Soc Psychiatry Psychiatr Epidemiol (2014) 49:1139–1149
DOI 10.1007/s00127-014-0837-9

ORIGINAL PAPER

Equity of access to mental health care for anxiety and depression among different ethnic groups in four large cities in the Netherlands

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Received: 14 January 2013 / Accepted: 3 February 2014 / Published online: 19 February 2014
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Abstract
Purpose This study explored (in)equities between ethnic groups in the Netherlands regarding their access to health care for symptoms of common mental disorders (CMD).
Methods Data were used from a health survey conducted in four Dutch cities in 2008, including 11,678 Dutch, 700 Turkish, 571 Moroccans, 956 Surinamese and 226 Antilleans/Arubans. The prevalence of a medium to high risk of having CMD per ethnic group and of health care consumption by ethnic groups of people, likely having CMD, was calculated, using SPSS Complex Samples weighting for gender, age and district. Logistic regression models were used for assessing the association between health care utilisation and need, demographic factors, social structure and enabling resources.
Results The prevalence of a medium to high risk of having CMD was 42.9 % (Dutch), 50.3 % (Turkish), 37.3 % (Moroccans), 51.5 % (Surinamese) and 44.9 % (Antilleans/Arubans). The 1-year prevalence of contacts with the general practitioner by ethnic groups of people who were likely having CMD was 81.2 % (Dutch), 87.2 % (Turkish), 88.4 % (Moroccans), 88.6 % (Surinamese) and 76.6 % (Antilleans/Arubans). Concerning specialised mental health care, this one-year prevalence was 15.9 % (Dutch), 25.8 % (Turkish), 19.7 % (Moroccans), 17.1 % (Surinamese) and 20.5 % (Antilleans/Arubans). The elevated use of health care by some ethnic minority groups was partly associated with need and demographic factors.
Conclusions There are no indications for an inequitable access to health care for symptoms of CMD among different ethnic groups in the Netherlands.

Keywords Ethnic groups · Mental health services · Mental disorders · Health care quality, access, and evaluation

Introduction

There are indications that ethnic minority groups differ from native West European inhabitants in their risk of mental health problems [1], due to variations in biological, psychological and social determinants [2]. At the same time, immigrant groups vary in the extent in which they consume mental health care [3]. According to Andersen's Behavioural Model of Services Use, such differences are acceptable if they result from variations in health care need and/or demographic factors [4]. On the other hand, if differences in health care utilisation are related to social structure or enabling resources, differences may be indicative of inequitable access to health care, and are therefore unwanted [4–6].

This study focuses on possible inequities between ethnic groups in the Netherlands regarding their access to health services for symptoms of anxiety and depression, also referred to as common mental disorders (CMD). In the Netherlands, 20.3 % of the population consists of immigrants [7]. The largest groups are of Turkish and Moroccan origin, followed by immigrants from Surinam, the Netherlands Antilles and Aruba. Most immigrants live in the four largest cities: Amsterdam, Rotterdam, The Hague and Utrecht [8]. Previous studies yielded as results that ethnic groups in the Netherlands differ in their need for mental

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health care consumption, i.e. the extent to which they suffer from CMD. It appeared that Turkish immigrants more often suffer from anxiety/insomnia and severe depression than the general population [9]. In a more recent study, it was found that depressive and anxiety disorders had a higher prevalence among Turkish women and Moroccan men in Amsterdam than among ethnic Dutch inhabitants [10]. The evidence on Surinamese migrants is conflicting, with studies reporting more anxiety and depression symptoms [11, 12] and other reporting less [10, 13].

In addition, it has been suggested that non-western immigrants in the Netherlands consume less mental health care than native Dutch people [14–16]. A primary concern is that, for various reasons, non-western ethnic minority patients are less likely to seek treatment for mental health problems than people from western countries [17]. If professional help is sought, the mental health problem is also supposedly less likely to be detected and diagnosed [18]. Recognition of depression among non-western patients by physicians is believed to be more complex, since they are supposedly more likely to hide or somatise psychological distress [19], or because problems in the communication occur between patients and physicians [20–22].

