Research study

**Abstract**

**Introduction**

Concerns about the supposed cross-cultural differences in the diagnosis and risk factors of depressive disorders among non-Western ethnic minority groups in Western countries, may lead to misdiagnosis or under-treatment. We compared clinical manifestations of depressive disorders and depressive symptoms in a series of population studies in native Dutch, Turkish-Dutch and Moroccan-Dutch citizens of Amsterdam, the Netherlands. This paper summarises and discusses the results.

**Materials and methods**

During home visits, bilingual, gender-matched interviewers assessed depressive and anxiety disorders in 812 respondents using structured diagnostic interviews. Additional assessments included symptom levels, personality dimensions, religious coping and functional impairments.

**Results**

The symptom profile of depressive disorder and its association with anxiety disorders is comparable in all ethnic groups. In the ethnic minority groups and in native Dutch, depression and anxiety are associated with high levels of neuroticism. Across ethnic groups, depression is accompanied by religious struggle. Depression is equally associated with functional impairment across ethnic groups.

**Discussion**

The outline that emerges from these findings is that ethnicity is not a defining feature in the manifestations of depression in Turkish-Dutch and Moroccan-Dutch citizens in Amsterdam. In clinical practice, these findings may help to diminish concerns about the application of state-of-the-art diagnosis and treatment of depression in these patients.

**Conclusion**

In contrast to clinical impression, a series of population studies shows that ethnic disparities in manifestations of depression in migrants and natives in the Netherlands are absent or limited.

**Introduction**

The most influential manual for psychiatric disorders, the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) explicitly warns in its section on major depressive episode: ‘Culture can influence the experience and communication of symptoms of depression. Under-diagnosis or misdiagnosis can be reduced by being alert to ethnic and cultural specificity in the presenting complaints of a Major Depressive Episode. For example, in some cultures, depression may be experienced largely in somatic terms, rather than with sadness or guilt’.

Uncertainty in clinicians about the validity of a diagnosis of depressive disorder according to DSM-IV-TR in patients from non-western backgrounds may subsequently lead to under-treatment.

Early clinical studies focused on the exotic and were peppered with ‘plastered’ by cultural modelling. Similarities in manifestations of depression in Turkish-Dutch, Moroccan-Dutch and native Dutch citizens of Amsterdam. In 1973, Julian Leff was one of the first to introduce epidemiological methods to make systematic cross-cultural comparisons. The introduction of the DSM-III in 1980 stimulated a series of cross-national studies on the prevalence, course and outcome of major psychiatric disorders, which confirmed the assumption that depression is a medical condition occurring world-wide. But questions remained on the ‘strangeness’ of the symptoms and pathogenesis of depression and anxiety in patients from non-Western cultures.

In the Netherlands, labour migration from Turkey and Morocco started halfway through the 1960s, when Western Europe’s economy recovered rapidly and large labour shortages appeared. In Amsterdam, first- and second-generation immigrants from Turkey and Morocco form 14.3% of the total population.

A recent study by our group showed that the prevalence of depressive and/or anxiety disorders is higher in Turkish-Dutch women compared to native Dutch women in Amsterdam.

The aim of the studies described in this paper was a cross-cultural comparison of manifestations of depression in Turkish-Dutch, Moroccan-Dutch and native Dutch citizens of Amsterdam. We covered several topics:

- **a)** Symptom profile of depression. While the ‘biological core’ of depressive illness is supposed to be universal, the psychological expressions of depressive disorder are expected to be ‘plastered’ by cultural modeling. We aimed to study the depressive symptom profile, and hypothesised mood...

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Symptoms and cognitive symptoms of depression to vary across migrant groups and native Dutch, while psychomotor and vegetative symptoms would be equally present in all groups.

d) Association of religious coping and depression. Depressive patients can derive consolation as well as struggle from their religion. While the native Dutch are largely secularised or adhere to Christian traditions; the majority of the Turkish-Dutch and Moroccan-Dutch are fairly orthodox Muslims. We explored whether the association of religious coping and depression in the different ethnic groups dispose of universal characteristics or whether they reflect cultural diversity.

e) Association of depression and functional impairments. Patients from non-Western backgrounds have been described to under-report as well as over-report their depressive symptoms. Under-reporting may be due to a number of reasons, like social embarrassment or a tendency to express somatic symptoms rather than emotional distress. On the other hand, clinical reports and impressions suggest exaggeration of depressive symptoms by some non-Western populations. For example, in a British-Turkish comparative clinical study, Turkish depressive patients in Istanbul showed a higher tendency to emphasise symptoms. A high tendency to report depressive symptoms has also been suggested as an explanation for the high levels of depressive symptoms found in population studies of Turkish and Moroccan immigrants in the Netherlands and Belgium. We investigated the association between depressive symptoms and functional disability across the two ethnic minority groups and the native Dutch study group.

