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Ethnic differences in self reported health in Malmö in southern Sweden

M Lindström, J Sundquist, P-O Östergren

Abstract

Study objective—The aim of this study was to investigate ethnic differences in self reported health in the city of Malmö, Sweden, and whether these differences could be explained by psychosocial and economic conditions.

Design/Setting/Participants—The public health survey in Malmö 1994 was a cross sectional study. A total of 5600 people aged 20–80 years completed a postal questionnaire. The participation rate was 71%. The population was categorised according to country of origin: born in Sweden, other Western countries, Yugoslavia, Poland, Arabic speaking countries and all other countries. The multivariate analysis was performed using a logistic regression model in order to investigate the importance of possible confounders on the differences by country of origin in self reported health. Finally, variables measuring psychosocial and economic conditions were introduced into the model.

Main results—The odds ratios of having poor self reported health were significantly higher among men born in other Western countries, Yugoslavia, Arabic speaking countries and in the category all other countries, as well as among women born in Yugoslavia, Poland and all other countries, compared with men and women born in Sweden. The multivariate analysis including age and education did not change these results. A huge reduction of the odds ratios was observed for men and women born in Yugoslavia, Arabic speaking countries and all other countries, and for women born in Poland after the introduction of the social network, social support and economic factors into the multivariate model.

Conclusions—There were significant ethnic group differences in self reported health. These differences were greatly reduced by psychosocial and economic factors, which suggest that these factors may be important determinants of self rated health in certain minority groups.

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Although ethnic differences in self reported health have proved to be a strong prognostic indicator for subsequent mortality differences between ethnic groups in the USA,¹ few studies have previously examined differences in self reported health between ethnic groups in Sweden.

It is well known that self reported health status is strongly related to chronic diseases and physicians' ratings of self reported health status,^{2–4} health care utilisation,^{5,6} and cohort mortality in the USA,^{7–10} Finland,^{4,11} Sweden¹² and the Netherlands.¹³ Moreover, a Finnish longitudinal survey demonstrated the stability over time of self reported health status and that this kind of subjective health assessment was a valid indicator of health in middle aged populations.⁴

Today Sweden is a multiethnic society with more than one million foreign born inhabitants and, in the first decades of the 21st century, the cultural and ethnic diversity will become more marked, when the foreign born population is estimated to reach 1.3 million—that is, 12.9% of the Swedish population—in 2020. The continuously rising proportion of people born in countries other than Sweden in the population has made the health of different ethnic groups increasingly important in a public health perspective.

Several Swedish studies have demonstrated poor health among foreign born immigrants but only a few have managed to demonstrate the association between migration and health. For example, male and female immigrants from Finland and southern Europe, and refugees from non-Western countries had high odds ratios for long term illness that could not be explained by material deprivation or a sedentary lifestyle.¹⁴ Moreover, refugees from non-Western countries had a high level of education but were socially and culturally marginalised in Swedish society. They seem to bear a double burden, with the negative effects of ethnic minority status and low social position.¹⁴ It has also been shown that Bosnian women have a poorer quality of life with regard to housing, home and family situation, economy, appreciation outside the home, and aspects of mental stressors such as low energy, sleep disturbances, and low self esteem.¹⁵ Furthermore, other studies have demonstrated increased prevalence of poor health among Latin American refugees that could not be explained by their social class or a sedentary lifestyle.¹⁶

However, the absence of representative and comparative data on self reported health status in ethnic minorities in Sweden limits our knowledge about the burden of poor health, and appropriate primary prevention programmes and medical services. Moreover, the absence of data on psychosocial and economic living conditions on ethnic minority populations is a serious drawback in understanding the poor health of immigrant populations from non-Westernised countries. Other studies have

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shown that psychosocial and economic living conditions in non-migrating populations are associated with health. Socially integrated people live longer and healthier lives than socially isolated people.^{17–20} There is also evidence that not only absolute poverty, but also relative deprivation and the degree of relative material inequality causes poor health.^{21–23}

