

Ethnic Identity and the Risk of Schizophrenia in Ethnic Minorities: A Case-Control Study

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Objectives: The high incidence of schizophrenia in immigrant ethnic groups in Western Europe may be explained by social stress associated with ethnic minority status. Positive identification with one's own ethnic group is a strong predictor of mental health in immigrants. We investigated whether negative ethnic identity is related to schizophrenia risk in non-Western immigrants. **Methods:** Matched case-control study of first-episode schizophrenia, including 100 non-Western immigrant cases, general hospital controls ($n = 100$), and siblings ($n = 63$). Conditional logistic regression analyses were used to investigate associations between schizophrenia and ethnic group identity. **Results:** Cases had a negative ethnic identity more often than general hospital controls (64% and 35%, respectively, $P < .001$). After adjustment for marital status, level of education, unemployment, self-esteem, social support, and cannabis use, negative ethnic identity was associated with schizophrenia: odds ratio = 3.29; 95% confidence interval = 1.36–7.92. Cases significantly more often had an assimilated or a marginalized identity and less often had a separated identity. Comparisons between cases and siblings largely confirmed these findings. **Conclusions:** Negative identification with the own ethnic group may be a risk factor for schizophrenia in immigrants living in a context of social adversity.

Key words: identity/migrants/acclulturation/psychosis

Introduction

The striking finding of a very high incidence of schizophrenia and other psychotic disorders among ethnic mi-

nority groups in Western Europe^{1,2} remains largely unexplained. Reviews have suggested that adverse social experiences of ethnic minority groups may contribute to their elevated risk, such as perceptions of discrimination and exclusion.³ Few studies evaluated this hypothesis, showing that ethnic minority groups' experiences of discrimination were associated with the incidence of schizophrenia in these groups,⁴ perceived disadvantage compared with other individuals in society partially explained the excess of psychosis among the UK black population,⁵ and the risk for psychotic disorders was particularly high for members from ethnic minority groups living in neighborhoods where their own ethnic group comprised a small proportion of the population.^{6,7}

The present study investigated how such adverse social experiences would result in individuals developing schizophrenia. We focused on ethnic group identity because positive identification with one's own ethnic group has been shown to buffer negative consequences of racial discrimination⁸ and is a strong predictor of mental health in first- and second-generation immigrants.^{9,10} Strong orientation toward the own minority group may diminish perceptions of exclusion and disadvantage,¹¹ whereas a positive ethnic minority identity is likely to be threatened in those who live isolated from their own ethnic group.¹²

A second dimension of ethnic group identity is the identity as a member of the larger society (hereafter national or Dutch identity), which is independent of ethnic minority identity (hereafter ethnic identity).¹³ An individual who retains a strong ethnic identity while also identifying with the larger society is considered to have an integrated identity. One who has a strong ethnic identity but a weak national identity has a separated identity, whereas one who gives up an ethnic identity and only has a strong national identity has an assimilated identity. The individual who identifies neither with the own ethnic group nor with the larger society has a marginalized identity.⁹ Of these 4 identity positions, integration has been associated with good mental health,^{9,14} and marginalization has been shown consistently to predict low self-esteem and poor mental health.^{9,11} Research of health consequences of separation and assimilation had contradictory results depending on outcome and context.¹⁵

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Given the pattern of a higher psychosis risk for second-generation immigrants,¹⁶ who are generally more assimilated than immigrants of the first generation,¹³ and the findings of a lower risk for immigrants living in high-ethnic density neighborhoods,⁷ assimilation may increase the risk of schizophrenia, and separation may be protective.

This case-control study of first-episode schizophrenia among non-Western ethnic minorities in The Hague, The Netherlands, was designed to investigate associations between these factors and risk for schizophrenia. We hypothesized that first- and second-generation ethnic minorities who developed schizophrenia would identify themselves less often and less positive with their own ethnic group than their siblings and nonpsychotic controls and that they would more often have an assimilated or marginalized identity and less often a separated or integrated identity.