In reality, the evidence of the presence of ethnic disparities regarding mental health care consumption in the Netherlands is mixed. As far as CMD are concerned, a survey among the general population of Amsterdam in 2005, which included a large sample of first-generation Turkish and Moroccan immigrants and ethnic Dutch, found evidence to suggest that specialised mental health care for CMD was fairly equally used by these ethnic groups [23, 24]. This is further supported by studies by Schrier et al. [25] and Fassaert et al. [26], who suggested that migrants were catching up in access to and use of outpatient mental health services. In a recent report on Dutch mental health services, the Netherlands Institute of Mental Health and Addiction (Trimbos-instituut) claimed that ethnic minority groups were indeed increasingly able to find their way to mental health care [27]. This positive development, however, applied mainly to Turkish and Moroccan clients in outpatient mental health care [23, 28]. Although Surinamese and Antillean clients were catching up as well, their share in outpatient mental health care utilisation was still lower compared to the ethnic Dutch population.

To investigate if concerns about ethnic differences in access to mental health care for CMD are justified, it is important to continuously monitor ethnicity as a factor in mental health care consumption and to identify determinants that may explain possible ethnic differences. This study aims to do so in a large population-based sample, taken from the four largest urban areas in the Netherlands, namely Amsterdam, Rotterdam, The Hague and Utrecht.

Therefore, the questions that were addressed in this study were:

1. What is the prevalence of a medium to high risk of having CMD among different ethnic groups in the four largest cities in the Netherlands?
2. What is the extent of health care use among citizens who are likely having CMD belonging to different ethnic groups in the four largest cities in the Netherlands?
3. To what extent do possible ethnic differences in mental health care utilisation correlate with need, social structure and enabling factors?

Methods

Procedure

Data were used from the health survey conducted by Public Health Services in four urban areas (Amsterdam, Rotterdam, Utrecht and the Hague) in 2008. For this survey random samples of the population registers were taken, stratified by age groups and city district. Selected respondents were asked to fill in a written questionnaire, sent by post or by internet, or to take part in a face-to-face interview. The interview was offered to respondents who found it difficult to complete the questionnaire.

Response

In total 20,877 respondents completed the questionnaire, which equals a response of 50 % (54 % in Utrecht, 51 % in The Hague, 50 % in Amsterdam and 47 % in Rotterdam). In all cities response rates were higher among women than among men. Furthermore, the response rate was higher among older people. People with a native Dutch background responded most often (57 %), while people with a Moroccan background responded the least (30 %). The response rates of Turkish, Surinam and Antillean/Aruban immigrants were respectively 41 %, 39 % and 37 %. For more details, we refer to the report of Van Veelen et al. [29].

Measures

The actual use of health services is an indication that access to health care is realised; the use of health services is therefore considered to be a proxy-measure for access to health care [4]. The Netherlands have a health care system in which general practice plays a central role, as it is mandatory for patients to see first their general practitioner (GP) before consulting a medical specialist, e.g. in specialised mental health services. Thus, in this study, health

care use is divided into the use of GP care and the use of specialised mental health care. The use of GP care was measured by a question whether or not the respondent contacted a GP in the year preceding the survey. Specialised mental health care use was measured by a question whether or not a psychiatrist, psychologist or a mental health care facility was visited in that same year.

Ethnicity as a concept is thought to represent a number of characteristics [30]. Although ethnic background is preferably defined by a combination of these characteristics, it is common in the Netherlands to measure it by country of birth alone [31]. Country of birth is thus used as a proxy measure of ethnic background [32, 33]. Four non-western ethnic groups were included: (1) Turkish, (2) Moroccan, (3) Surinamese, (4) Dutch Antillean and Aruban. They were considered as first-generation immigrants if they were born in a foreign country and had at least one parent who was born in that country too. They were considered to be second-generation immigrants if they were born in the Netherlands and had at least one parent who was born in a foreign country [34]. If both parents were born in different countries, the place of birth of the mother was used to determine the ethnic background of the immigrant of the second generation. In all comparisons, native Dutch served as a reference group.