In this study we use data from a large representative survey of the city of Malmö. This city in southern Sweden has a higher proportion of immigrants than the rest of Sweden. The proportion of persons of foreign origin (persons born abroad or children under 18 with at least one parent born abroad) increased in Malmö from 17% in 1986 to 24% in 1994. The proportion of the people born in countries other than Sweden that were born in other parts of the world than the Nordic countries and Western Europe is also higher in Malmö than in other big cities.^{24–25} The population of Malmö is thus particularly suited for the study of differences in self reported health between different ethnic groups.

The aim of this study is to investigate differences between ethnic groups in self rated health. The aim is also to assess the importance of psychosocial and economic living conditions for such differences.

Methods

STUDY POPULATION

The public health survey in Malmö 1994 was a cross sectional study. A total of 5600 persons born in 1913, 1923, 1933, 1943, 1953, 1963, 1968 and 1973 were randomly selected from the Malmö general population and approached by a postal questionnaire in the spring of 1994. In each age group, 700 persons (350 men and 350 women) were contacted. Four letters of reminder were also sent to the respondents. A total of 3861 persons returned the questionnaire, although 73 were incomplete. As 3% of the target population were abroad during the time of the investigation, a total of 5422 persons had the opportunity to answer the questionnaire. Consequently, the participation rate was 71%.

DEFINITIONS

Self reported health was assessed by an item consisting of seven alternatives. The first alternative entails a completely bad health (“bad, couldn’t be worse”). The second alternative is a straightforward “bad”, and the third “somewhat bad”. The fourth alternative is neutral, followed by “somewhat good”, “good” and “good, couldn’t be better”. In this study, self reported health is dichotomised into bad (the three first alternatives) and good (the four latter, remaining alternatives).

There are 83 different *countries of origin* among the respondents. They were categorised into six categories: born in Sweden, born in other Western countries (the Nordic countries, the countries within the European Union, Switzerland, the USA, Canada, New Zealand, Australia), born in Yugoslavia, born in Poland, born in Arabic speaking countries and born in

all other countries (for example, the rest of Eastern Europe, Iran, Turkey, Vietnam, Latin America and sub-Saharan Africa).

Age was categorised from the outset by selecting only the birth years 1913, 1923, 1933, 1943, 1953, 1963, 1968 and 1973 for the random selection of the 1994 public health survey.

Education was categorised by length of education. The respondents were classified into four groups: (a) more than 12 years, (b) 10–12 years, (c) 9 years of education or less, and (d) other.

Social participation describes how actively the person takes part in the activities of formal and informal groups as well as other activities in society (study circle/course at workplace, other study circle/course, union meeting, meeting of other organisations, theatre/cinema, arts exhibition, church, sports event, letter to editor of a newspaper/journal, demonstration, night club/entertainment, big gathering of relatives, private party). It was measured as an index consisting of 13 items and dichotomised. If three alternatives or less were indicated, the social participation of that person was classified as low.

Social anchorage measures the sense of being rooted in the neighbourhood. The item consists of four alternatives: “to a high extent”, “to some extent”, “not particularly” and “not at all”. The three latter alternatives were classified as low social anchorage.

Emotional support reflects the opportunity for care, trust and confidence, and emotional contact. This item was measured by four alternatives: “Yes, I am absolutely sure of getting support”, “Yes, possibly”, “Not certain” and “No”. The three latter alternatives were classified as low social anchorage.

Instrumental support reflects the individual’s access to guidance, advice, information, practical services and material resources from other persons. It has the same four alternatives as emotional support, and was dichotomised in the same way.

Economic stress was defined as the ability to pay bills, and was measured by an item with four alternative answers: “Never problems in paying bills”, “Very seldom”, “Half the year” and “Every month”.

