

Primary Health Care Use among Ethnic Minorities in the Netherlands

A comparative study

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we see what's intrinsic moving us"

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Primary Health Care Use among Ethnic Minorities in the Netherlands

A Comparative Study

Zorggebruik onder etnische minderheden in Nederland

Een vergelijkende studie

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1 Introduction and research questions

1.1 Introduction

In recent decades the Netherlands has increasingly been host to a large number of different ethnic groups. As a consequence of decolonisation, active labour recruitment and better labour circumstances, many immigrants came to live and work in the Netherlands. Subsequently, their number increased strongly because of family reunion and family formation (Penninx et al., 1993). These immigrants often end up in a minority position, characterised by various kinds of social disadvantage. As in other areas, also with respect to health, ethnic minorities are frequently disadvantaged: their health status is often poorer than that of the indigenous population (Van Wersch et al., 1997; Uniken Vernema et al., 1995; Uitenbroek and Verhoeff, 2002; Razum and Twardella, 2002). Nevertheless, this general picture is not straightforward with respect to all minority groups and diseases. Moroccan men, for instance, are found to have a higher life expectancy and are less likely to suffer from cardio-vascular diseases as compared to the indigenous Dutch males (RIVM, 2006). Ethnic background is therefore suggested to relate in many (complex) ways to differences in health status between various ethnic groups. Mechanisms possibly operating are linked to genetic factors, experiences before and after migration, culture and acculturation, socio-economic factors and societal context (Uniken Venema et al., 1995; Stronks et al., 1999; Dijkshoorn et al., 2000). Varying importance is attached to each of these factors. Most research attention is paid to the influence of individual factors on health status such as socio-economic position and demographic characteristics.

In addition to the above, adequate use of health services is also perceived to be an important determinant of health (Andersen, 1995). Adequate use of health care is facilitated by accessibility and quality of the health care services. Reduced access and poorer quality of care can lead to delays in diagnosis and treatment and contribute to well-documented disparities in minority health (Amaddeo et al., 1995; Shin et al., 2005). For this reason one of the major themes in modern health policy is equity in health care services. Many definitions and criteria with respect to equity have been formulated (Andersen, 1995; Doorslear et al., 2000; Whitehead, 1990). In 1990, the World Health Organisation identified three goals in relation to equity:

- a) equity in access when equal needs
- b) equity in utilisation when equal needs
- c) equity in quality of treatment when equal needs (Whitehead, 1990)

The principal interpretation of equity that underpinned much of the recent empirical work in this area focuses on equal use for equal need (Smaje and Grand, 1997). Need is most often measured by self-reported morbidity or perceived health. Since there are inequalities in need, use of care is expected to be distributed unequally. In this context horizontal equity (the equal treatment of equals) and vertical equity (the unequal treatment of unequals according to their inequality) can be distinguished (Alberts, 1998). When differences in health care use are explained predominantly by differences in need and demographic characteristics, one can speak of equity in health care use (Andersen, 1995). Utilisation is more unequal when variables such as social structure (e.g. ethnicity), health beliefs and income determine who gets care, rather than health care needs.

Central to our study is equity in health care between ethnic groups in terms of the actual use of services (Smits et al., 2002). The objective is to provide insight into differences in the actual use of health care services by ethnic minorities as compared to the indigenous Dutch population. Furthermore, the role of different determinants of health care utilisation will be studied in order to establish to what degree ethnic differences in utilisation are explained by these determinants. In addition to the use of health care our study also pays attention to the quality of care by comparing differences between ethnic groups concerning the perceived quality of general practitioner care. Patients' perceptions about aspects such as personal treatment, communication and information and continuity will be studied in the context of the multidimensional concept of quality of care (Harteloh and Verheggen, 1994). Health care that takes into account the needs and expectations of minority groups can contribute to a reduction in possible health disadvantage, which is the ultimate aim of equity in health care.