Methods

Classification of Ethnicity

We used the classification of ethnicity as defined by The Netherlands' Bureau of Statistics. If a citizen, or (one of) his or her parents, was born abroad, he or she is assigned to the group of people born in the same country. If the parents were born in different foreign countries, the country of birth of the mother determines the assignment to a particular group.

Participants

Cases. All first- or second-generation immigrants from non-Western countries (of which 85% from Surinam, Morocco, Turkey, or The Netherlands Antilles), aged 18–54 years, who made first contact with a physician in The Hague for a psychotic disorder and received a diagnosis of a schizophrenia-spectrum disorder (*Diagnostic and Statistical Manual of Mental Disorders* [Fourth Edition]: schizophrenia, schizophreniform disorder, schizoaffective disorder) between October 1, 2000, and July 1, 2005, were eligible for the study ($n = 150$). Case-finding procedures and diagnostic protocol of the study have been described elsewhere.¹⁶ If the patient had been adopted as a child, he or she was excluded ($n = 4$).

Controls. For each patient, 2 control subjects were recruited, matched for 5-year age-group, sex, and ethnicity (including generation). They were screened for psychotic symptoms (see "Measures"), and were excluded if these were present ($n = 5$).

The first control group was recruited among the general ethnic minority population of The Hague. To minimize selection bias as a result of pathways to care, the controls were selected from immigrants who made contact with nonpsychiatric secondary health-care services.

Controls were recruited from the outpatient departments of Internal Medicine and Surgery of a general hospital. The reasons for making contact with these departments differed widely and included lipoma or nevus ($n = 15$), fracture ($n = 8$), contusion ($n = 11$), hemorrhoids ($n = 8$), sinus pilonidalis ($n = 5$), anal fissure ($n = 5$), inflammatory bowel disease ($n = 5$), diabetes mellitus ($n = 5$), and other, less frequent diagnoses ($n = 38$).

The second control group consisted of siblings of the patients in order to (partially) control for genetic factors and to control implicitly for unmeasured shared socioenvironmental confounding factors. It was not always possible to match siblings on sex and age.

All participants gave written informed consent for the study. The study was approved by the regional ethics committee. Structured interviews were conducted by a resident in psychiatry (W.V.) and 4 trained research assistants. If participants did not speak Dutch sufficiently ($n = 9$), 3 trained research assistants, who were native speakers in Turkish, Kurdish, Urdu, Arabic, or Berber, conducted the interviews. Because we expected this in advance to concern only a small minority of the sample, we neither developed nor maintained a protocol for translation and backtranslation of the questionnaires. Participants were instructed to answer according to their experiences in the year before illness onset, but the date of illness onset was not assessed in a systematic way.

Measures

Ethnic and National Identity. Measures were adapted from the International Comparative Study of Ethnocultural Youth (ICSEY), a study among more than 10 000 adolescents from 30 ethnic groups in 13 countries, which included Surinamese, Turkish, and Antillean immigrants in The Netherlands.¹⁴ Identity was assessed with the ordinal ICSEY Scale of Ethnic and National Identity. This is a 10-item version of the Multigroup Ethnic Identity Measure,¹⁷ with response options ranging from "strongly disagree" (1) to "strongly agree" (5), assessing ethnic and national affirmation, sense of belonging, and feelings about being group member. An example is "Being part of *ethnic* culture is embarrassing to me." We not only used the total scores of the Ethnic and National Identity subscales as continuous measures but also calculated the median scores of the Ethnic and National Identity Scales to use these as cutoff points to classify participants as having a positive or a negative identity.

Also, participants were assigned to different identity categories. Participants who scored above the median of both ethnic identity and national identity were classified as having an integrated identity. Those with a score above the median of ethnic identity but below the median of national identity had a separated identity; those with a score below the median of ethnic identity but above the median of national identity had an assimilated identity;

and those who had a score below the median of both measures had a marginalized identity.

Psychotic Symptoms. In control subjects, the psychosis section of the Composite International Diagnostic Interview, version 2.1,¹⁸ was administered.