The reliability and validity of the psychosocial variables used in this paper were assessed in a previous paper that found an acceptable validity and reproducibility.²⁶

STATISTICS

Crude odds ratios (OR) and 95% confidence intervals (95% CI) were calculated to analyse associations between demographic and socio-economic variables, and self reported health. The multivariate analysis was performed using a logistic regression model to investigate the potential importance of possible confounders (age and education) on the differences in self reported health between country of origin categories. Finally, the psychosocial and economic stress variables were introduced into the multivariate model. The statistical analysis was performed using the SPSS software package.²⁷

Table 1 Prevalences (number and %) of self reported health, and sociodemographic, psychosocial and economic variables. Men and women. The public health survey in Malmö 1994

	Men		Women		Total	
	Number	%	Number	%	Number	%
<i>Self reported health</i>						
Good	1525	84.9	1508	82.8	3033	83.8
Bad	272	15.1	313	17.2	585	16.2
Missing	75		95		170	
<i>Country of origin</i>						
Sweden	1367	73.0	1408	73.6	2775	73.3
Other Western	155	8.3	138	7.2	293	7.7
Yugoslavia	70	3.7	78	4.1	148	3.9
Poland	53	2.8	77	4.0	130	3.4
Arabic speaking countries	57	3.0	44	2.3	101	2.7
Other countries	170	9.1	169	8.8	339	9.0
Missing	0		2		2	
<i>Year of birth</i>						
1973	202	10.8	227	11.8	429	11.3
1968	219	11.7	237	12.4	456	12.0
1963	187	10.0	223	11.6	410	10.8
1953	199	10.6	245	12.8	444	11.7
1943	247	13.2	244	12.7	491	13.0
1933	249	13.3	249	13.0	498	13.2
1923	289	15.4	264	13.8	553	14.6
1913	275	14.7	225	11.7	500	13.2
Missing	5		2		7	
<i>Education</i>						
>12 years	469	25.6	476	25.5	945	25.6
10–12 years	373	20.4	376	20.1	749	20.3
9 years or less	835	45.7	892	47.7	1727	46.7
Others	152	8.3	125	6.7	277	7.5
Missing	43		47		90	
<i>Social participation</i>						
High	1302	69.6	1337	69.8	2639	69.7
Low	570	30.4	579	30.2	1149	30.3
Missing	0		0		0	
<i>Social anchorage</i>						
High	1116	62.3	1272	68.9	2388	65.5
Low	682	37.7	574	31.1	1256	34.5
Missing	74		70		144	
<i>Emotional support</i>						
High	1145	61.2	1296	67.6	2441	64.4
Low	727	38.8	620	32.4	1347	35.6
Missing	0		0		0	
<i>Instrumental support</i>						
High	1242	66.3	1372	71.6	2614	69.0
Low	630	33.7	544	28.4	1174	31.0
Missing	0		0		0	
<i>Not able to pay bills</i>						
Never	1221	67.2	1212	64.6	2433	65.9
Very seldom	340	18.7	398	21.2	738	20.0
Half the year	103	5.7	118	6.3	221	6.0
Every month	154	8.5	147	7.8	301	8.2
Missing	54		41		95	
Total	1872		1916		3788	

Results

Table 1 illustrates that the proportion with poor self reported health was 15.1% among men and 17.2% among women. The two largest country of origin subgroups apart from those born in Sweden were those born in other Western countries and all other countries. No clear differences in country of origin between men and women were seen. People in older age brackets had answered the questionnaire to a higher extent than younger people. The

proportion of participants with more than 12 years of education was 25.6% among men and 25.5% among women. Somewhat less than half of both the male and female population had nine years of education or less. Approximately a third of both men and women were exposed to low social participation, low social anchorage, low emotional support and low instrumental support. The proportion of people unable to pay bills every month was 8.5% among men and 7.8% among women, while 67.2% of all men and 64.6% of all women never had such problems.