Need factors and demographic factors

Symptoms of CMD were measured by the Dutch version of the Kessler Psychological Distress scale (K10). The K10 screens for symptoms of anxiety and depression [35, 36]. The K10 consists of 10 items referring to the past 4 weeks, with five response categories: (1) none of the time, (2) a little of the time, (3) some of the time, (4) most of the time and (5) all of the time. A total score of 16 or higher indicates for western populations a medium to high risk of developing an anxiety or depressive disorder [37]. Previous research suggested that this corresponds with a cut-off score of 21 among Turkish immigrants and of 22 among Moroccan immigrants; these cut-off scores were therefore used in the present study [36]. Information on differential cut-off scores for Surinamese and Antillean/Aruban immigrants was not available, and therefore for these groups the general cut-off of 16 that was used for the native Dutch was used. The presence of physical health problems was taken into account as well, since the GP can also be contacted for physical health problems. The health survey included 19 of the most common physical conditions (e.g. diabetes, cerebral haemorrhage, myocardial infarction). In addition, sex and age were included representing biological predisposing factors.

Social structure factors and enabling resources

Social structure factors and enabling resources were measured in terms of marital status, employment status, level of education, financial situation and social loneliness [4]. Social loneliness was measured by a subscale of the De Jong Gierveld loneliness scale [38]. Items of this subscale contain five statements (e.g. there is always someone in my environment from whom I can get help for my daily problems) with the response categories no, more or less and yes. The sum varies from 0 to 5 and gives an indication of the level of social loneliness. In this study, a sum of 0–2 was considered to be an absence of social loneliness, while a sum of 3 or more was seen as an indication for social loneliness.

Analysis

All statistical analyses were done in SPSS version 19.0. The analyses included only Dutch, Turkish, Moroccan, Surinamese or Antillean/Aruban respondents with complete information on all relevant variables. The difference between included and excluded cases was analysed to detect possible selection bias (Chi square for categorical variables and Mann–Whitney *U* test for continuous variables). The prevalence of a medium to high risk of having CMD in the general population, as well as health care utilisation by ethnic groups of people likely having CMD was calculated using SPSS Complex Samples, weighting for gender, age and city district. In addition, the association between health care utilisation and ethnic background was analysed using logistic regression models. For the analyses on determinants of health care use, only respondents with a medium to high risk of having CMD were included. Logistic regression models were analysed for GP care and specialised mental health care separately, using the forced entry method in three blocks. First, ethnic background and generational status were entered. Second, age and gender were introduced. In the model for GP care the number of physical disorders was added as well. Third, social structure factors and enabling resources were entered. Odds ratios with 95 % confidence intervals and levels of statistical significance were reported for each variable.

Results

Research population

The Amsterdam Health Monitor included 17,486 Dutch, Turkish, Moroccan, Surinamese and Antillean/Aruban respondents after excluding respondents with another ethnic background. Of these, 80.8 % had complete data on all

Table 1 Socio-demographic characteristics of the study sample per ethnicity and generation

	All	Dutch	Turkish		Moroccan		Surinamese		Antillean/Aruban	
	($N = 14{,}131$)	($N = 11{,}678$)	First generation ($N = 531$)	Second generation ($N = 169$)	First generation ($N = 440$)	Second generation ($N = 131$)	First generation ($N = 717$)	Second generation ($N = 239$)	First generation ($N = 184$)	Second generation ($N = 42$)
Gender										
Women, *N* (%)	7,870 (55.7)	6,484 (55.5)	265 (49.9)	93 (55.0)	222 (50.5)	81 (61.8)	435 (60.7)	157 (65.7)	106 (57.6)	27 (64.3)
Age mean, (SD)	47.9 (19.5)	49.4 (19.6)	42.4 (14.6)	22.0 (6.1)	43.1 (15.3)	21.6 (5.2)	49.5 (15.9)	26.2 (11.1)	46.4 (15.9)	29.2 (12.0)
N chronic physical conditions										
Range = 0–17; Mean (SD)	1.4 (1.8)	1.3 (1.7)	2.5 (2.8)	0.8 (1.3)	1.8 (2.2)	0.7 (1.1)	1.9 (2.3)	0.8 (1.3)	1.6 (1.8)	1.1 (2.6)
Marital status										
Living alone, *N* (%)	6,059 (42.9)	4,870 (41.7)	130 (24.5)	128 (75.7)	94 (21.4)	101 (77.1)	393 (54.8)	184 (77.0)	128 (69.6)	31 (73.8)
Employment status										
Not working, *N* (%)	6,427 (45.5)	5,187 (44.4)	298 (56.1)	92 (54.4)	273 (62.0)	70 (53.4)	296 (41.3)	106 (44.4)	88 (47.8)	17 (40.5)
Education										
Low, *N* (%)	1,962 (13.9)	1,244 (10.7)	252 (47.5)	22 (13.0)	241 (54.8)	9 (6.9)	147 (20.5)	18 (7.5)	22 (12.0)	7 (16.7)
Middle, *N* (%)	7,568 (53.6)	6,172 (52.9)	237 (44.6)	127 (75.1)	166 (37.7)	100 (76.3)	449 (62.6)	170 (71.1)	130 (70.7)	17 (40.5)
Being able to manage on the monthly wages										
Not being able, *N* (%)	2,642 (18.7)	1,900 (16.3)	203 (38.2)	45 (26.6)	136 (30.9)	27 (20.6)	207 (28.9)	60 (25.1)	56 (30.4)	8 (19.0)
Social loneliness										
Social lonely, *N* (%)	3855 (27.3)	2821 (24.2)	284 (53.5)	67 (39.6)	203 (46.1)	52 (39.7)	263 (36.7)	74 (31.0)	79 (42.9)	12 (28.6)