Other Measures. Associations between ethnic identity, national identity, and schizophrenia may be confounded and mediated by a host of factors, several of which were explored. Self-esteem was measured with the 15-item Rosenberg Self-esteem Scale (example: "On the whole, I am satisfied with myself")¹⁹; the 6-item ICSEY Mastery Scale assessed locus of control (example: "When I make plans, I feel certain that I can make them work")¹⁴; and the 12-item Shortened Social Support Scale (example: "How often does someone shows interest in you?")²⁰ measured perceived social support. Also, lifetime use of cannabis was recorded. Use was defined as more than 5 times.

Information was noted on marital status (single or else). Socioeconomic status was assessed with level of education (no or primary, secondary, or higher education), employment status (unemployed or else), and parental social class: father's level of occupation (according to the classification of The Netherlands' Bureau of Statistics) and father's level of education (no or primary, secondary, or higher education).

Key Informants. For all participants, key informants were asked to complete a short version of the structured interview for their relatives, which included sociodemographic information, life events, language use, racial discrimination, and social behavior.

Validity and Reliability of Measures. For each ICSEY Scale, it has been shown that it measures the same psychological construct in all ethnic groups, as all Tucker's ϕ 's, a measure of agreement,²¹ were 0.90 or higher.¹⁴ The measures have shown good to excellent internal reliability as well (Cronbach α 's > .70). Cronbach α 's in our sample were good to excellent for Mastery (.70), Ethnic Identity (.81), National Identity (.82), Self-esteem (.83), and Perceived Social Support (.85). In 2 subsamples, we investigated interrater reliability ($n = 23$; tested because the scales were administered by the interviewer and not filled out by the participant) and test-retest reliability after 1 week ($n = 24$) of the scales, with intraclass coefficients of .85–.99 and .63–.96, respectively.

Statistical Analysis

Stata version 9.2 was used for all statistical analyses. The pairwise matched case-control design required conditional (fixed-effects) logistic regression techniques. The regression models were fitted stepwise. First, each variable was entered separately in the model. Those variables that differed significantly between cases and control groups (with P values < .10) were selected for further

analyses. Next, the continuous and dichotomous variables of ethnic identity and national identity as well as the 4 identity types were included with all potential confounding and/or mediating variables. Comparisons were made between cases and general hospital controls (100 pairs) and between cases and sibling controls (63 pairs).

Additional analyses addressed the issue of information bias. Scale scores of participants were compared with the scores provided by their key informants with use of conditional logistic regression.

Results

Of the 146 patients who were eligible for the study, 2 patients had deceased before the present study was conducted. Twenty-six patients could not be interviewed because they had remigrated to their home country ($n = 5$), they were too ill during the entire study period ($n = 8$), or there was no current address available ($n = 13$). Of the 118 patients who were contacted, 18 refused to participate. Thus, 100 patients were interviewed. Of the 168 subjects in the general hospital control group who were matched to the schizophrenia patients, 4 subjects were physically too ill to be interviewed, 1 was mentally handicapped, 3 were excluded because they had a psychotic disorder, and 60 refused to participate. For 15 patients, there was no sibling available because all siblings were too young or lived abroad, patients had no sibling, or patients did not know their current address. Nine patients refused permission to contact their siblings; 2 patients only had a sibling who had psychotic symptoms. For 11 of the remaining 74 patients, the siblings refused to participate. Thus, siblings of 63 patients could be interviewed.

Characteristics of the study sample are shown in table 1. Compared with controls, cases more often had single marital status, were more often unemployed, and had a lower level of education.

Also, cases had lower self-esteem than general hospital controls and siblings in the year before illness onset and more often had a lifetime history of cannabis use.

Using the continuous measure, weak ethnic identity was strongly associated with schizophrenia in the comparison between cases and general hospital controls (odds ratio [OR] = 1.13, 95% confidence interval [CI] = 1.06–1.21, $P < .001$; adjusted OR = 1.12, 95% CI = 1.03–1.22, $P = .006$). The difference in Negative Dutch Identity Scale score between cases and controls was not statistically significant (OR = 1.00, 95% CI = 0.92–1.08, $P = .983$; adjusted OR = 0.89, 95% CI = 0.79–1.01, $P = .062$).

