addition, several of the interviewers had excellent Farsi (Iranian), Spanish, Turkish, and Polish language skills. Interviews took place in the respondent's home. They were conducted either in Swedish (90% or in the respondent's native tongue, facilitating the help provided by relatives or friends (7%). Interviewers used both questionnaires and response cards, written both in Swedish and in the respondents' mother tongue. In other words, respondents could read the questions and the response alternatives on a response card, written in their own language, and choose the best alternative. Authorised interpreters (1%) were trained in interview methods, the

interview instrument, and the purpose of the interview. Irrespective of whether or not a professional interpreter mediated the interview, participants had access to questions and response alternatives in four languages: Farsi (Iranian), Spanish, Turkish, and Polish.

ANALYSIS OF NON-RESPONDERS

The non-response rate was approximately 32%. About half of the non-responders had refused to participate, while the other half included persons who could not be found. Men from Stockholm and Gothenburg and those with low income were over-represented among non-responders. A possible reason for the high proportion of those who could not be found might be that they may have been repatriated, a fact that they have failed to report to the Swedish authorities (that is, the population registry). These people should be treated as over-coverage. However, we have no reliable information as to which people have moved. Age distribution among responders and non-responders was approximately the same. Non-responders were more prevalent in large cities, such as Stockholm and Gothenburg, and had lower income than respondents. Because of non-response, ill health in the population has probably been underestimated to some extent. We assume that relative risks will probably be less influenced by non-response than by absolute measures, such as prevalence.

A random sample of native Swedes (1496 women and 1505 men) between the ages of 27 and 60 years old, collected in 1996 from the Swedish Survey of Living Conditions,²¹ were used for comparison, when the prevalences of the two outcome factors were demonstrated, and as a reference group in model I. The response rate was 79%.

OUTCOME VARIABLES

Psychiatric illness is based on the item "Have you suffered from any long term illness, after effects of an accident, disability or other ailment for more than three months?" which was assigned diagnoses by the coding group at Statistics Sweden. Diagnoses 290–319 by ICD9 were defined as longstanding psychiatric illness.

Intake of psychotropic drugs: those who reported use of hypnotics, antidepressants or tranquilisers during the last two weeks.

EXPLANATORY VARIABLES

Age at time of interview was categorised into the following groups: 27–34, 35–39, 40–44, 45–49, 50–60 years of age.

Ethnicity and *acculturation status* were indicated by country of birth and knowledge of the Swedish language, both being factors that have shown high levels of validity and reliability²² and that reflect the strength of cultural practices and beliefs, and influence on health.¹⁶ *Ethnicity* was defined as country of birth and self reported ethnicity. We chose four large refugee groups born in non-European countries (Iranians, Chileans, Turks and Kurds) and one European group: Poles. These five foreign born groups were compared with native

Swedes in the first model. To avoid ethnocentrism, the Poles were used as reference in the main analyses. Turks and Iranians were analysed as three groups, according to whether they regard themselves as ethnic Turks, Iranians or Kurds.

Marital status at time of interview was comprised of two levels: living alone or married/cohabiting.

Acculturation: knowledge of Swedish at the time of the interview will be used as a measure of acculturation.

Understanding and use of the Swedish language: five questions were asked regarding respondents' understanding of Swedish: understanding news reports on radio and television; speaking in Swedish at meetings, communicating with authorities over the telephone (that is, department of health, social security and unemployment centre), reading books, and completing a written application for employment. If a respondent scored all of the five items fairly poor (3) or very poor (4), he/she was rated as showing a poor understanding of the Swedish language, which is interpreted as an indicator of poor acculturation.

Employment status: employed or not employed (including unemployed, retired, housewife and student).

Sense of coherence: was indexed by using three questions from the short version of sense of coherence, each of which measured a different dimension: comprehensibility ("Do you usually feel that things happen to you in your daily life that are hard to understand?"), manageability ("Do you usually see a solution to problems and difficulties that other people find hard to solve?"), and meaningfulness ("Do you usually feel that your daily life is a source of personal satisfaction?").²³ Each item could be answered on a continuum from "very often" (1) to "never" (5). The responses were dichotomised. Each of the first two items were scored as one (1) if the answers were either "seldom" (4) or "never" (5); otherwise, they were considered a zero (0). Respondent were subsequently rated as having a low sense of coherence if the sums of the dichotomised items were larger than zero; otherwise, a high sense of coherence was concluded. The third item was scored as one (1) if the answer was "very often" (1) or "often" (2); otherwise, it too was considered zero (0).