Table 2 Prevalence of a medium to high risk of having common mental disorders per 100 citizens of the four largest cities in the Netherlands, weighted for gender, age and district

	Dutch[a] ($N = 11,678$)	Turkish[b] ($N = 700$)	Moroccan[c] ($N = 571$)	Surinamese[a] ($N = 956$)	Antillean/ Aruban[a] ($N = 226$)
First generation	–	54.8	39.2	52.2	44.0
Second generation	–	35.5	31.2	49.6	47.4
Total	42.9	50.3	37.3	51.5	44.9

[a] Cut-off score of ≥16 on K10

[b] Cut-off score of ≥21 on K10

[c] Cut-off score of ≥22 on K10

Table 3 1-year prevalence of health care contacts per 100 citizens with a medium to high risk of having common mental disorders in the four largest cities in the Netherlands, weighted for gender, age and district

	Dutch[a] ($N = 5022$)	Turkish[b] ($N = 351$)	Moroccan[c] ($N = 212$)	Surinamese[a] ($N = 490$)	Antillean/Aruban[a] ($N = 109$)
GP care					
First generation	–	88.0	89.5	89.1	78.6
Second generation	–	83.0	84.0	87.2	71.8
Total	81.2	87.2	88.4	88.6	76.6
Specialised mental health care					
First generation	–	25.7	22.3	16.7	18.5
Second generation	–	25.9	9.7	18.4	25.4
Total	15.9	25.8	19.7	17.1	20.5

[a] Cut-off score of ≥16 on K10

[b] Cut-off score of ≥21 on K10

[c] Cut-off score of ≥22 on K10

relevant variables ($N = 14,131$). Excluded cases seemed to differ significantly from included cases on the relevant variables ($p < 0.01$), although these cases had missing values on one or more of these variables. Excluded cases were more often member of a non-western ethnic group. Excluded cases had higher mean levels of CMD symptoms, they more often contacted the GP and they less often visited specialised mental health care than included cases. Table 1 presents the descriptions of the included participants.

Table 2 shows the weighted prevalence of people with a medium to high risk of having CMD per ethnic group and generation. It shows that, compared to the native Dutch people, the prevalence was higher among Turkish and Surinamese respondents ($p = 0.00$). Differences in risk of having CMD were absent between native Dutch and Antillean/Aruban immigrants ($p = 0.63$) and between native Dutch and Moroccan immigrants ($p = 0.52$). Only among Turkish immigrants the difference in prevalence of a medium to high risk of having CMD between generations was significant ($p = 0.00$).

Table 3 shows that the majority of respondents with a medium to high risk of having CMD contacted the GP in the preceding year. Ethnic minority groups contacted the GP significantly more often than native Dutch people ($p < 0.05$), with the exception of both generations of Antillean/Aruban immigrants ($p = 0.33$). First-generation immigrants tended to contact the GP more often than second-generation immigrants ($p = 0.09$). In addition, Table 3 shows that 15.9 % of native Dutch respondents with a medium to high risk of having CMD visited a mental health care specialist in the year preceding the survey. The four ethnic minority groups more often visited a mental health care specialist than the Dutch; this was significantly higher among the Turks ($p = 0.00$). Among second-generation Moroccan immigrants, mental health care utilisation was lower than that of the first-generation Moroccan immigrants ($p = 0.08$). In the Turkish group, a significant difference between generational groups was absent ($p = 0.98$).