Using the dichotomous measure, cases more often had a negative ethnic identity than general hospital controls (64% and 35%, respectively, $P < .001$, table 2). A similar proportion of the groups had a negative Dutch identity (table 2). After adjustment for potential confounding and/or mediating factors, negative ethnic identity was still significantly associated with schizophrenia (OR = 3.29,

Table 1. Characteristics of Study Sample by Matched Case-Control Status^a

	Cases (<i>n</i> = 100)	General Hospital Controls (<i>n</i> = 100)	Cases (<i>n</i> = 63)	Sibling Controls (<i>n</i> = 63)
Age (y)	26.6 (6.7)	27.2 (7.2)	25.9 (6.8)	26.5 (8.5)
Male sex, <i>n</i> (%)	74 (74)	72 (72)	50 (79)	29 (46) ^b
Ethnicity, <i>n</i> (%)				
Moroccan	29 (29)	30 (30)	20 (32)	20 (32)
Turkish	19 (19)	20 (20)	12 (19)	12 (19)
Surinamese	32 (32)	34 (34)	21 (33)	21 (33)
Other non-Western	20 (20)	17 (17)	10 (16)	10 (16)
Second generation, <i>n</i> (%)	36 (36)	35 (35)	27 (43)	28 (44)
Single marital status, <i>n</i> (%)	72 (72)	46 (46) ^b	52 (83)	37 (59) ^b
Level of education, <i>n</i> (%)				
No/primary	9 (9)	11 (11)	3 (5)	6 (10)
Secondary	77 (76)	63 (63)	48 (76)	37 (59)
Higher	13 (13)	26 (26)	11 (17)	20 (32)
Occupational level of father, <i>n</i> (%) ^c				
Low	59 (63)	46 (58)	39 (64)	39 (65)
Middle	26 (28)	28 (35)	17 (28)	15 (25)
High	8 (9)	6 (8)	5 (8)	6 (10)
Level of education of father, <i>n</i> (%) ^d				
No/primary	41 (57)	49 (62)	21 (47)	30 (56)
Secondary	25 (35)	22 (28)	19 (43)	18 (33)
Higher	6 (8)	8 (10)	4 (9)	6 (11)
Unemployed, <i>n</i> (%)	17 (17)	9 (9)	13 (21)	3 (5) ^e
Cannabis use, <i>n</i> (%)	59 (59)	21 (21) ^b	20 (32)	13 (21) ^b
Self-esteem	53.68 (12.12)	60.28 (9.97) ^b	53.65 (12.26)	61.52 (10.13) ^b
Mastery	23.73 (5.21)	24.76 (4.30)	24.73 (4.56)	25.87 (3.66)
Perceived social support	27.95 (8.12)	33.80 (5.86) ^b	28.71 (8.30)	31.10 (6.81)

^aMeans (SDs), unless otherwise specified.

^b $P < .005$, Wald test, conditional logistic regression analysis.

^cInformation missing for 31 (11.7%) participants.

^dInformation missing for 59 (22.3%) participants.

^e $P < .05$, Wald test, conditional logistic regression analysis.

95% CI = 1.36–7.92) (table 3). Also, in the final model, a negative Dutch identity was related to a lower risk for schizophrenia (OR = 0.36, 95% CI = 0.15–0.87) (table 3).

The analyses of the identity types showed that cases significantly more often had an assimilated or a marginalized identity and less often had a separated identity (table 4).

In the comparison between cases and siblings, the continuous measure of negative ethnic identity was related to a higher risk for schizophrenia (OR = 1.22, 95% CI = 1.09–1.37, $P = .001$; adjusted OR = 1.30, 95% CI = 1.04–1.62, $P = .019$). An increase in negative Dutch identity was not significantly associated with schizophrenia (OR = 0.92, 95% CI = 0.83–1.03, $P = .151$; adjusted OR = 0.92, 95% CI = 0.96–1.10, $P = .345$).