OTHER DESCRIPTIVE VARIABLES NOT USED IN THE MODEL

Migrated because of political/religious instability or war: yes/no

Previous psychiatric illness: yes/no.

Family members and/or friends in Sweden upon arrival in Sweden: yes/no.

Housing: renting/owning

Segregated neighbourhoods, defined as equal or more immigrants than Swedes in the residential area: yes/no.

Exposed to discrimination in Sweden: yes/no.

Need of psychological counselling, but not sought: yes/no.

Desire to leave Sweden: yes/no.

Table 1 The distribution of the explanatory and the outcome factors, percentages (n=1980)

Variable	Level	Iranian	Chilean	Turkish	Kurdish	Polish	Swedish
Number		293	571	351	197	568	3001
Civil status	Living alone	33.8	32.9	16.2	19.3	28.3	
Poor knowledge of Swedish		33.4	45.4	62.4	50.3	18.8	
Unemployed		48.1	36.3	47.6	46.2	29.6	
Low sense of coherence		33.1	27.0	26.8	23.9	19.4	
Psychiatric illness		10.2	7.5	5.4	3.0	4.8	2.1
Intake of psychotropic drugs		12.3	12.4	10.5	7.6	10.4	3.9

Table 2 Odds ratios (OR) with 95% confidence intervals (CI) for self reported psychiatric illness and intake of psychotropic drugs in different ethnic groups after adjustment for sex and age. Native Swedes were used as a reference group

Variable	Level	Psychiatric illness OR (95% CI)	Psychotropic drugs OR (95% CI)
<i>Model I</i>			
Ethnicity			
	Iranian	6.17 (4.11, 9.26)	5.45 (3.48, 8.49)
	Chilean	3.92 (2.76, 5.57)	4.44 (3.11, 6.34)
	Turkish	2.91 (1.84, 4.59)	3.94 (2.54, 6.10)
	Kurdish	1.65 (0.79, 3.45)	3.08 (1.65, 5.77)
	Polish	2.07 (1.38, 3.11)	2.93 (2.01, 4.88)
	Swedish	1	1
H-L test		p=0.81	p=0.97

STATISTICAL ANALYSIS

The data in main effect models were analysed with unconditional logistic regression.²⁴ The results are shown as odds ratios (OR) with 95% confidence intervals (CI). Two main models were taken into consideration, one adjusting for age and another adjusting for explanatory variables. No interactions were found between: length of stay in Sweden and knowledge of Swedish; length of stay in Sweden and employment status; country of birth and sense of coherence. The fit of the models was judged by the Hosmer-Lemeshow test and by residual analysis. Including education in the final models did not change the importance of Swedish language skills.

ETHICAL CONSIDERATIONS

The immigrant data from the National Board of Health and Welfare have been approved by the Data Board. The use of data from the Swedish Survey of Living Conditions and register data from Swedish population registers has been approved by the Ethics Committee of

Lund University. Statistics Sweden has applied for the permission to make linkages. All databases were unidentified before the data analyses.

Results

Table 1 shows the distribution of the explanatory and the outcome factors in percentages.

In model I in table 2, the five ethnic groups were compared with Swedes. With the exception of the Kurds, all nationalities showed a significantly increased risk of self reported psychiatric illness. Iranians had the highest risk, with an OR=6.17 (95% CI 4.11, 9.26). The risks of intake of psychotropic drugs, varied between 2.93 and 5.45, in all five foreign born groups, when compared with native Swedes.

In the sex and age adjusted model (model IIa), Iranians and Chileans showed a higher risk of self reported psychiatric illness, when compared with the Polish reference group (table 3). Furthermore, table 3 presents the OR for self reported psychiatric illness, when successively adding the explanatory variables: marital status (living alone), poor knowledge of Swedish, and not employed. Iranians, Chileans, Turks and Kurds all show a strong decrease in OR for self reported psychiatric illness, when adjustment is made for marital status and poor Swedish language skills (Model IIc). The odds ratios decreased further for the Iranians, when not employed was included in the model. When sense of coherence was analysed in a sex and age adjusted model, the odds ratio of self reported psychiatric illness for poor sense of coherence was 4.56 (95% CI 3.30, 6.30), when compared with those who had high sense of coherence (not shown in table). Table 3 presents also the final model (Model