The studies are published separately and as part of a thesis by the first author. This paper summarises the main findings and discusses the clinical implications. For more details on the assessment, statistical analyses and results of the studies, we refer to the original articles.

Materials and methods
This work conforms to the values laid down in the Declaration of Helsinki (1964). The protocol of this study has been approved by the relevant ethical committee related to our institution in which it was performed. All subjects gave full informed consent to participate in this study.

Sample
Data were collected during the second phase of the Amsterdam Health Monitor 2004/2005. The Amsterdam Health Monitor is a survey conducted among a sample of the adult population of Amsterdam, stratified by age and ethnicity. Ethnicity is based on the country of birth of the respondent and his/her parents as registered in the municipal register. A respondent was considered to be Turkish or Moroccan if he or she was born in Turkey or Morocco respectively or if at least one parent was born there. Respondents were considered native Dutch if both the respondent and both parents were born in the Netherlands.

Respondents were included in two phases: the first phase (2004) focused on ethnic disparities in cardiovascular risk factors; the second phase (2005) on mental health (summarised in this paper) and access to mental health care. In the first phase, 1,449 respondents from the four ethnic groups were included (response 45%). Selection
bias cannot entirely be ruled out, although indicators on income and employment status were comparable between respondents and the population of Amsterdam. Of these, 1,210 agreed to be approached for the second phase, of which 812 participated in the second phase (response 56%). Respondents and non-respondents in the second phase did not differ significantly in psychological distress, uptake of mental health care and presence of chronic somatic disorders (all assessed in the first phase).

**Instruments**

Mental health was assessed with the Composite International Diagnostic Interview, section D and E on anxiety and depressive disorders, version 2.1 and the Symptom Checklist-90-Revised, subscales depression, anxiety and phobic anxiety. Additional measurements included the NEO Five-Factory Inventory (NEO-FFI), Pargament's Brief Religious Coping scale (Brief RCOP) and the World Health Organization Disability Assessment Schedule II (WHODAS II).

The CIDI is a structured psychiatric interview developed by the WHO for use in cross-national studies. The validity and reliability of the CIDI have proven adequate in a number of field trials around the world, including trials in Turkey, but not in Morocco. For Turkish-speaking respondents, the official Turkish translation of the CIDI was used. The official Arabic CIDI translation was used as a source of information to translate the key terms into Moroccan Arabic. All other questionnaires were translated into Turkish, and the key terms into Moroccan Arabic. After that, they were translated back into Dutch. If the translation differed from the original Dutch questionnaire, changes were discussed with the translators and adjusted. All respondents were interviewed by bilingual interviewers, matched for gender and ethnicity.

Interviews were held in Dutch, Turkish, Moroccan or Berber (a non-written language among Bedouins in western North Africa).

**Analyses**

a) For the analyses of the symptom profile of depression, we categorised the symptoms assessed with the CIDI 1.2 and the SCL-90-R in four domains: mood disturbances, psychomotor disturbances, cognitive disturbances and vegetative disturbances. We used differential item functioning to analyse ethnic differences in the endorsement of the 16 separate depressive symptoms from the SCL-90-R and the 17 separate symptoms from the CIDI 1.2.

   Based on the CIDI, associations between depressive disorder severity (in four grades) and the presence of an anxiety disorder were computed using logistic regression analyses. Ethnic group and interaction terms (ethnic minority group x depressive disorder severity) were included and the latter tested for contribution to the model.

b) To test ethnic differences in the association between each of the NEO-FFI factors and the presence of a CIDI diagnosis of anxiety disorder and/or depressive disorder, we conducted a series of logistic regression analyses. The CIDI diagnosis was used as the dependent variable; the NEO-FFI factor, ethnicity and the interaction term were entered stepwise in the model. The contribution of the interaction term to the model was tested for significance. In order to assess the association of personality dimensions with depressive and/or anxiety symptoms, the SCL-90-R sum score was divided into tertiles, with cut-off scores at sum scores 36 and 46. Likewise, a series of multinomial analyses was conducted with the SCL-90-R score (in tertiles) as the dependent variable.