The dichotomous measure of negative ethnic identity strongly predicted schizophrenia (adjusted OR = 4.33,

95% CI = 1.78–10.53), whereas negative Dutch identity was associated with a lower risk of schizophrenia (OR = 0.19, 95% CI = 0.07–0.55, table 3). After adjustment for potential confounding and/or mediating factors, the OR for negative ethnic identity increased but was not statistically significant ($P = .065$). Negative Dutch identity remained to be related to a lower risk for schizophrenia (table 3).

Finally, cases had significantly less often a separated identity than their siblings (table 4). Information from key informants was available for 43 cases, 38 siblings, and 44 general hospital controls. There were no statistically significant differences between the information from the cases and from their key informants. In the sibling and in the general hospital control groups, participants rated their social integration somewhat higher than their key informants did (results not shown, available on request).

Table 2. Measures of Identity and Risk for Schizophrenia by Matched Case-Control Status^a

	Cases (<i>n</i> = 100)	General Hospital Controls (<i>n</i> = 100)	OR (95% CI)	Cases (<i>n</i> = 63)	Sibling Controls (<i>n</i> = 63)	OR (95% CI)
Negative ethnic identity, <i>n</i> (%) ^b	64 (64)	35 (35)	3.42 (1.80–6.50)	38 (60)	18 (29)	4.33 (1.78–10.53)
Negative Dutch identity, <i>n</i> (%) ^b	47 (47)	53 (53)	0.76 (0.42–1.38)	30 (48)	48 (76)	0.19 (0.07–0.55)

Note: OR, odds ratio; CI, confidence interval.

^aDifferences between groups tested with Wald tests in conditional logistic regression analysis.

^bMedian used as cutoff on scale scores of affective ethnic and Dutch identity.

Discussion

In this case-control study of first-episode schizophrenia among non-Western ethnic minorities, negative identification with the own ethnic group was associated with schizophrenia. Individuals who developed schizophrenia identified themselves less positive with their own ethnic group than general hospital controls in the year before illness onset. There were no consistent associations between negative Dutch identity and schizophrenia risk, but cases had more often an assimilated or a marginalized identity than the matched controls and less often a separated identity.

Comparisons between cases and their siblings largely confirmed these findings. Although this case-sibling de-

sign only partially controls for genetic factors, the similarity of the results in the 2 control groups makes it unlikely that genetic vulnerability for schizophrenia can account for the findings.

These results are consistent with the hypothesis that identification with the own ethnic group, but not identification with the majority group, may protect from schizophrenia. Positive identification with the own ethnic group is not intrinsically protective; however, its value depends upon the social context. Belonging to an ethnic minority group subjected to discrimination and negative stereotyping has previously been associated with the incidence of schizophrenia⁴ and represents a threat to self-esteem and social identity.¹¹ Individuals may respond to this threat by asserting identification with their group and

Table 3. Effect of Potential Confounding/Mediating Factors in the Relationship Between Schizophrenia and Ethnic Minority/Dutch Identity^a

	Cases vs General Hospital Controls (100 Pairs)			Cases vs Sibling Controls ^b (63 Pairs)		
	OR	95% CI	<i>P</i>	OR	95% CI	<i>P</i>
Negative ethnic identity						
Unadjusted	3.42	1.80–6.50	.000	4.26	1.57–11.54	.004
Adjustment for						
Marital status	4.09	1.96–8.52	.000	4.72	1.52–14.62	.007
Level of education	3.69	1.89–7.21	.000	4.14	1.48–11.60	.007
Unemployment	3.64	1.86–7.09	.000	4.66	1.52–14.26	.007
Self-esteem	3.08	1.57–6.06	.001	2.47	0.81–7.50	.111
Social support	2.68	1.33–5.40	.006	4.28	1.47–12.53	.008
Cannabis use	3.05	1.58–5.88	.001	4.06	1.50–11.02	.006
All the above	3.29	1.36–7.92	.008	6.39	0.89–45.93	.065
Negative Dutch identity						
Unadjusted	0.76	0.42–1.38	.367	0.23	0.07–0.74	.014
Adjustment for						
Marital status	0.68	0.35–1.30	.239	0.16	0.04–0.61	.007
Level of education	0.78	0.43–1.44	.428	0.23	0.07–0.74	.013
Unemployment	0.68	0.36–1.26	.217	0.26	0.07–0.95	.042
Self-esteem	0.64	0.33–1.24	.183	0.20	0.05–0.75	.017
Social support	0.49	0.24–1.00	.050	0.21	0.06–0.71	.011
Cannabis use	0.76	0.40–1.44	.395	0.21	0.07–0.69	.010
All the above	0.36	0.15–0.87	.023	0.14	0.02–0.93	.042