Table 3 Odds ratios (OR) with 95% confidence intervals (CI) for self reported psychiatric illness, in successive models in different ethnic groups. Polish immigrants were the reference group

Variable Level	Model II a Sex and age adjusted OR (95% CI)	Model II b + Marital status OR (95% CI)	Model II c + Knowledge of Swedish OR (95% CI)	Model II d + Employment OR (95% CI)	Model II e (full model) + Sense of coherence OR (95% CI)
<i>Ethnicity</i>					
Iranian	3.13 (1.95, 5.09)	3.08 (1.80, 5.26)	2.49 (1.39, 4.48)	2.14 (1.22, 3.76)	1.86 (1.11, 3.12)
Chilean	1.93 (1.25, 2.98)	1.84 (1.14, 2.96)	1.39 (0.82, 2.36)	1.34 (0.81, 2.22)	1.29 (0.81, 2.04)
Turkish	1.43 (0.84, 2.43)	1.58 (0.88, 2.83)	1.01 (0.52, 1.94)	0.87 (0.46, 1.63)	0.87 (0.49, 1.53)
Kurdish	0.84 (0.38, 1.84)	0.90 (0.38, 2.12)	0.61 (0.24, 1.55)	0.52 (0.21, 1.28)	0.51 (0.23, 1.17)
Polish	1	1	1	1	1
<i>Marital status</i>					
Married/coh		1	1	1	1
Living alone			2.25 (1.58, 3.21)	2.20 (1.52, 3.17)	1.90 (1.35, 2.66)
<i>Knowledge of Swedish</i>					
Good			1	1	1
Poor			2.57 (1.72, 3.85)	2.32 (1.58, 3.43)	1.93 (1.35, 2.76)
<i>Employment</i>					
Yes				1	1
No				2.22 (1.52, 3.24)	2.00 (1.42, 2.82)
<i>Sense of coherence</i>					
High					1
Low					3.58 (2.57, 5.00)
H-L test	p=0.92	p=0.41	p=0.63	p=0.10	p=0.14

Ile), including sense of coherence, wherein self reported psychiatric illness is adjusted for age, sex, ethnicity, marital status, knowledge of Swedish, and employment status. Iranians are the only immigrant group showing a significantly higher risk of psychiatric illness, OR=1.86 (95% CI 1.11, 3.12), after adjustment for all the independent variables. The highest risk of self reported psychiatric illness is seen in those reporting low sense of coherence with an OR= 3.58 (95% CI 2.57, 5.00), while living alone, poor knowledge of Swedish, and not being employed entailed a double risk of self reported psychiatric illness for this group, when compared with the reference group (table 3).

Table 4 shows the odds ratios for intake of psychotropic drugs. Iranians and Chileans had increased risks of intake of psychotropic drugs, when compared with Poles in the sex and age adjusted models (model IIa). When including marital status and knowledge of Swedish in successive models, the high risks became non-significant. When sense of coherence was analysed in a sex and age adjusted model, the odds ratio of intake of psychotropic drugs for poor sense of coherence was 3.47 (95% CI 2.52, 4.77), when compared with those who had high sense of coherence (not shown in table). The final model also including sense of coherence (model IIIe) did not change the odds ratios of marital status, knowledge of Swedish and employment. However, low sense of

KEY POINTS

- A strong association exists between ethnicity and self reported psychiatric illness in migrants from Iran, Chile, Turkey and Poland, when these are compared with native Swedes.
- Migrants from Iran, Chile, Turkey, Kurdistan and Poland showed an increased risk of intake of psychotropic drugs, when they were compared with native Swedes.
- The association between ethnicity, self reported psychiatric illness, and intake of psychotropic drugs is weakened by marital status, acculturation, employment, and sense of coherence.

coherence almost triples the risk of intake of psychotropic drugs.

Table 5 presents the prevalences of the descriptive variables and significant age and sex adjusted differences (p< 0.05) between the five ethnic groups (logistic regression) In this study, all five foreign born groups come from conflict stricken areas. Chileans, Iranians and Kurds state as the main reason for their migration to Sweden was political/religious instability or war in their native countries. Only one third of the Turks and Poles gives this as the main reason. Irrespective of whether or not they are refugees, all five groups report an

Table 4 Odds ratios (OR) with 95% confidence intervals (CI) for intake of psychotropic drugs, in successive models in different ethnic groups. Polish immigrants were the reference group