1.2 Theoretical background

For our study the widely used theoretical framework developed and elaborated by R.A. Andersen served as the reference point. This model was

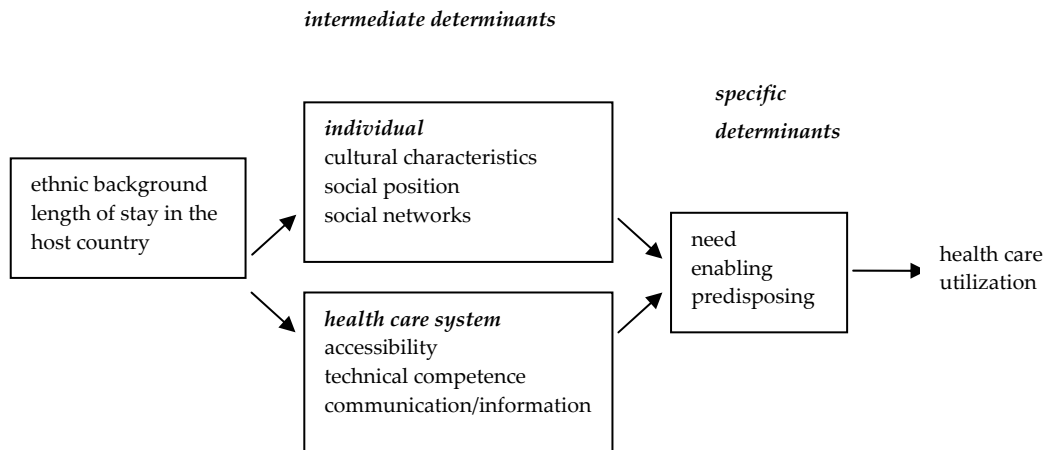
originally intended to analyse equity in the use of services (Andersen, 1995; Andersen and Newman, 1973). Over time the application of the model has increasingly shifted towards an explanatory model of health care use. In our study both purposes will be applied. The Andersen model provides a clear overview of the numerous variables that influence the process underpinning the use of health care services. The following description of the conceptual model we used in our study has, in addition to the Andersen model, been completed with elements from other research studying the relation between ethnic background, health status and health care utilisation (figure 1.1) (Uniken Venema et al., 1995, Mackenbach, 1996; Smaje, 1996; Stronks, 1998; Weide, 1998; Keenan et al., 2002; Cooper et al., 2002). Following the key elements of the Andersen model, we distinguish three main determinants of use: need factors, enabling factors and predisposing factors (Foets, 1999). These specific determinants are found at the patient level.

- 1 Need factors reflect deficits in the health status. Need is considered a principal determinant, which initiates the decision-making process regarding whether or not care will be sought. In our study focus will be on self-perceived need in terms of the evaluation of one's own health status. This is especially applicable with respect to first contact general practitioner care as this usually reflects the patient's own action in the help-seeking process. Once a patient has presented a problem to the general practitioner, need as evaluated by a professional can be considered as a factor explaining differences in the nature and amount of the follow up treatment.
- 2 Enabling factors reflect the resources that make it possible to use health care services. They are necessary but not sufficient conditions. Enabling factors are often expressed in terms of financial means and insurance status.
- 3 Predisposing factors reflect the propensity to use health care services. Psychosocial characteristics, knowledge of health and health care services, health beliefs and attitudes with respect to the use of informal care and self-care are examples of predisposing factors.

Since the indigenous population and ethnic minority groups differ with respect to each of these determinants, they may explain ethnic differences in health care utilisation. In an ideal situation ethnic differences in health care use should be solely determined by differences in need. If this is not the case, the influence of enabling factors indicates the necessity of socio-economic

policy and the influence of predisposing factors indicates the necessity of health education policy.