Note: OR, odds ratio; CI, confidence interval.

^aConditional logistic regression, differences tested for statistical significance with Wald tests.

^bAll associations adjusted for sex because matching for sex was not always possible.

Table 4. ORs of Schizophrenia for Identity Types; Conditional Logistic Regression

Identity Type ^a	Cases vs General Hospital Controls ^b			Cases vs Sibling Controls ^c		
	OR	95% CI	<i>P</i>	OR	95% CI	<i>P</i>
Integrated	0.54	0.26–1.11	.10	4.69	0.81–27.91	.09
Separated	0.17	0.06–0.47	.001	0.09	0.02–0.42	.002
Assimilated	4.68	1.82–12.04	.001	5.55	0.75–41.00	.09
Marginalized	2.28	1.06–4.91	.04	3.05	0.84–11.09	.09

Note: OR, odds ratio; CI, confidence interval.

^aMedian used as cutoff on scale scores of affective ethnic and Dutch identity. Integrated identity indicates high ethnic and high Dutch identity, separated is high ethnic and low Dutch identity, assimilated is low ethnic and high Dutch identity, marginalized is low ethnic and low Dutch identity.

^bOne hundred pairs, associations adjusted for marital status, level of education, and unemployment.

^cSixty-three pairs, associations adjusted for sex, marital status, level of education, and unemployment.

by seeking positive distinctiveness from the majority group, which enhances self-esteem,²² prevents or buffers stress,⁸ and has been associated with psychological well-being^{9,10} (an example of this strategy is the “Black is beautiful” movement in the 1960s in the United States). An opposite response to this threat is trying to downplay ethnic identity, striving to leave the low-status minority group and to join the dominant group.¹¹ The boundaries between ethnic groups are difficult to cross, however, which means that this strategy often increases rather than resolves the threat.¹³ It is likely to be associated with feelings of humiliation and with experiences of an undeserved gap between aspirations and achievements.²³ The social stress resulting from this social defeat is a severe cognitive and emotional challenge, which may exceed the coping ability of individuals with a genetic vulnerability to schizophrenia, who often have impaired executive function. When subjected to such a severe challenge, they may be more likely to develop the disorder.²³ Results from animal experiments suggest that social stress may induce changes in the brain that resemble those in schizophrenia. Repeated exposure to social stress enhances the behavioral response of rats to dopamine agonists and leads to mesolimbic dopaminergic hyperactivity,²⁴ which has been implicated in the pathogenesis of schizophrenia.²⁵

Confounding and/or Mediating Factors

The effects of several social and psychological factors on the associations between schizophrenia and identity were investigated by adding these separately to the regression model. The influence of ethnic identity on schizophrenia risk was partly attenuated by cannabis use, self-esteem, and perceived social support. Cannabis use may be a confounding as well as a mediating factor. It not only has been related to the onset of schizophrenia²⁶ but may also be a behavioral consequence of the social stress of negative ethnic identity. Indeed, in our total sample, cannabis use was correlated to negative affective ethnic identity ($r = .22$, $P < .005$).