Table 4 shows that first-generation Turkish, first-generation Moroccans and first-generation Surinamese who were likely having CMD, used GP care significantly more often than native Dutch. Physical disorders, gender and age had a significant impact on GP use, and after correction for these factors, differences between ethnic groups and ethnic Dutch respondents generally decreased. For first-generation Surinamese, these factors only partly formed an explanation of elevated care utilisation. Among second-generation Surinamese, correction for need and demographic factors resulted in a significantly higher GP use than among the Dutch. Educational level and social loneliness were independently associated with GP use, after correction for need and demographic factors. People with a low and middle education used more often GP care than people with a high education, while people who reported social loneliness used less GP care than people who were not social lonely. Correction for social structure and enabling resources had

Table 4 Association between ethnic background and 1-year contacts with the general practitioner among Dutch citizens with a medium to high risk of having common mental disorders ($N = 6,184$)

	Block 0 OR	Block 1 OR (95 % CI for OR)	Block 2 OR (95 % CI for OR)	Block 3 OR (95 % CI for OR)
Ethnic groups				
Constant	5.44	5.08	1.18	1.13
First-generation Turkish[a,b]		1.58 (1.09–2.30)*	1.22 (0.82–1.82)	1.18 (0.78–1.79)
Second-generation Turkish[a,b]		1.16 (0.57–2.36)	1.62 (0.77–3.39)	1.53 (0.72–3.22)
First-generation Turkish[a,b]		1.77 (1.07–2.94)*	1.41 (0.83–2.40)	1.36 (0.79–2.35)
First-generation Turkish[a,b]		0.84 (0.39–1.81)	1.15 (0.52–2.56)	1.09 (0.49–2.45)
First-generation Turkish[a,b]		1.90 (1.33–2.71)*	1.57 (1.09–2.27)*	1.50 (1.03–2.18)*
First-generation Turkish[a,b]		1.46 (0.83–2.57)	2.10 (1.18–3.75)*	2.06 (1.15–3.69)*
First-generation Antillean/Aruban[d,b]		1.14 (0.63–2.06)	0.99 (0.54–1.84)	0.98 (0.52–1.82)
Second-generation Antillean/Aruban		0.49 (0.19–1.27)	0.73 (0.27–1.98)	0.71 (0.26–1.92)
Need factors				
Physical disorders[e]			1.57 (1.48–1.67)*	1.56 (1.46–1.66)*
Demographic factors				
Women[f]			2.09 (1.80–2.41)*	2.05 (1.77–2.37)*
Age[g]			1.01 (1.01–1.01)*	1.01 (1.00–1.01)
Social structure/enabling resources				
Living alone/no stable relationship[h]				0.96 (0.82–1.12)
No employment status[i]				1.02 (0.86–1.21)
Low education[j]				1.36 (1.03–1.81)*
Middle education[j]				1.37 (1.16–1.62)*
Not being able to make ends meet[k]				0.99 (0.83–1.17)
Social lonely[l]				0.81 (0.69–0.95)*

*$p < 0.05$

[a] Cut-off score of ≥21 on K10

[b] 'Dutch ethnicity' served as the reference category

[c] Cut-off score of ≥22 on K10

[d] Cut-off score of ≥16 on K10

[e] Continuous variable

[f] 'Men' served as the reference category

[g] Continuous variable

[h] 'Living alone/no stable relationship' includes unmarried, divorced, widowed. 'Married/living together with a partner' served as a reference category

[i] 'No employment status' includes (early) pension, unemployed or unfit to work, houseman or housewife and student. 'Employed' served as the reference category

[j] 'Low education' contains all levels of education lower than the middle level of education. 'Middle education' contains the middle general extended education (mavo), lower vocational education (lbo), higher general extended education (havo), preparatory scientific education (vwo), middle vocational education (mbo). 'High education contains high vocational education (hbo) and scientific education (wo). 'High education' served as the reference category

[k] 'Being able to manage on the monthly wages' served as a reference category

[l] 'Absence of social loneliness' served as a reference category

no impact on the ethnic differences in GP care use; the high GP use among first- and second-generation Surinamese was independent of social loneliness and education.