Table 2 shows that the odds ratio of having poor self reported health was significantly higher among men born in other Western countries, Yugoslavia, Arabic speaking countries and the category all other countries compared with men born in Sweden. Men born in Poland had the odds ratio that was closest to the Swedish born reference group, odds ratio 1.3 (0.6, 2.8). Women born in Yugoslavia, Poland, Arab countries and other countries all had significantly higher odds ratios regarding poor self reported health than women born in Sweden. In contrast, women born in other Western countries had approximately the same odds ratio as women born in Sweden, 1.4 (0.9, 2.2).

Table 3 illustrates that the odds ratio of having poor self reported health increased in higher age groups, and increased with lower educational level. The people with low social participation had increased odds ratios of having poor self reported health, 3.1 (2.6, 3.8). The odds ratios of having bad self reported health were also increased for both men and women who scored low on the other three psychosocial variables (social anchorage, emotional support and instrumental support), although not to the same extent as for social participation. The people who could not pay their bills every month had an increased odds ratio of having poor self reported health, 4.0 (3.0, 5.2).

Table 4 illustrates that adjustment for age in fact increased the odds ratios of having poor self reported health in most ethnic groups, compared with people born in Sweden. This was particularly clear for men born in Arabic speaking countries, when odds ratio changes from 3.0 (1.6, 5.5) to 3.8 (2.0, 7.1), and women born in Arabic speaking countries, odds ratio changes from 1.4 (0.6, 3.0) to 1.6 (0.7, 3.6)). Men born in other Western countries, Yugoslavia, the Arab countries and

Table 2 Crude odds ratios (OR) and 95% confidence intervals (CI) of poor self reported health, and sociodemographic, psychosocial and economic variables. The public health survey in Malmö 1994

	Men			Women		
	Number	%	OR (95% CI)	Number	%	OR (95% CI)
<i>Country of origin</i>						
Sweden	1307	12.2	1.0	1338	14.4	1.0
Other Western	151	19.9	1.8 (1.2, 2.7)	130	19.2	1.4 (0.9, 2.2)
Yugoslavia	68	25.0	2.4 (1.3, 4.2)	73	30.1	2.6 (1.5, 4.3)
Poland	52	15.4	1.3 (0.6, 2.8)	73	34.2	3.1 (1.9, 5.1)
Arabic speaking countries	54	29.6	3.0 (1.6, 5.5)	43	18.6	1.4 (0.6, 3.0)
Other countries	165	24.8	2.4 (1.6, 3.5)	164	24.4	1.9 (1.3, 2.8)
Missing	75			95		
Total	1872			1916		

Table 3 Crude odds ratios (OR) and 95% confidence intervals (CI) of poor self reported health, and sociodemographic, psychosocial and economic variables. Men and women. The public health survey in Malmö 1994

	Men and women		OR (95% CI)
	Number	%	
<i>Year of birth</i>			
1973	432	10.2	1.0
1968	457	12.0	1.2 (0.8, 1.8)
1963	402	14.4	1.5 (0.98, 2.3)
1953	440	22.3	2.5 (1.7, 3.7)
1943	479	16.9	1.8 (1.2, 2.7)
1933	492	18.5	2.0 (1.4, 2.9)
1923	530	14.0	1.4 (0.96, 2.1)
1913	438	21.0	2.3 (1.6, 3.5)
Missing	118		
<i>Education</i>			
>12 years	937	12.6	1.0
10–12 years	753	12.9	1.0 (0.8, 1.4)
9 years or less	1665	20.1	1.7 (1.4, 2.2)
Others	270	15.2	1.2 (0.8, 1.8)
Missing	163		
<i>Social participation</i>			
High	2631	11.3	1.0
Low	1045	28.5	3.1 (2.6, 3.8)
Missing	112		
<i>Social anchorage</i>			
High	2350	13.6	1.0
Low	1244	20.8	1.7 (1.4, 2.0)
Missing	194		
<i>Emotional support</i>			
High	2347	11.5	1.0
Low	1329	24.5	2.5 (2.1, 3.0)
Missing	112		
<i>Instrumental support</i>			
High	2526	12.4	1.0
Low	1150	24.6	2.3 (1.9, 2.8)
Missing	112		
<i>Not able to pay bills</i>			
Never	2393	12.6	1.0
Very seldom	721	17.3	1.5 (1.2, 1.8)
Half the year	219	22.8	2.1 (1.5, 2.9)
Every month	297	36.4	4.0 (3.0, 5.2)
Missing	158		
Total	3788		