Lack of ethnic identification may also lead to social isolation and less social support (correlation between negative affective ethnic identity and social support: $r = -.22$, $P < .005$). Social support increases access to normalizing explanations for anomalous perceptual experiences and abnormal beliefs that are present in individuals at high risk for developing psychosis.²⁷ Whereas social isolation may contribute to the acceptance of a psychotic appraisal of these early abnormal mental states, a social network may have a normalizing function, thus preventing transition into psychosis.²⁸

Limitations

Several limitations are inherent to the case-control design. First, because the interviews were conducted (shortly) after the first episode of schizophrenia, the results may have been influenced by the illness. We have tried to minimize this potential bias by instructing the patients that the interview concerned the period before the onset of illness. Still, it is possible that (the early stage of) the illness leads to negative feelings about being ethnic and to more positive feelings about being Dutch, for instance in patients who blame their problems to their membership of an ethnic group or who feel rejected by this group.

This issue of reverse causality also applies to the potential mediating factors. For instance, low social support from family and other members of the own ethnic group may lead to a weak and negative ethnic identity.

Second, it is difficult to assess experiences, behaviors, and opinions accurately in retrospect. This applies to all participants because we interviewed the controls on the same time period as the case they were matched to, but problems with recall are likely to be larger for cases than for controls as a result of cognitive impairments caused by the illness. Additional analyses showed that there were no significant differences between scores of cases and their key informants (available on request), suggesting that recall bias cannot explain the results.

The sample size was relatively small. Comparisons between cases and siblings may have been underpowered because only 63 siblings participated, and the matched case-control design required conditional analyses. This had large consequences for the statistical power, as the pairwise analysis implied that the data of 37 cases could not be used in these comparisons.

All consecutive first-episode schizophrenia cases between 2000 and 2005 were eligible for the study, but not all patients participated. It is conceivable that those individuals who were oriented more toward their own ethnic group lost contact with psychiatric services in the early phase of treatment or that they refused to participate. However, the same selection bias would occur in the control groups.

The general hospital controls may not have been representative for the general immigrant population, but the choice for a control group selected from immigrants who made contact with nonpsychiatric secondary health-care services reduced selection bias as a result of pathways to care, as the schizophrenia cases were also recruited from secondary psychiatric services. Still, it may be argued that immigrants who seek help for their physical health problems have a more positive attitude toward Dutch society than schizophrenia patients, a proportion of whom has been compelled into contact with mental health services. This type of bias would lead to an underestimation of the effect of negative ethnic identity.

In addition, the very diverse complaints for which the controls made contact make it very unlikely that their somatic illness would be related to ethnic identity.

We had also included the ICSEY measures of acculturation strategies in the study,¹⁴ measuring preference for assimilation, integration, separation, and marginalization in 5 domains of life: cultural traditions, language, marriage, social activities, and friends. The scales, however, had low Cronbach α 's in our study sample (.34–.58), indicating that these measures were not very reliable. Therefore, we did not report the results in the main analyses, although the results support the other findings, as cases had significantly higher scores on assimilation and marginalization than both control groups (results available on request).

Previous Findings

These results are consistent with reports of a higher incidence of schizophrenia among ethnic minorities living in neighborhoods where their own ethnic group comprises a small proportion of the population.^{6,7} Those who live in low-ethnic density neighborhoods must contend with the triple burden of increased exposure to prejudice, reduced social support, and fewer possibilities for positive ethnic identification,¹² factors that are likely to increase the social stress of minority status.

Previous studies have found variable and modest associations of low family socioeconomic status and incidence of schizophrenia²⁹ and have suggested that socioeconomic disadvantage may contribute to the increased incidence among immigrants.³⁰ In our data, there were no significant differences in parental socioeconomic status between the groups, but it was very low in all groups. Low socioeconomic status may represent a situation of social exclusion,²⁹ particularly for individuals who compare themselves predominantly with the advantaged majority group.^{11,13}

Conclusions

This study is the first to investigate associations between ethnic/national identity and schizophrenia in ethnic minorities and found that negative ethnic identity may be related to schizophrenia risk. These results should be interpreted with caution, given the complexity of the concepts, the inherent difficulties in measuring these, and the methodological limitations of the case-control design. Future research might include identity measures in studies among high-risk individuals in order to investigate whether weak ethnic identity predicts transition into psychosis. If weak ethnic identity is a risk factor for schizophrenia, preventive interventions may be developed to empower young members from ethnic minority groups.

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