c) The association between religious coping strategies (Brief RCOP items) and depressive symptoms (z-scored SCL-90-R subscale depression scores) were computed using linear regression analysis. Product terms between ethnic group and each religious coping variable were included in the model and tested for significance.

d) Using multiple linear regression analyses with the WHODAS II sum score as dependent variable and, subsequently, the CIDI diagnoses and SCL-90-R sum scores as independent variables, we tested the contribution of the interaction term with ethnicity.

**Results**

**Research population and response**

Socio-demographic and clinical characteristics of the study population are summarised in Table 1. The distribution of age and sex was different in the two immigrant groups and native Dutch subjects. This reflects both differences in the composition of the population of Amsterdam as well as differences in response rates. The majority of Turkish-Dutch and Moroccan-Dutch respondents were first-generation immigrants, who had received primary education only, because they typically grew up in rural, underdeveloped areas in their countries of origin. In the Netherlands, their level of integration is limited, which necessitated for the majority of respondents interviews in their...
Summary of main results

a) Symptom profile of depression

Our hypotheses that cultural differences would show most readily in the domains of cognitive evaluations or mood disturbances, but would be absent in the domains of psychomotor symptoms and the domain of vegetative symptoms were not confirmed by our findings: the five SCL-90-R and the five CIDI symptoms which showed item bias were scattered over the four domains.15

b) Co-morbidity of anxiety disorders and depressive disorders

The prevalence rate of co-morbid anxiety and depressive disorders increased with each increase in level of severity of the depressive disorder. The odds ratio of anxiety for depressive severity in Dutch natives is 2.6 (95% CI: 1.6–4.2). Compared to native Dutch subjects as reference group (OR set to 1), the unadjusted odds ratio of the presence of an anxiety disorders for depressive disorder severity was 1.1 (p = 0.849) in Turkish-Dutch and 1.6 (p = 0.221) in Moroccan-Dutch subjects.16

c) Association of personality and depression and/or anxiety

The association between personality factors and disorders (CIDI) or symptoms (SCL-90-R) of anxiety and depression appeared to be very similar in the Turkish-Dutch, Moroccan-Dutch and native Dutch respondents:

Table 1 Socio-demographic and clinical characteristics of the study sample

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Native Dutch (N = 321)</th>
<th>Turkish-Dutch (N = 213)</th>
<th>Moroccan-Dutch (N = 191)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (SD)</td>
<td>54.1 (14.6)</td>
<td>47.3 (14.2)</td>
<td>49.6 (14.4)</td>
</tr>
<tr>
<td>Female sex</td>
<td>58.3%</td>
<td>60.1%</td>
<td>47.1%</td>
</tr>
<tr>
<td>Mean age at immigration (SD)</td>
<td>—</td>
<td>25.2 (10.4)</td>
<td>27.1 (10.2)</td>
</tr>
<tr>
<td>Second generation immigrant</td>
<td>—</td>
<td>7.5%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Education: none or primary only</td>
<td>19.7%</td>
<td>59.5%</td>
<td>60.9%</td>
</tr>
<tr>
<td>Language preference: non-Dutch</td>
<td>—</td>
<td>89.2%</td>
<td>68.3%</td>
</tr>
<tr>
<td>Employment status: unemployed</td>
<td>6.8%</td>
<td>25.2%</td>
<td>23.2%</td>
</tr>
<tr>
<td>Gross family income &lt; €1,350</td>
<td>31.0%</td>
<td>74.5%</td>
<td>79.7%</td>
</tr>
<tr>
<td>CIDI major depressive disorder</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-Month prevalence</td>
<td>4.1%</td>
<td>16.5%</td>
<td>5.8%</td>
</tr>
<tr>
<td>SCL-90-R depression scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sum score (SD)</td>
<td>20.9 (7.2)</td>
<td>30.1 (14.1)</td>
<td>26.2 (12.6)</td>
</tr>
</tbody>
</table>

\(1^a\) First-generation immigrants only.
\(1^b\) Language used during interview. For Turkish respondents, native language is Turkish. For Moroccan respondents, native language is Moroccan-Arabic or Berber language.
\(1^c\) Not unemployed includes people with paid jobs and students, housewives and retired elderly.
\(1^d\) Prevalence in study population, not weighed by sex or age.

native language. Social economic status (employment status, family income) was lower in the two minority groups compared to native Dutch subjects.