the all other countries category had significantly increased odds ratios of having poor self reported health compared with men born in Sweden. Women in all groups except Western countries and Arab countries had significantly increased odds ratios of having bad self reported health compared with women born in Sweden. The inclusion of education in the multivariate analyses only slightly changed the odds ratios for both men and women in the different ethnic groups. Finally, the introduction of social participation, social anchorage, emotional support, instrumental support and economic stress into the multivariate model

Table 4 Age adjusted and multivariate odds ratios (OR) and 95% confidence intervals (CI) of having poor self reported health in different country of origin groups compared with the group born in Sweden. Men and women. The public health survey in Malmö 1994

	OR (95% CI)*	OR (95% CI)†	OR (95% CI)‡
<i>Men</i>			
Born in Sweden	1.00	1.00	1.00
Born in other Western countries	1.92 (1.24, 2.97)	1.88 (1.21, 2.93)	1.56 (0.97, 2.52)
Born in Yugoslavia	2.65 (1.48, 4.74)	2.68 (1.50, 4.80)	1.44 (0.74, 2.79)
Born in Poland	1.37 (0.63, 2.98)	1.40 (0.64, 3.07)	1.34 (0.60, 3.02)
Born in Arabic speaking countries	3.76 (2.00, 7.05)	3.80 (2.02, 7.15)	1.10 (0.52, 2.34)
Other countries	2.83 (1.87, 4.26)	2.81 (1.85, 4.27)	1.61 (1.01, 2.57)
<i>Women</i>			
Born in Sweden	1.00	1.00	1.00
Born in other Western countries	1.44 (0.91, 2.29)	1.40 (0.87, 2.24)	1.22 (0.74, 2.03)
Born in Yugoslavia	2.80 (1.65, 4.75)	2.35 (1.37, 4.05)	1.59 (0.87, 2.91)
Born in Poland	3.22 (1.93, 5.36)	3.56 (2.11, 5.98)	2.27 (1.29, 4.00)
Born in Arabic speaking countries	1.62 (0.73, 3.61)	1.47 (0.62, 3.46)	0.55 (0.21, 1.45)
Other countries	2.14 (1.44, 3.18)	2.20 (1.48, 3.29)	1.15 (0.73, 1.81)

*Adjusted for age. †Adjusted for age and education. ‡Adjusted for age, education, social participation, social anchorage in neighbourhood, emotional support, instrumental support and ability to pay bills.

reduced the odds ratios of having bad self reported health for all ethnic groups compared with the Swedish born reference group, but the reduction was particularly pronounced for both men and women born in Yugoslavia, Arab countries and all other countries, and for women born in Poland. For men born in Arab countries the odds ratio was reduced from 3.8 (2.0, 7.2) to 1.1 (0.5, 2.3), for men born in all other countries from 2.8 (1.8, 4.3) to 1.6 (1.0, 2.6), and for men born in Yugoslavia from 2.7 (1.5, 4.8) to 1.4 (0.7, 2.8). Similar reductions of the odds ratios were seen for women born in these countries. The odds ratio for women born in Poland was also reduced from 3.6 (2.1, 6.0) to 2.3 (1.3, 4.0).