Table 5 shows that first-generation Turkish and Moroccan, and the second-generation Antilleans/Arubans who were likely having CMD reported a higher use of specialised mental health care than native Dutch. None of the ethnic groups showed a significantly lower use of specialised mental health care. Adding gender and age to the model, the high specialised mental care consumption among second-generation Antilleans/Arubans reduced, while the high use among the first-generation Turkish and Moroccans remained. Higher age was significantly negatively related to the use of specialised mental health care.

Table 5 Association between ethnic background and 1-year contacts with specialised mental health services among Dutch citizens with a medium to high risk of having common mental disorders ($N = 6,184$)

	Block 0 OR	Block 1 OR (95 % CI for OR)	Block 2 OR (95 % CI for OR)	Block 3 OR (95 % CI for OR)
Ethnic groups				
Constant	0.18	0.17	0.29	0.23
First-generation Turkish[a,b]		1.82 (1.37–2.41)*	1.74 (1.31–2.31)*	1.75 (1.28–2.34)*
Second-generation Turkish[a,b]		1.54 (0.83–2.85)	1.11 (0.60–2.07)	0.96 (0.51–1.81)
First-generation Moroccan[c,b]		1.67 (1.15–2.41)*	1.63 (1.12–2.36)*	1.63 (1.09–2.43)*
Second-generation Moroccan[c,b]		0.61 (0.22–1.71)	0.43 (0.15–1.23)	0.37 (0.13–1.05)
First-generation Surinamese[d,b]		0.90 (0.66–1.23)	0.91 (0.67–1.24)	0.89 (0.65–1.22)
Second-generation Surinamese[d,b]		1.26 (0.78–2.02)	0.93 (0.57–1.51)	0.81 (0.49–1.33)
First-generation Antillean/Aruban[d,b]		0.92 (0.50–1.69)	0.89 (0.48–1.64)	0.75 (0.40–1.39)
Second-generation Antillean/Aruban[d,b]		2.90 (1.17–7.20)*	2.25 (0.90–5.62)	2.20 (0.86–5.60)
Demographic factors				
Women[e]			1.14 (0.99–1.32)	1.16 (1.00–1.34)
Age[f]			0.99 (0.98–0.99)*	0.99 (0.98–0.99)*
Social structure/enabling resources				
Living alone/no stable relationship[g]				1.43 (1.23–1.66)*
No employment status[h]				1.37 (1.16–1.62)*
Low education[i]				0.50 (0.39–0.64)*
Middle education[i]				0.55 (0.47–0.65)*
Not being able to make ends meet[j]				1.39 (1.19–1.62)*
Social lonely[k]				1.65 (1.42–1.92)*

*$p < 0.05$

[a] Cut-off score of ≥21 on K10

[b] 'Dutch ethnicity' served as the reference category

[c] Cut-off score of ≥22 on K10

[d] Cut-off score of ≥16 on K10

[e] 'Men' served as the reference category

[f] Continuous variable

[g] 'Living alone/no stable relationship' includes unmarried, divorced, widowed. 'Married/living together with a partner' served as a reference category

[h] 'No employment status' includes (early) pension, unemployed or unfit to work, houseman or housewife and student. 'Employed' served as the reference category

[i] 'Low education' contains all levels of education lower than the middle level of education. 'Middle education' contains the middle general extended education (mavo), lower vocational education (lbo), higher general extended education (havo), preparatory scientific education (vwo), middle vocational education (mbo). 'High education contains high vocational education (hbo) and scientific education (wo). 'High education' served as the reference category

[j] 'Being able to manage on the monthly wages' served as a reference category

[k] 'Absence of social loneliness' served as a reference category

Concerning social structure and enabling resources, living alone, being unemployed, not being able to make ends meet and social loneliness were all associated with a higher use of mental health care than their counterparts. A low or middle education compared with a higher educational level was associated with less use of mental health care. However, these factors had little impact on the ethnic differences. After correction for social structure and enabling resources, the higher use of specialised mental health care by first-generation Turkish and Moroccans remained. Only second-generation Moroccans tended to have a low mental health care consumption compared to the ethnic Dutch after correction for all the factors in the model.