Figure 1.1 Conceptual model of health care utilisation by ethnic minority groups



The relationship between these specific determinants and health care use is not constant, but may, especially for migrant groups, change during their stay in the host country. Moreover, the relationship between ethnicity and health care use is mediated by a number of variables intermediating between ethnic background and length of stay in the host country and the specific determinants. These mediating variables act at the individual level or at the health care system level. At the individual level important mediating variables are:

- Cultural characteristics and the way these characteristics change over years of residence in a new country are assumed to be key determinants of ethnic discrepancies in health service use (Boomstra and Wennink, 2001; Bradley et al., 2002; Bruijnzeels et al., 1999; Bruijnzeels, 2001; Calnan et al., 1994). Cultural variables reflect the meaning people attach to reality (Campbell et al., 2001). Ethnic groups vary in opinions, values and norms, leading to differences in lifestyle in general, and language use in particular. Subsequently, these cultural differences may influence need, as well as enabling and predisposing determinants (Cardol et al.,

2004). Cultural perceptions about symptoms may for instance influence the predisposing determinants, as ethnic minority patients may express their need differently, resulting in a missed diagnosis (Castles and Miller, 2003). Lack of proficiency of the language of the host country is also frequently reported as potentially hindering health care use, as inability to use the language impedes effective communication between health care providers and patients (Castles and Miller, 2003).

- Social position characteristics can also influence need, enabling and predisposing characteristics. Particularly differences in education, labour market position and income are relevant in the context of health care use and as determinants of need among minority groups. For instance, a lack of schooling, lower socio-economic status and poor living conditions are reported as barriers for use of health care services among minority groups (Castles and Miller, 2003).
- A final important determinant concerning the relationship between ethnicity and health care utilisation that needs to be mentioned concerns social network characteristics (Cecil and Killeen, 1997). The presence of social relationships implies social integration and in turn affects needs and predisposing factors. Social networks may provide social support, which again influences not only health status but also may be an alternative to the use of formal health care services. For instance, a possible explanation for frequently found urban-rural differences in health care use might be that less social support in urban areas results in a higher utilisation rate (Centraal Bureau voor de Statistiek, 1991; Centraal Bureau voor de Statistiek, 2002; Centraal Bureau voor de Statistiek, 2003; Centraal Bureau voor de Statistiek, 2005). Sociological explanation models perceive these behavioural patterns within a group to be especially determining of health care use in contrast to psychological models that put greater emphasis on health care use as an individual choice.

In addition to the above-cited mediating variables at the individual level, intermediating determinants can also be distinguished at the level of the health care system. Within a health care system, a number of variables are equal for all citizens. This is especially the case with respect to the supply volume and health care financing. Therefore they are not included in our study. At the same time little is known with respect to the quality of care received by minority groups (Chesney et al., 1982). The way in which health

care providers deliver their care may vary among ethnic groups. If the care is less well adapted to the needs of ethnic minorities, potential barriers for the use of services arise. Especially if this is the case in the eyes of the patients, these quality dimensions may influence health care utilisation. Relevant aspects are expertise in providing care to ethnic minorities, information and communication skills and aspects of personal treatment and continuity. The use of health care among minority groups is, for instance, negatively influenced by stereotypical attitudes towards minority patients, lack of cultural knowledge and the denial or ignorance of aspects of religious beliefs. Other variables decreasing the likelihood of health care use tend to be found at the system level such as the rigidity of the medical paradigm, complex intake procedures, impersonal communication through printed material and the lack of appropriate, translated information (Castles and Miller, 2003).

It is often difficult to account for differences in health care utilisation based on ethnicity. One problem is that ethnicity is often strongly related to socio-economic status. Some differences in health care utilisation may be more closely related to variables associated with a deprived situation rather than with ethnicity or culture (<http://bmj.bmjournals.com/cgi/content/full/328/7434/258>). Omission of interrelationships may oversimplify the role of ethnicity in health care utilisation (Cooper et al., 2002). Moreover, determinants in the Andersen model may relate differently to each other depending on ethnicity. The varying utilisation rates between ethnic groups suggest that ethnicity may function more as a moderator than as a predictor variable.