Variable Level	Model II a Sex and age adjusted OR (95% CI)	Model II b + Marital status OR (95% CI)	Model II c + Knowledge of Swedish OR (95% CI)	Model II d + Employment OR (95% CI)	Model II e (full model) + Sense of coherence OR (95% CI)
<i>Ethnicity</i>					
Iranian	1.84 (1.12, 3.01)	1.80 (1.06, 3.07)	1.53 (0.91, 2.59)	1.32 (0.79, 2.19)	1.16 (0.72, 1.87)
Chilean	1.51 (1.01, 2.26)	1.45 (0.94, 2.23)	1.18 (0.76, 1.82)	1.14 (0.75, 1.73)	1.10 (0.74, 1.62)
Turkish	1.33 (0.83, 2.15)	1.45 (0.87, 2.43)	1.03 (0.61, 1.76)	0.90 (0.54, 1.50)	0.89 (0.55, 1.43)
Kurdish	1.04 (0.54, 1.98)	1.10 (0.55, 2.18)	0.82 (0.41, 1.63)	0.70 (0.36, 1.37)	0.71 (0.38, 1.32)
Polish	1	1	1	1	1
<i>Marital status</i>					
Married/coh		1	1	1	1
Living alone		2.07 (1.48, 2.91)	2.14 (1.53, 2.98)	2.02 (1.47, 2.78)	1.80 (1.33, 2.42)
<i>Knowledge of Swedish</i>					
Good			1	1	1
Poor			2.00 (1.42, 2.83)	1.81 (1.30, 2.53)	1.58 (1.15, 2.16)
<i>Employment</i>					
Yes				1	1
No				2.14 (1.55, 2.95)	1.97 (1.46, 2.65)
<i>Sense of coherence</i>					
High					1
Low					2.84 (2.12, 3.81)
H-L test	p=0.49	p=0.30	p=0.98	p=0.32	p=0.34

Table 5 The distribution of background factors by ethnicity in immigrants, percentages. Test of differences by logistic regression, adjusted for sex and age. Figures in italics show significances between groups (1-5) (n=1980)

Variable	Iranian (1)	Chilean (2)	Turkish (3)	Kurdish (4)	Polish (5)	Significance (p<0.05)
Number	293	571	351	191	568	
Mean age (y)	38	40	39	38	42	
Migrated because of political/religious instability or war	80.8	79.4	34.8	68.5	34.6	1-3 1-5 2-3 2-4 2-5 3-4 4-5
Previous psychiatric illness	3.8	3.2	2.6	0.5	1.2	1-5 2-5
Family members or friends in Sweden	13.7	7.7	3.4	7.6	6.3	1-3 2-3 3-5
Housing (renting)	74.4	76.9	82.1	80.7	49.8	1-5 2-5 3-5 4-5 1-3
As many or more immigrants than Swedes in residential area	32.1	39.2	50.4	48.2	25.0	1-5 2-5 3-5 4-5 2-3 2-4 1-2 1-3 1-4
Discrimination in Sweden	35.8	15.4	12.5	23.9	12.1	1-2 1-3 1-4 1-5 2-4 3-4 4-5
Need of psychological counselling, but not sought	13.3	12.4	7.7	6.6	6.2	1-3 1-4 1-5 2-3 2-4 2-5
Desire to leave Sweden	23.9	24.9	15.1	32.0	6.9	1-5 2-5 3-5 4-5 1-3 2-3 4-3

increased prevalence of self reported psychiatric illness, which is at least twice that of such prevalence before migration.

Iranians and Chileans report previous psychiatric illness significantly more often than migrants from Poland. Iranian, Chilean, Turkish and Kurdish immigrants all reported living in segregated neighbourhoods, in rented housing and desiring to leave Sweden significantly more often than the Polish respondents.

Iranian immigrants report discrimination in Sweden to a significantly higher extent than Chileans, Turks, Kurds, and Poles. Iranians also report a significantly higher need of psychological counselling, compared to Turks, Kurds and Poles.

Since arriving in Sweden during the 1980s, Kurds and Turks show many similarities; they live in rented housing in segregated areas, almost 50% in each group lack employment and report low sense of coherence to a great extent. Yet only 15% of the Turks want to leave Sweden. This group is compared with the Kurds, among whom as many a one third want to leave Sweden. One reason could be the significantly higher prevalence of experience of discrimination among the Kurds, when compared with the Turks.