Discussion

The main finding of this study was the augmented odds ratios of having poor self reported health among men born in other Western countries, Yugoslavia, Arab countries and in the category all other countries as well as among women born in Yugoslavia, Poland and the category all other countries compared with those in the Swedish born reference group. However, adverse psychosocial and economic living condition factors seemed to have a strong influence on poor health in these groups because a large reduction of the odds ratios was observed for both men and women born in Yugoslavia, Arab countries and all other countries, and for women born in Poland after the introduction of these factors into the multivariate model.

Self reported health is an important independent predictor of mortality.^{4, 28} Both self reported health and mortality are closely related to age, but their mutual relation may not be the same in all age groups as among the old. However, even for the younger and middle aged, the respondent's perceived global health is a consistent and significant predictor of mortality.⁴ It has been proposed that cultural differences between ethnic groups may imply that they perceive their combined physical and psychological health differently.²⁹ However, there was a strong association between self reported health in different ethnic groups in the USA and the total mortality of these ethnic groups.¹ This association consequently seems to be universal rather than culturally determined.

The finding that psychosocial and economic conditions had the strongest influence on the increased risks of having poor self reported health among those who had immigrated to Sweden from countries that were geographically most distant and culturally most dissimilar to Swedish society—that is, the groups born in Arabic speaking countries, Yugoslavia and all other countries—agreed with another Swedish study.³⁰ It was found that economic difficulties in exile, a low sense of coherence, poor acculturation (men only), and poor sense of control, were stronger risk factors for self reported psychological distress in this group than exposure to violence before migration.³⁰ Moreover, a British study found that poor

social support in exile was a stronger predictor for depression than trauma factors.³¹

Studies of migrants are prone to mistaken conclusions, as both culturally determined factors inherited in the country of origin as well as current social and economic living conditions in the new country may affect the behaviour and self perceived health of the immigrants.³² The higher risks of a poor self reported health status may theoretically have been determined by culturally inherited differences in perceiving health, or by events that occurred in the native countries resulting from oppression, violence, torture or economic exploitation. The increased risks may alternatively have been determined by current psychosocial and material conditions in the new country. Our results suggest that socioeconomic, psychosocial and economic conditions in the new country were important determinants of self rated health of ethnic minority immigrant groups in Malmö in southern Sweden in the 1990s. The importance of the psychosocial and economic determinants increased with the geographical and cultural distance between the country of origin and Sweden. However, men born in other countries, particularly refugees from non-European countries, still had an increased risk of poor self reported health after adjustment for socioeconomic, psychosocial and economic conditions in the new country. Moreover, the finding of a strong risk of poor health status among Polish women partly agreed with a Swedish study that found an increased risk of suicide among Polish women, higher than in their countries of birth.³³

The people who migrate from their country of birth to another country or even another part of the world, are generally more healthy than those who do not migrate from their native country. However, this “healthy migrant effect” tends to wear off with time.³⁴ One important reason could be that psychosocial and economic conditions in the new country affect the health status in a detrimental and unhealthy way. The results of this study further strengthen the notion that such structural improvements as the integration of immigrants in Swedish society and their increased participation on the Swedish labour market are absolutely crucial for achieving health equity between Swedish born people and immigrants.

LIMITATIONS AND STRENGTHS

This study has several limitations. To begin with, its cross sectional design makes it difficult to draw inferences about causal pathways between migration, psychosocial and economic conditions and self reported health. Next, there is the possibility of bias from self reported data. Although self reported health status is a useful indicator of the health conditions of a population, it is a subjective and imprecise measure of health, which reflects a person’s general perception of health more than well defined health outcomes. Doubt about the significance of self rated health status have been suggested by an Australian study that revealed unexpected gender differences in health ratings and survival.³⁵ In addition, the reference point for

KEY POINTS

- Some immigrant groups in Sweden have poorer self reported health than the population born in Sweden.
- The poorer self perceived health status could be attributable to either factors in the country of birth, factors related to the act of migration or social and economic factors in Sweden.
- A huge reduction of the odds ratios of poor self reported health was observed for some of the ethnic groups after the introduction of the social and economic factors into the multivariate model.
- The results suggest that ethnic differences in self reported health in Sweden can partly be explained by social and economic conditions.