1.3 Research questions

With respect to ethnicity, a substantial body of international literature has documented differences between minority groups and the indigenous population in health care utilisation (Smaje and Grand, 1997; Chesney et al., 1982; Wells et al., 1987; Stronks et al., 2001; Cooper et al., 1998; Reijneveld, 1998; Wells et al., 1989; Patel, 1995; Ahmad et al., 1990; Van der Stuyft et al., 1989; Langwell and Moser, 2002; Smaje, 1998). These differences greatly depend on the type of health care service and vary considerably between and also within ethnic minority groups. At the start of our study, little information was available on the accessibility and quality of care as

perceived by ethnic minorities in the Netherlands (Weide, 1998). Most research was small-scale and restricted to a given locality, usually in one of the larger cities. Subsequently, the results were difficult to generalise. Therefore, our study aimed at a theory-based description of ethnic differences in health care utilisation on a nation-wide scale, including the four largest groups (Turks, Antilleans, Surinamese, and Moroccans). Since GPs constitute the gateway to medical care in the Netherlands, most health problems are dealt with in general practice, and access to secondary care requires referral. Therefore, we focussed on contacts with GPs, prescriptions and referrals to medical specialists. In addition, a large range of different health care services will be covered in our study. The interpretation of ethnic differences in health care use is complicated by the possibility that the use of one service may compensate for less use of another service (Pescosolido, 1992; Verheij, 1999). In order to gain more insight into potential substitution or complement effects, the use of different types of single services will not only be studied individually but also in relation to one another. This means that, in addition to the utilisation of single services, patterns of use will be considered. Patterns refer to the use of different sources of care during the same period. With respect to possible ethnic differences in the use of prescription medication, the issue of compliance may play a role. Ethnic minority groups are in general found to differ from the indigenous population in the use of prescription medication (Stronks et al., 2001; Espino et al., 1998; Taira et al., 2003; Hull et al., 2001). These differences are often ascribed to cultural variables, but the possible influence of differences in compliance is largely neglected. To what extent, for instance, do ethnic minorities actually use the medication that is being prescribed by the general practitioner? Comparing registration information from general practitioners with survey information from patients may shed more light on the actual use of prescription medication by minority groups as compared to the indigenous Dutch population. Based on the above, our first research question is:

- 1 *'To what extent do ethnic minorities differ from the indigenous Dutch population with respect to health care utilisation?'*

Differences in health status result in differences in health care need. It is not surprising that health status is found to be an important predictor of ethnic differences in health care use, as minority health is often poorer than in the

indigenous population (Van Wersch et al., 1997; Uniken Venema et al., 1995; Uitenbroek and Verhoeff, 2002; Razum and Twardella, 2002). Nevertheless, even after adjustment for health status, Turks, Moroccans and Surinamese, for instance, tend to contact GPs more often than the indigenous Dutch population (Bruijnzeels, 2001; Weide and Foets, 1997; Kocken et al., 1994; Weide and Foets, 1998). Moreover, after controlling also for socio-demographic variables such as age, sex and education, ethnic minority groups are frequently found to differ in health care use from the indigenous Dutch population. The remaining ethnic differences are frequently attributed to cultural variables but have been subjected to very little quantitative examination in relation to health status and socio-demographic characteristics. Because ethnic background in itself cannot explain differences in health care use, the question is whether cultural differences are the underlying concept accounting for these discrepancies. Our expectation is that the health care use of ethnic minorities will be more similar to the indigenous Dutch population after accounting for the possible influence of differences in socio-demographic and cultural characteristics and health status. Furthermore, special attention will be paid to the relationship between ethnic differences in health care utilisation and urbanisation level. As previous research in the Netherlands has chiefly been conducted within the context of large cities, it is unclear to what extent ethnic differences in health care utilisation also prevail beyond the main urban areas. As far as indigenous populations are concerned, the association between health care use and degree of urbanisation has already been established in various studies. Moreover, international research has shown that differences in health care use between urban and rural areas still remain, even after taking account of ethnicity (Verheij, 1999). In our study we try to establish whether ethnic differences in health care use are greater in highly urban areas than in less urban areas. If ethnic differences in health care utilisation are more pronounced in the cities, it may be assumed that these differences reflect mechanisms at work in an urban environment. However, if ethnic differences in health care utilisation are found to a comparable extent both within and outside the main cities, this would imply that there is a separate influence of ethnicity. Our second research question therefore is as follows:

- 2 *'To what degree can health status, socio-demographic and cultural characteristics explain ethnic differences in health care use?'*

Although insight into the extent of ethnic differences is an important issue, it does not provide a complete picture of health care provision to minority groups. Besides ethnic differences in the quantity of use, it is equally important to examine possible differences in the quality of provision of care. Perceptions concerning the quality of care may act as an intermediating variable between ethnicity and use of care, and may consequently be a possible explanation for ethnic differences in health care use. This may for instance be the case when a poor initial consultation necessitates further visits to GPs and complicates the referral process. In addition to the possible influence of quality of care on actual health care use, ethnic differences in quality of care may also put minority groups at risk for inferior care and subsequently poorer health status (Jung et al., 1998). Nevertheless, insight into minority patients' views on good general practice, their needs and wishes is still limited. Important aspects with respect to quality of care are competence, personal treatment, communication and information and continuity (Harteloh and Verheggen, 1994). International research suggests that ethnic minorities on average have poorer perceived quality of care and are more dissatisfied than the indigenous population (Jung et al., 1998; Ferguson et al., 2002; Virnig et al., 2002; Baker et al., 1996; Murray-Garcia et al., 2000). Moreover, minority patients often feel they are not understood or taken seriously by health care providers, especially regarding contact with GPs and mental health care providers (Van Wersch et al., 1997; Weide, 1998; Bruijnzeels, 2001; Rietveld, 2003; Van Wieringen et al., 2002). Communication problems were experienced by both patients and health care providers, as perceptions regarding health, illness and help seeking behaviour vary between ethnic minority patients and the indigenous Dutch population (Van Wersch et al., 1997). One can argue that people with the same ethnic background share a general set of values, resulting in a rather homogeneous perception of these quality of care aspects. In our study attention will be paid to the extent of this homogeneity by examining similarities and differences in patients' views on quality of GP care within ethnic groups. The third research question is as follows:

- 3 *'What are the differences in perceived quality of care between ethnic minorities and the indigenous Dutch population with respect to competence, personal treatment, communication and information and continuity?'*

In addition to the homogeneity of quality judgements between ethnic groups, quality judgements might also be clustered at the practice level. GP practices vary for instance in the number of registered patients with an ethnic minority background. It might be that more contact with ethnic minorities will influence the intercultural performance of GPs, which in turn could influence the perceived quality of care. From this perspective, the percentage of ethnic minorities with a non-western background within the general practice may be a potential explanation for perceived quality differences at the general practitioner level. As patients' experiences with each GP might vary, it is interesting to see which quality aspects vary especially between general practices, and which aspects vary especially between minority groups. Previous research suggests that quality judgements are not only related to ethnicity, but also to socio-demographic characteristics and health status (Grol et al., 1999; Sixma et al., 1998; Williams and Calnan, 1991; Steven et al., 1999; Gribben, 1993; Baker, 1996). This raises the question to what extent possible ethnic differences in quality of care remain after taking these patient-related characteristics into account in addition to practice - related characteristics. The final research question is therefore:

- 4 *'To what degree are differences in perceived quality related to patient characteristics and to supply characteristics?'*

1.4 Study design and method

1.4.1 Data collection

Research among ethnic minority groups incurs additional problems compared to the general population, which require special attention (Alberts, 1998). For some respondents originating from a minority population interviews have to be conducted in their native language, because of their limited knowledge of the Dutch language. Also the inability to read or write well in their native language makes it sometimes necessary to conduct face-to-face interviews. A second problem is the validity of the instruments applied for research among minority groups, since originally most instruments were developed for the indigenous Dutch population. Thirdly a high response rate in ethnic minority groups is more difficult to achieve than in the Dutch population. Because of these difficulties, valid and reliable research among these groups is time consuming and expensive. To

overcome part of these problems the study was integrated in the second National Survey of General Practice (DNSGP-2) (Westert et al., 2005; Westert et al., 2006).