Discussion

In the present study, we focused on differences between ethnic groups in the four largest cities in the Netherlands regarding their access to mental health care for symptoms of

CMD. Therefore, we studied the prevalence of a medium to high risk of having CMD and the prevalence of mental health care use by people who were likely having CMD belonging to different ethnic groups. Also, we aimed to address the question to what extent ethnic differences in health care utilisation were associated with need, social structure and/or enabling factors. This study showed that the prevalence of a medium to high risk of having CMD was 42.9 % among native Dutch people, 50.3 % among Turkish immigrants, 37.3 % among Moroccan immigrants, 51.5 % among Surinamese immigrants and 44.9 % among Antillean/Aruban immigrants. The fact that the prevalence was the highest for Turkish migrants is in line with previous research, while the decreased prevalence among Moroccans is not [9, 10]. The second issue was to what extent citizens of different ethnic backgrounds who were likely having CMD contacted health care practitioners. Of the people who were likely having CMD, 81.2 % of the Dutch, 87.2 % of the Turkish, 88.4 % of the Moroccan, 88.6 % of the Surinamese and 76.6 % of the Antillean/Aruban immigrants contacted a GP in the year preceding the survey. Concerning visits to the specialised mental health care, the prevalence was 15.9 % for Dutch people, 25.8 % for Turkish people, 19.7 % for Moroccans, 17.1 % for Surinamese and 20.5 % for Antilleans/Arubans. These figures do not generally indicate that ethnic minority groups with mental health symptoms consume less health care than the ethnic majority.

The elevated consumption of GP care for symptoms of CMD by first-generation Turkish and Moroccans in comparison with ethnic Dutch was explained by physical disorders and the supposed biological predisposing demographic factors for CMD. However, after correction for physical disorders and demographic factors, the elevated GP care use for symptoms of CMD by first-generation Surinamese remained, while GP care use by second-generation Surinamese with symptoms of CMD was/became even significantly elevated compared to native Dutch. The social structure factors and enabling resources like education and social loneliness were significantly associated with GP care use, but did not influence the ethnic differences.

The elevated consumption of specialised mental health care for symptoms of CMD by second-generation Antilleans/Arubans compared to the native Dutch was explained by the demographic factor age; however, the elevated specialised mental health care consumption by first-generation Turkish and Moroccans who were likely having CMD remained. All social structure factors and enabling resources were significantly associated with specialised mental health care use, but did not influence ethnic differences. However, after correction for social structure and enabling resources, the second-generation Moroccans who were likely having CMD tended to have a lower specialised mental health care consumption compared to the native Dutch.

This study has several strengths. First, it is a population-based study that took into account the ethnic groups of the four largest cities in the Netherlands. Together, these cities cover a large urban area, which promotes the generalisability of the results to other urban areas in western Europe. Nevertheless, access to services in rural areas might be deviant. Since this study did not take rural areas into account, no statements can be made about the access to health care for ethnic groups in rural districts. Second, participation of ethnic minority groups was stimulated by several measures, including translation of the questionnaire and an accompanying letter into Turkish and Arabic. Additionally, in some cities Turkish and Moroccan respondents were approached by telephone, or visited at home as well. In other epidemiological studies, respondents who do not sufficiently master the dominant language of the host country are often excluded [39]. Since we were able to include a large number of respondents with an ethnic minority background, a second strength of this study is that some of the intra-ethnic variations could be taken into account in terms of generational status, gender, age and other factors. After all, ethnic background is a fairly complex concept which represents a number of (biological and environmental) characteristics [2, 30]. Third, there is a general lack of insight into the cross-cultural validity of instruments that measure health care need [39–41]. However, based on a previous study we were able to select a cross-culturally valid measure, the K10, with culturally adjusted cut-off scores for the Turkish and Moroccan groups [36]. At the same time, the need for adjustment of the cut-off scores for Surinamese and Antillean/Aruban groups was unknown.