Discussion

Across the ethnic groups, negative religious coping strategies had several positive associations with depressive symptoms and major depressive disorder: the most robust association was found for the item 'worried whether God has abandoned me'. The interaction term with ethnicity was not significant.17

d) Association of religious coping and depression

The highest levels of disability, expressed by the highest WHODAS II scores, were found in Turkish-Dutch respondents, followed by Moroccan-Dutch respondents. Mean scores differed significantly between ethnic groups. Depression (assessed either by CIDI or SCL-90-R) was equally associated with functional impairment across ethnic groups, since the interaction terms with ethnicity were not significant.18

e) Association of depression and functional impairments

The highest levels of disability, expressed by the highest WHODAS II scores, were found in Turkish-Dutch respondents, followed by Moroccan-Dutch respondents. Mean scores differed significantly between ethnic groups. Depression (assessed either by CIDI or SCL-90-R) was equally associated with functional impairment across ethnic groups, since the interaction terms with ethnicity were not significant.18

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Dutch group, depression and anxiety are associated with high levels of neuroticism. Across ethnic groups, depression is accompanied by religious struggle, in particular feeling abandoned by God. Depression is equally associated with functional impairment across ethnic groups.

Several limitations of the studies deserve discussion. The net-response rate of 26% over the two phases is low. Although selective non-response has been sorted out for some relevant characteristics, the question remains whether the results can be generalised to the entire ethnic sub-populations of Amsterdam. Eventually, the Turkish-Dutch and Moroccan-Dutch respondents in the Amsterdam Health Monitor consisted mainly of low-educated, first-generation immigrants, who preferred to be interviewed in their own language. Therefore, the results might tend to overestimate differences between non-Western migrants and native Dutch respondents. In this light, our results of similarity in manifestations of depression migrants and native Dutch are even more remarkable.

Another limitation in all studies in this thesis is the definition of ethnic background. Ethnicity was defined using a proxy definition based on country of birth of the respondent and of his/her parents. This definition obscures diversity within the ethnic minority groups, like variations in ethnic subgroups, acculturation status and social status.

Furthermore, a challenge lies in method bias and construct bias. Both outcome instruments (CIDI, SCL-90-R) have been used in other cross-cultural studies. Moreover, all studies used a design in which intra-cultural differences are compared across cultures. Method bias is less likely to jeopardise the results of this type of analyses. Still, in broader perspective, the studies risk to suffer from construct bias, or ‘categorical fallacy’, as anthropologist Arthur Kleinman called it: the erroneous assumption that conceptual categories that work well in one cultural context (i.e., ‘depression’ in as a disease category conceived in Western cultures), will have the same meaning and utility in another (i.e., non-Western immigrant groups in the Netherlands). Extensive epidemiological research, pioneered by the WHO, has confirmed the assumption that depressive disorder is condition occurring worldwide. In a way, the studies summarised in this paper are studies on construct validity of depression. By studying the symptom profile of depression and the association with anxiety, personality, religious coping and functional impairment, we investigated the cross-cultural equivalence in these aspects of depression.

The outline that emerges from the studies in this paper is that ethnicity is not a defining feature in various aspects of depression in Turkish-Dutch and Moroccan-Dutch compared to native Dutch citizens of Amsterdam. While these findings may help to diminish concerns about the applicability of state-of-the-art diagnostic assessments in these groups, the question remains whether specific treatment is warranted. The access to mental health services has been shown to be equal for these two minority groups. There is some evidence that treatment outcome is less favourable, although there is a paucity of data on effectiveness of culturally adapted treatments. The findings discussed in this paper underscore the point of departure in the Dutch Supplement on cross-cultural topics in the standard Multidisciplinary Guideline for Depression: The standard guideline is applicable to patients from foreign background, unless interventions tailored to specific ethnic groups have proved more effective.

Conclusion

Depressive disorders and symptoms have similar manifestations in Turkish-Dutch and Moroccan-Dutch as in native Dutch persons. These findings may help to diminish concerns about the applicability of the regular diagnostic procedures and stimulate adequate treatment of depressive disorder in these two major ethnic minority groups in the Netherlands.

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