At the time of our study, in the Netherlands individuals with public health insurance (approximately 65% of the population) were obliged to be registered at a general practice. Individuals with private health insurance usually comply with this rule voluntarily. Therefore, the patient lists of all participating practices were used as the population denominator. The patient lists were derived from the practice computers at the beginning and the end of the DNSGP-2 (Westert et al., 2006). Part of the necessary data was available from regular data registration by GPs. Other data, especially the data necessary to explain differences between ethnic groups, were collected specifically among large numbers of respondents from the ethnic minority groups. A comparison group from the indigenous Dutch population was available from the regular data collection. The data collection for the DNSGP-2 started in 1999. The study was carried out according to Dutch legislation on privacy. The privacy regulation of the study was approved by the Dutch Data Protection Authority. According to Dutch legislation, obtaining informed consent is not obligatory for observational studies.

1.4.2 *Design of the second Dutch National Survey of General Practice*

An important feature of the DNSGP-2 is the use of unique identifiers in the collection of data which enables the interlinkage of all data on all measurement levels (Westert et al., 2006). The following sources of information were used in our study:

Census

Socio-demographic characteristics were collected by means of a one-page postal questionnaire sent to all patients enrolled in the participating general practices, irrespective of GP-consultation rate during the research period. The data included age, sex, health insurance, civil status, educational level, household composition, living arrangements, occupation and work status. Especially important for our study was the registration of the country of birth and the country of birth of the parents, for this allowed a classification of patients into ethnic groups and a distinction between first and second

generation migrants (Statistics Netherlands, 2002). It furthermore provided a possibility to classify general practices according to the percentage of minority patients in the practice population. The definition of ethnicity and the terminology as such surrounding ethnic minorities is not generally agreed upon nationally and internationally (Statistics Netherlands, 2002). In our study we chose to define a foreign background according to Statistics Netherlands as when at least one parent was born abroad (Statistical Yearbook of the Netherlands, 2002). The census also included a general question on number of years living in the Netherlands and perceived health. The census was administered in four languages (Dutch, English, Turkish and Moroccan Arabic).

Registration via electronic medical records

Participating GPs recorded all contacts with their patients during one calendar year; 87% of the data were collected in 2001. Data about contacts of patients with the practice were derived from the routine registration in the electronic medical records (n=1.5 million contacts). In addition to contact characteristics this registration also included interventions by GPs, including prescriptions.

Patient health interview

A health interview survey among a random sample of 5% of the total practice population (all ages) was performed. The computer-assisted personal interview was carried out at the person's home by a trained interviewer. In addition a second health interview survey among a random sample of Turkish, Moroccan, Surinamese and Antillean migrants aged 18 years and older was carried out. The majority of the interviews were performed in 2001. The interviews among the ethnic minority groups involved largely the same instruments as among the Dutch speaking population. In addition, an instrument measuring the degree of acculturation in the Dutch society was administered. To improve the validity and reliability of the questions among the ethnic minority groups, much attention was paid to the content of the questionnaire. The questionnaire was independently translated forward-backward for this purpose. A pilot was performed to test comprehensibility and acceptance of the questionnaire on a comparable sample. Given that bi-lingual people are often found to be

influenced by factors such as their age, gender and education, and produce translations that are too formal and literary for most people, field testing focussed on bi-linguals as well as mono-linguals (Hendricson et al., 1989; Hunt and Bhopal, 2003). The pilot interviews were observed on a screen by two members of the research team. This way questions needing clarification or causing any kind of emotional response were identified and necessary adjustments could be applied. The interviewers were bilingual and had been specially trained. The interviewers offered the opportunity to choose between an interview in Dutch or in the mother tongue of the respondents, depending on language mastery and preference. The oral interview took place at the interviewee's home with the help of a paper questionnaire. The core part of the self reported data included validated instruments to measure health status and health care utilisation and a wide range of specific and intermediating determinants:

- Needs, defined as perceived health status. Also included were questions on the number of chronic health problems.
- To justify the multi-dimensional character of cultural characteristics, measurements in a very broad sense were applied. Attention was paid to the acquisition of the content of cultural beliefs and values and language proficiency in Dutch, in addition to more epidemiological variables such as length of residence, temporary re-migration and perceived ethnicity.
- Illness behaviour, including informal and self care, as well as use of complementary medicine and utilisation of services in home countries. This latter might serve as a alternative for GP consultation (CBS, 1991).
- Perceived quality of health care. An instrument that proved to be a useful measure of user views of quality of care is the QUOTE (QQuality Of care Through the patients Eyes) (Sixma et al., 1998). Because no valid and reliable instrument existed to measure the quality of GP care among ethnic minorities, the generic QUOTE questionnaire was adapted for use among Turkish, Moroccans, Surinamese and Antillean patients before the start of the study (El Fakiri et al., 2000; Van Lindert et al., 2000).

1.4.3 Research population

In the DNSGP-2 195 GPs in 104 practices participated. These were distributed throughout the country. For the composition of this sample the 'Landelijke Informatie Netwerk Huisartsen' (LINH) was used, which is a

national network of general practices. To make the sample nationally representative for the National Survey, extra general practices were recruited from disadvantaged areas in large cities. The total population of these practices consisted of 399,068 people at the start of the study. There was no age limit for inclusion in the National Survey. Only those permanently living in an institution were not included. In order to answer the research questions, for the interviewed groups of ethnic minorities the aim was to include approximately 300 patients per group.

1.4.4 *Representativeness of GPs and practice population*

GPs participating in the survey were, in most respects, representative of the Dutch GP population. Sex, age, part-time/full-time working, urbanisation level of the practice location and geographical distribution concurred with national figures. However, with regard to the practice type, GPs working solo were relatively underrepresented in the study population (31% versus 43%). The total practice population that was listed at the participating practices was comparable to the population of the Netherlands with respect to sex, age and type of health insurance (Westert et al., 2006).

1.4.5 *Response*

In total 294,999 people returned the census (76.5%). A total of 12,699 Dutch-speaking people were interviewed, regardless of ethnic background. The response rate of this study was 64.5%. The response rate did not vary significantly for age or gender. Refusal was the most common reason for non-response (66.9%). In addition, a random sample was drawn of respondents identified on the census as having a Turkish, Moroccan, Surinamese or Antillean background. Of those who returned the census form, 7,355 were aged 18 or older and appeared to have a Moroccan, Surinamese, Antillean or Turkish background. From this group 2,682 people were approached for participation in the interview. In total 1,339 agreed and were interviewed (response rate 49.9%). The most important reasons for non-response were difficulties in reaching the sampled persons (24.9%) and refusal (19.5%). No indications for a selective non-response were found concerning age, health insurance and gender (see Appendix 1.1 – table 1.1). Remarkably, non-

responders who reported poor health in the census were initially most frequently unreachable, but once people in poor health were reached relatively few refused participation. The refusal rate was highest among the lower educated category, whereas among the higher educated category difficulties in reach ability was the most frequent reason for non-response. Inability to reach people was also the most important reason for non-response among people living in less densely urbanised areas. Nevertheless, the refusal rate increased with urbanisation. Surinamese and Antilleans were most difficult to reach, but once they were contacted these groups were relatively less inclined towards refusal. Among Turkish groups the opposite was the case.

Table 1.2 (see Appendix 1.1) provides an overview of characteristics of the potential sample, derived sample, respondents and non-respondents. The characteristics remained comparable in all groups. The proportions in the potential sample were replicated in the derived sample and among respondents. Only the Surinamese were less well represented in the derived sample compared to the potential sample. Respondents also differed negligibly from the non-respondents. Only women seem to be a little over-represented. The largest percentage of respondents were in the age category 31-50 years old. Most respondents reported satisfactory perceived health, were moderately educated, had public health insurance and lived in a highly urbanised area. Most respondents resided in the provinces North Holland and South Holland. With regard to ethnicity, 30.2% had a Turkish background, 27.9% Moroccan, 22.3% Surinamese and 19.6% Antillean.

