



Ethnic inequalities in psychological distress among urban residents in the Netherlands: A moderating role of neighborhood ethnic diversity?



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ABSTRACT

The main purpose of this study was to investigate whether neighborhood ethnic diversity moderated the association between ethnicity and psychological distress in the four largest cities of Netherlands. Multilevel linear regression analysis was used to assess whether the association between ethnicity and psychological distress differed by levels of neighborhood ethnic diversity. Results showed that the Turkish and Moroccan residents reported significantly higher psychological distress than native Dutch and Surinamese residents. In high ethnic diverse neighborhoods Turkish residents reported significantly less psychological distress than in low ethnic diverse neighborhoods. Ethnic diversity amplifies the risk of depression for some but not all ethnic minorities.

1. Introduction

Health inequalities between ethnic minority groups and natives in Western societies are consistently reported (Kobayashi et al., 2008; Nielsen and Krasnik, 2010). In the Netherlands, more than 20% of the population is of non-Dutch origin, and this is about 50% in the major cities (e.g. Amsterdam and Rotterdam). The three largest ethnic minority groups are from Turkey, Morocco and Surinam and form 7% of the Dutch population. However, in the four major Dutch cities, they represent a substantial part of the population: 23% of the residents in Rotterdam, Amsterdam and The Hague and 16% in Utrecht (CBS, 2013). Whereas the prevalence of poor self-reported health of Dutch natives is 15%, prevalences are substantially higher among Turks (45%), Moroccans (39%) and Surinamese (29%) (Deville et al., 2006).

Depressive disorders rank fourth in terms of diseases that cause the greatest burden of diseases in the Netherlands (Murray et al., 2012; RIVM, 2007). Depression is more common among ethnic minorities than native Dutch. The 5-year risk of treatment for depression in a major city in the Netherlands was 4–5 times higher for Turks and Moroccans and about 2 times higher for Surinamese compared to native Dutch (Selten et al., 2012). Similarly, the risk of antidepressant and antipsychotic drug prescriptions was higher for Turks and Moroccans in the Netherlands (Wittkamp et al., 2010).

Research has linked depression to features of neighborhood environment (Mair et al., 2008). There are indications that the impact of

the neighborhood environment (e.g. neighborhood problems, neighborhood social cohesion) on depression is different across ethnic groups (Echeverria et al., 2008; Gary et al., 2007). Among the neighborhood factors hypothesized to be related to mental health of ethnic minority groups is neighborhood ethnic diversity. It has been suggested that ethnic diversity is associated with higher levels of social cohesion (Bécares et al., 2011). It has also been suggested that social cohesion will be reduced in ethnic diverse neighborhoods (Putnam, 2007), resulting in more mental health problems. In the short run, ethnic diversity may reduce social solidarity and social capital in neighborhoods. In such neighborhoods members of all ethnic minority groups tend to “hunker down”, whereby trust in other ethnic groups and even in own ethnic group is lower, the number of friends is lower and altruism and community cooperation rarer (Putnam, 2007). A recent review on neighborhood ethnic diversity and its effects on social cohesion supports partly this view. Ethnic diversity only weakens intraneighborhood social cohesion: people living in ethnically diverse neighborhood are less likely to trust their neighbors or to have contact with them. Contrary, ethnic diversity is not related to less interethnic social cohesion (Meer and Tolsma, 2014). These mechanisms may have detrimental effects on (mental) health. Adverse changes in neighborhood environments (i.e. reduced social cohesion) may influence changes in depressive symptoms (Mair et al., 2015). In addition, stressful social relations with neighbors and friends are associated with increased mortality risk (Lund et al., 2014).

However, our understanding of the interplay between ethnicity,

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ethnic diversity, and (mental) health is hampered by the variety of measures to depict ethnic diversity in neighborhoods (Budescu and Budescu, 2012). Most studies have used the “majority-minority” (i.e. segregation) approach, whereby diversity is measured by the proportion of individuals belonging to an ethnic group in a neighborhood. Such a straightforward classification may be sufficient in situations where there is only one major and one minor group in a neighborhood, but this is seldom the case. Often, ethnic groups are not dispersed completely across cities, and, thus, neighborhoods tend to contain various ethnic groups. Hence, several studies have used more refined categories, such as percentage African American, Hispanic, or Asian residents in a neighborhood (Mair et al., 2010). Meanwhile, studies suggest that ethnic diversity in neighborhoods is conceptually distinct from ethnic segregation, as described above. Measures of diversity need to reflect the complete diversity in ethnic composition within a neighborhood (Budescu and Budescu, 2012; Eastwood et al., 2013). Budescu and Budescu (2012) suggested to use the “concentration index”, a complete measure of ethnic diversity that considers the distribution of several ethnic minority groups that compose the population in the neighborhood. This measure is “sensitive to the relative proportion of each ethnic or racial group to the overall composition in a particular context” (Budescu and Budescu, 2012) and “captures both the number of ethnic minority groups in the neighborhood as well as the relative representation of these groups” (Flink et al., 2013). We treat ethnic diversity as the degree of ethnic heterogeneity within neighborhoods. This is not the same as ethnic segregation or ethnic density which represent other aspects of ethnic composition of the neighborhood.