Discussion

Enforced migration is likely to cause a loss of social, cultural and economic ties with one's country of origin and, in extension, lead to the encounter with and the acculturation into a culturally and socially different society. These dramatic life changes could lead to psychiatric illness and intake of psychotropic drugs among vulnerable persons.

One of the main findings of this study was the importance of ethnicity for self reported mental health. Migrants from Iran, Chile, Turkey, Kurdistan (non-significant) and Poland, who arrived in Sweden between 1980–89, showed substantially increased risks of self reported longstanding psychiatric illness, when compared with native Swedes of comparable sex and age. Moreover, all five groups of immigrants showed increased risks for intake of psychotropic drugs. When the Poles were used as a reference group, Iranians and Chileans showed an increased risk of self reported psychiatric illness. Iranians also showed an increased risk of intake of psychotropic drugs.

We hypothesised that an increased risk for longstanding psychiatric illness and intake of psychotropic drugs among refugees from non-European countries, compared with migrants from Poland, could be explained by factors in exile, such as current marital status, acculturation status—that is, poor knowledge of Swedish, not being employed, and low sense of coherence. Our hypothesis was, however, only partially confirmed, as Iranian refugees' high risk of longstanding psychiatric illness remained significant even when adjusted for the explanatory variables. Nevertheless, all of these variables were strong risk indicators for longstanding psychiatric illness and intake of psychotropic drugs.

Very few studies have been made of immigrants and their intake of psychotropic drugs. Those that have been made have predominantly focused upon the intake of hypnotic drugs. A study from southern Sweden showed a fourfold increased risk of mental illness, defined by an index that included self reported longstanding psychiatric illness, psychosomatic complaints, and intake of benzodiazepines, when Latin American refugees were compared with Swedes, after adjustment for educational status and other socioeconomic factors.²⁵ In another study of self reported longstanding psychiatric illness and intake of benzodiazepines in a national sample, labour migrants from southern European countries and male refugees (from non-Westernised, non-European countries) demonstrated high odds ratios for mental illness, when compared with Swedes, even when educational status, civil status, social network and economic resources were taken into account. These findings agree in part with our study. In the same study, female migrants from non-Westernised countries outside Europe and men from Finland had high risks for intake of benzodiazepines, when compared with Swedes.¹⁵

In a study of psychosocial factors in middle aged men born abroad and native Swedes, immigrants reported more psychiatric problems and experienced unemployment to a greater extent than the Swedes.²⁶ Another Swedish study of middle aged women, both foreign born and native Swedes, showed a trend towards more frequent intake of benzodiazepines in the foreign born group.²⁷ However, in neither of these studies were the foreign born people likely to be of non-European background.

Adjustment attributed to the actual conditions in the host countries at the time of immigration, as well as similarity to the host population with regard to language, environment, and socioeconomic level, may affect the degree of adaptation in migrants.

At the beginning of the 1990s, Sweden was facing an economic recession with mass unemployment and increasing xenophobia. This study covers the period when economic transformation occurred in Sweden from a healthy economy to recession.

When the four migrant groups composed of Iranians, Chileans, Turks and Kurds were compared with the Poles, they reported a significantly higher experience of living in segregated neighbourhoods and of the desire to leave Sweden. In many respects, the Poles show a high degree of acculturation. However, as a group they report psychiatric illness and intake of psychotropic drugs more than twice as often as the Swedes. The Poles have strong historical and cultural ties with Sweden. However, many differences exist as well: a previous study²⁸ showed increased suicide mortality for Polish women in Sweden compared with Polish women in Poland, while the same is not true for Polish men. It would seem as if refugees who come from geographically and somewhat culturally similar countries, acculturate more easily into a new society.

Chileans have an almost fourfold increased risk of self reported psychiatric illness when compared with Swedes, a finding that is consistent with other studies from more restricted geographical areas.²⁹ In this study, Chilean immigrants show a significantly higher risk of both psychiatric illness and intake of psychotropic drugs. This could, however, be explained by living alone, low sense of coherence, poor acculturation, and not being employed.

Iranians have more than a sixfold increased risk of self reported psychiatric illness, when compared with native Swedes, and a more than threefold risk of self reported psychiatric illness, when compared with Poles. Iranians have the highest prevalence of experience of previous psychiatric illness, discrimination, and the need to consult a psychologist, when compared with the four other ethnic groups. Reports of discrimination in the Swedish society are significantly higher among Iranians, in comparison to the other four groups. Perhaps this could be an explanatory factor for the remaining risk of self reported psychiatric illness among Iranians, after adjustment for the control variables.