assessment of self rated health is not absolute and varies with demography and social context. However, the stability over time of self reported health status was demonstrated, as well as the fact that this kind of subjective health assessment was a valid indicator of health in middle aged populations and could be used in cohort studies.¹⁰ Moreover, the test-retest reliability of self rated health status has been good.³⁶

The classification of immigrants is general in this paper. Some of the respondents of foreign origin may be refugees, others may be people who have moved as a step in their occupational career. There may thus be different underlying social and economic circumstances that cause migration from one country to another. However, from the end of the 1940s until the beginning of the 1970s Sweden almost exclusively had a labour market immigration from countries within the category Other Western countries and the Yugoslavia category. In the 1970s there was a transition from labour market immigration to refugee immigration from the countries within the Arabic speaking countries and Other countries categories. The Yugoslavia category has also been a source of refugee immigration from 1992 and onwards, but only a few were domiciled in the Swedish population registry in 1994.³⁷ This pattern is also reflected by the fact that only 14% of the Arabic speaking men and 4.5% of the Arabic speaking women in the 1994 public health survey had moved to Sweden before 1985, while 89% in the Other Western countries category had moved to Sweden before 1985.

The questionnaire was sent to the respondents without any translations or any translation help. Sweden provides courses in Swedish for immigrants, “Svenska för invandrare”, and some of the introductory courses are even mandatory. As the persons who were chosen to be respondents were randomly chosen from the population register of Malmö, they must also have been living in Sweden for a year.

The Arabic speaking world is not culturally homogeneous. However, compared with the Western world and compared with Sweden, it is rather homogeneous both when it comes to language and religion. This categorisation is

also as close we can get by using this empirical material.

Country of origin does not confer any particular legal status within Sweden. Even foreign citizens (11% of the Malmö population) have the right to vote in municipal elections, although not in elections to the National parliament. It is thus not plausible that legal status have any impact on the health status of the migrants of this study.

No item concerning previous/current disease was included in the 1994 public health survey questionnaire. This possible confounder may account for some of the ethnic differences in self reported health. This may infer a reversed causality in the direction from disease and thus poor self reported health to social and economic conditions. However, this reversed causal pathway is probably not quantitatively important, and most importantly not in the younger age brackets were, for example, the Arabic speaking group is concentrated.

The results of this study could also be biased by selection bias and confounding. The participation rate is 71%, which is fairly high. Furthermore, the proportion of people born in countries other than Sweden was 24% in Malmö in 1994 according to the population register covering the entire population. The 26.7% proportion of people born in other countries than Sweden rather seems to be a slight overrepresentation of the foreign born part of the Malmö population in the age brackets included in this study. The distribution of the country of origin categories is also similar to that observed in the general Malmö population.²⁵ Non-participation is thus not likely to have produced a serious selection bias in this study. Age, sex, and education might be confounders of the associations between country of origin and self reported health. Adjusting for these possible confounders, however, only marginally affected the estimates.

There are other positive aspects of this study. The 1994 public health survey in Malmö on which we base our findings is highly representative both concerning the whole group born in other countries than Sweden, and concerning the proportions of the different ethnic subgroups, compared with official register data concerning the composition of the whole population of the city of Malmö in 1994. The comparably high proportion of people of, for example, Arab extraction combined with the good representation of this group within the study makes it possible to draw inferences and conclusions concerning the health of an ethnic minority group that has rarely been studied.

The results of this study suggest that psychosocial and economic conditions should be considered as determinants of poor health in certain ethnic minority groups, and thus a much broader social perspective should be taken into account when facing these patients.

To conclude, this study presents support for the notion that psychosocial and economic conditions are highly important as causal determinants of self rated health among important ethnic minority groups in Swedish society. Ethnic differences in self reported

health are thus not primarily a consequence of cultural differences between different immigrant groups.

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