This metric of neighborhood ethnic diversity has been used to examine the association between neighborhood ethnic diversity and mental health, such as maternal depressive symptoms (Eastwood et al., 2014), depressive symptoms or difficulties among adolescents (Astell-Burt et al., 2012; Seaton and Yip, 2009), psychoses (Veling et al., 2015), and child behavioral and emotional problems (Flink et al., 2013). These studies provided some evidence that residing in a neighborhood with a high ethnic diversity was associated with more mental health problems (Flink et al., 2013; Eastwood et al., 2014; Veling et al., 2015). However, evidence on a moderating effect of neighborhood ethnic diversity on the association between individual-level ethnicity and mental health has been equivocal to date. The main purpose of this study was to investigate (i) the association of ethnicity with psychological distress (an indicator for depression) in the multi-ethnic cities in the Netherlands and (ii) whether neighborhood ethnic diversity moderates the association between ethnicity and psychological distress for the three largest ethnic minority groups.

2. Methods

2.1. Data source and participants

We conducted secondary analysis on survey data (G4 Gezondheidsenquête 2008) gathered in 2008 among citizens aged 16 years and older in the four largest Dutch cities by the Public Health Services in Amsterdam, Rotterdam, The Hague and Utrecht (Veelen et al., 2009). The data includes information on physical and mental health, social well-being, lifestyle, health care use, socioeconomic status and demographics of the participants.

The survey was based on a random sample of 42,686 residents aged 16 years and older from four municipal population registers, stratified by city district and age. Respondents were asked to fill in a written or web-based questionnaire or to take part in a personal interview when having difficulties to complete the questionnaire. Extra effort was made to target vulnerable groups, i.e. older Turks and Moroccans with limited language skills and residents of neighborhoods with a low response in previous surveys. Non-responders were contacted by telephone or visited at their home and were offered personal help to

fill in the questionnaire in the language used by the respondent e.g. in Turkish or Arabic.

The overall response was 49% (n=20,877); 54% in Utrecht, 51% in The Hague, 50% in Amsterdam and 47% in Rotterdam. The response was higher among women than among men and increased with age. The response was highest among native Dutch (57%) and lowest among Moroccans (30%) (Veelen et al., 2009).

2.2. Definition of a neighborhood

In the Netherlands, neighborhoods are areas with a reasonably similar type of buildings of same age, and often delineated by natural boundaries, which makes neighborhoods relatively homogeneous socio-culturally (Reijneveld et al., 2000). Previous research has shown that there is a sense of community within Dutch neighborhoods (Völker et al., 2007). In the Netherlands, neighborhoods may be defined by the four digit postal code, which corresponds to the route of a postman. These four digit postal code areas are quite similar to neighborhoods and often have well-established names to which people identify themselves. We defined neighborhoods based on the four digit postal code. The respondents lived in one of 208 neighborhoods (on average 86 respondents (SD: 63) per neighborhood). In the Netherlands, there are about 4000 neighborhoods. These areas comprise on average of approximately 4000 residents.

Ethical approval was not required as this study relied on secondary anonymized data collected in the context of performing statutory tasks (Public Health Act of the Netherlands), in strict accordance with the national standard (van Bergen et al., 2014). Respondents were informed by letter that by filling out the questionnaire they gave permission for use of anonymous data for research aimed at improving population health in their place of residence. Respondents were contacted through municipal health services and in the dataset available for research all identifying information has been removed. All research activities adhered to the regulations of the Dutch Code of Conduct for Medical Research (FEDERA, 2012).

2.3. Outcome measure: psychological distress

This study used psychological distress as an indicator of depression (Andrews and Slade, 2001; Kessler et al., 2002), measured with the Kessler Psychological Distress Scale (K10). The K10 has been developed as a screening instrument for psychological distress in the general population (Kessler and Mroczek, 1994). The K10 discriminates Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) disorders from non-cases (Kessler et al., 2002) and is strongly associated with the Composite International Diagnostic Interview (CIDI) diagnosis of anxiety and affective disorders (Andrews and Slade, 2001). In a recent Dutch study, the K10 proved to be reliable (Cronbach's: 0.94) and valid (area under the curve (AUC: 0.87)) in detecting any depressive disorders. At the cut-off of 20 points, sensitivity (0.80) and specificity (0.81) are sufficiently high to appreciate the K10 as appropriate screening instrument (Donker et al., 2010). The K10 scale consists of 10 questions that measure a person's level of anxiety and depressive symptoms in the previous four weeks. The items included were: “Did you feel ...1) tired out for no good reasons?”, 2) nervous?”, 3) so nervous that nothing could calm you down?”, 4) hopeless?”, 5) restless or fidgety?”, 6) so restless that you could not sit still?”, 7) depressed?”, 8) that everything was an effort?”, 9) so sad that nothing could cheer you up?” and 10) worthless?”. Each item has five response categories “none of the time”, “a little of the time”, “some of the time”, “most of the time” and “all of the time”. Cronbach's alpha was 0.92, therefore a sum-score was calculated (range 10–50), with higher scores reflecting more psychological distress.

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