Access to primary health care for immigrants and native Swedes is considered to be equivalent. Not understanding the cultural and language barriers, people have the right to have an interpreter during a medical consultation. A previous Swedish study of a defined population of Latin Americans showed that this group visited Primary Health Care much more frequently than expected.²⁹ A study from Stockholm demonstrated that foreign born persons had higher primary health care consultation rates than the native population.³⁰

Geyer states that difficult life events may impair one's sense of coherence.³¹ Unfortunately we have no data on sense of coherence for any of the immigrants before their arrival in Sweden. The possibility of cultural differences with regard to reporting sense of coherence was unlikely, as no interaction was seen between country of birth and sense of coherence. However, sense of coherence was strongly related to the outcome variables in all of the modelling steps. It is interesting to note that it has been shown, by using the same items as in this study, that sense of coherence does not mediate the effect of childhood factors on adult health.³² Childhood conditions and adult sense of coherence seem to be additive risk factors for morbidity in adulthood. In addition, sense of coherence might be a risk indicator involved in the forming of class inequalities in health.

This study has several limitations. Firstly, the cross sectional design makes it difficult to draw inferences about causal directions between ethnicity, acculturation, and the outcome variables. Secondly, there is the possibility of bias from self reported data. However, a large representative sample of the Swedish population revealed that self reported, longstanding psychiatric illness was a strong risk factor for all cause mortality and violent death.³³ Cultural and language barriers could introduce a bias. The instruments used were translated to Farsi,

POLICY IMPLICATIONS

- Our findings show the need for improved mental health care and intervention programmes for adult migrants from Iran, Chile, Turkey, Kurdistan and Poland, who arrived in Sweden between 1980–89, especially among the Iranians and Chileans.
- A primary health care setting provides a unique opportunity for both primary and secondary prevention with refugees. Successful secondary prevention requires the whole primary health care team to be involved. The use of a professional interpreter is recommended.
- In addition to primary and secondary prevention in health care settings, all immigrants can benefit from living in communities that encourage social interaction with Swedes and other immigrants to promote integration. This includes improving the opportunities for acquiring Swedish language skills, the availability of libraries and existence of recreational areas for leisure time activity.
- In conclusion, immigrants are a rapidly growing component of the Swedish population. This group has significant mental health morbidity. The higher prevalences of mental health risk factors in ethnic minority subgroups, such as adult migrant patients from Iran, Chile, Turkey, Kurdistan and Poland, seem to reflect disproportionate risks across ethnic groups, which is not solely explained by socioeconomic factors. The findings highlight the need for greater understanding of the underlying mechanisms involved and the immediate need for public policies and health care programmes that promote effective primary and secondary interventions, that are attuned to the needs of all immigrant patients.

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Spanish, Turkish, Kurdish and Polish, but not back translated to Swedish, which might introduce a bias. The low frequency of interpreters used throughout and the poor Swedish language skills reported, particularly among Turks and Kurds, may seem strange. Our requirements for a "good Swedish" rating were very high—that is, respondents were required to score "very good" or "good" on all five items. These included, for example, writing an application for employment or speaking Swedish at meetings. The low frequency of interpreters used among Turks and Kurds can be explained by the use of family members as interpreters as well as the response alternatives provided in the interviewee's mother tongue. Another limitation is the selection bias, which the moderate non-response might introduce. In this study about half of the non-responders were not found. In the Swedish Survey of Living Conditions from 1996 the comparable figure was

21%. It is probable that these people had left Sweden without reporting to the authorities. Fourthly, the number of participants with longstanding psychiatric illness and intake of psychotropic drugs is too small to allow us to make gender comparisons, especially in the groups with the least number of participants. Lastly, our measure of acculturation was based on respondents' use of the Swedish language, a measure that is somewhat crude and does not measure core beliefs and cultural practices in relation to mental health.

These limitations, however, should be seen in relation to the considerable strengths of the survey. This 1996 survey of Swedish immigrants is the largest and the most comprehensive survey to date, undertaken outside of the United States, using data on risk factors for self reported, longstanding psychiatric illness and intake of psychotropic drugs for five large ethnic groups of migrants from conflict stricken countries. Another strength is Statistics Sweden's long tradition and experience of this type of survey. The majority of the items in the questionnaire is taken from the Swedish Survey of Living Conditions and has been consistent over the years. They are well validated and have high reliability.³⁴

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