There are also limitations. First, the response rate among non-western immigrants was rather low. It is plausible that respondents of health surveys have a more positive attitude towards health care than non-respondents. If so, it is not clear if such a selection would have had effect on the comparison as drawn in this study and whether or not this selection varied under different ethnic groups. In addition, cases with incomplete data were deleted from the analyses, while they differed significantly from the included cases. Therefore, an additional research was conducted to examine the differences between included and excluded native Dutch on the one hand and between included and excluded non-western immigrants on the other hand concerning the relation between symptom levels of CMD and health care use. Results would point to an inequitable access to health care if excluded immigrants would make less use of mental health care than native Dutch people while having the same level of symptoms of CMD. This was not the case. Second, since the variable for a medium to high risk of having CMD was a dichotomous variable, the seriousness of CMD could not be measured. To avoid a small sample size, people with

a medium and high risk of having CMD were taken together. However, people suffering from moderate symptoms might be able to deal with their suffering by self-help without turning to health services. The ethnic groups who did have an elevated mental health care use might also have more serious symptoms of CMD. To assess if the results would alter when using different cut-off scores, a supplementary sensitivity analysis was conducted. In this analysis, a cut-off score of 19.5 was used for Dutch, Surinamese and Antillean/Aruban people, referring to the likelihood of having a severe disorder [42]. A corresponding cut-off score of 24.5 for Turkish people and of 25.5 for Moroccan people was used [36]. Using different cut-off scores hardly altered the results. Only the significantly higher GP use for CMD by second-generation Surinamese people compared to native Dutch people disappeared.

This study is based on Andersen's Behavioural Model of Health Services Use [4]. One of the objectives of this model is to explain disparities in equity of access to health care in a population. According to Andersen, the variance in use in an equitable access to health care is mainly determined by need factors and its supposed predisposing demographic factors, while in an inequitable access to health care the variance in use is mainly determined by social structure, health beliefs and enabling resources. The findings of this study do not support general concerns about the access to mental health care for non-western ethnic groups, for disparities between the Dutch and non-western ethnic groups of people with a medium to severe risk of having CMD rather pointed to elevated levels of health care consumption by ethnic minority groups compared with ethnic Dutch respondents. Correcting for some need factors, demographic factors, social structure and enabling resources hardly changed these findings.

However, as Andersen himself argued: "*equity is in the eye of the beholder",* by which he meant that other definitions of "*equitable access may be chosen, which may lead to different conclusions"* [4]. In that context, it is relevant to acknowledge that some important predisposing and enabling factors were not included. For example, health beliefs were not among the variables included in the analyses. In an attempt to gain more insight in the association between health beliefs and mental health care utilisation of Moroccan immigrants, a brief qualitative study was conducted among six Moroccan immigrants and two GPs. The results [data not shown in this study] indicated that in times of distress, Moroccan immigrants tend to fall back on traditional habits and values first. However, when despair grew, the respondents indicated that their interest in Dutch mental health services and its consumption increased as well [43]. While Andersen considers health beliefs to be an inequitable factor of access to health care, the solution to mental health problems by Moroccans seemed to be the result of a lifestyle preference, which is sometimes considered to be an equitable factor [44].

Assuming that severe inequities in the access to mental health care for ethnic minority groups are indeed absent, several factors have been described that might serve as an explanation for this finding. First, a process of 'interculturalisation' has taken place in the Netherlands in the past 25 to 30 years, referring to the efforts that have been made to make mental health services more accessible to patients with various ethnic backgrounds [45–48] (e.g. consultation hours and peer education programmes that have been organised outside the mental health services [49–51]). Yet, there is an ongoing discussion about the effectiveness of these efforts and the extent to which mental health care in the Netherlands is indeed working according to intercultural principles. An additional explanation is therefore that non-western immigrants may have progressed in terms of acculturation, education and health literacy [52]. Barriers in help-seeking behaviour, like language problems or stigma, may have become smaller [53]. Second-generation Moroccans seem to form an exception to this rule; after correction for various (in)equitable factors their level of mental health care consumption tended to be lower compared to the ethnic Dutch.

Conclusion

This study found differences in mental health care use between ethnic groups of people who were likely having CMD in the Netherlands, which generally indicated an elevated level of health care consumption among non-western immigrants compared to native Dutch people. This could be partly explained by need and/or demographic factors. Therefore, this study does not support the presumption that there are inequities between ethnic groups in their access to mental health care. However, there are indications that second-generation Moroccans seem to be vulnerable in their access to specialised mental health care.

Acknowledgments This study was conducted using data from the combined health monitors of Amsterdam, Rotterdam, The Hague and Utrecht. The authors therefore thank the Public Health Services of these cities (GGD Amsterdam, GGD Rotterdam-Rijnmond, GGD Den Haag and GG&GD Utrecht) for the opportunity to use these combined data.

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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