Non-response is a common problem in research among minority groups. Inclusion in our study started with a census by means of a one-page postal questionnaire. This possibly influenced the response rate and subsequently the precision of the results, as illiterate people might not have returned the questionnaire, resulting in over- or under- representation of certain groups. As ethnicity is not registered in general practices, it was not possible to estimate possible characteristics of people who did not respond to the one-page questionnaire. Nevertheless, the distribution of age and sex of the respondents per ethnic group did not differ systematically from the national figures (see Appendix 1.1 – table 1.3) (CBS, 2002). Only among Surinamese respondents, were women and elderly over-represented. Among Antilleans a small shift in the same direction was found.

1.5 Outline of the thesis

The research questions of this dissertation are investigated in subsequent empirical chapters. Chapters 2-8 comprise a series of published or submitted manuscripts. Some overlap in content between these chapters was inevitable, since it had to be possible to read each chapter independently.

Chapter 2 describes a systematic assessment of the international literature concerning ethnic differences in primary care utilisation.

Chapter 3 reports on the differences between the major migrant groups and the indigenous Dutch population concerning self-rated health and its socio-demographic determinants, the use of GP-care and the incidence of diagnoses made by general practitioners.

Chapter 4 evaluates whether ethnic differences in health care use are greater in highly urban areas than in less urban areas.

Chapter 5 describes the nature of ethnic differences in health care utilisation by assessing patterns of use in addition to single service utilisation.

Chapter 6 discusses the relationship between cultural distances and utilisation of health care by analysing important cultural aspects that could either promote or hinder the use of care in the Netherlands.

Chapter 7 aims to gain insight into similarities and differences between ethnic minority groups and the Dutch population in patients' views on quality of GP care.

Chapter 8 examines to which extent ethnic differences between self-reported data and data based on electronic medical records from general practitioners might be a validity issue or reflect lower compliance among minority groups.

Chapter 9 contains a summary of the empirical findings and discusses the methodological strengths and limitations of our study. Subsequently, the implication of the study results for general practice, as well as directions for future research are described.

Appendix 1.1

Table 1.1 Reasons for non-response among the minority groups by age, sex, ethnicity, perceived health, type of insurance, education and level of urbanisation (%)

	Unreachable	Refusal	Language problem	Other
N	669	522	12	140
Age				
18-30	53.8	38.0	1.4	6.8
31-50	49.4	38.2	0.7	11.7
50+	44.3	41.7	0.4	13.6
Sex				
male	51.4	38.2	0.5	9.9
female	48.4	39.5	1.3	10.9
Perceived health				
excellent	43.1	43.1	1.7	12.1
good	51.5	36.8	0.3	11.9
moderate	48.8	41.0	1.2	9.0
poor	49.4	38.6	-	12.0
very poor	78.9	10.5	-	10.5
Education				
none	45.3	47.4	1.5	5.8
elementary school	44.3	41.6	1.4	12.8
high school	52.0	36.5	0.6	11.0
college or university	53.8	38.8	0.6	6.9
Type of insurance				
public	50.3	38.1	1.0	10.6
private	47.1	44.7	-	8.2
Level of urbanisation				
very highly urbanised	50.8	41.9	1.0	6.2
highly urbanised	47.5	39.1	-	13.5

- table 1.1 continues -

- table 1.1 continued -

	Unreachable	Refusal	Language problem	Other
moderately urbanised	53.9	34.7	-	11.4
slightly urbanised	40.2	32.6	3.8	23.5
not urbanised	72.2	16.7	-	11.1
Ethnicity				
Moroccans	48.0	40.2	0.5	11.3
Antilleans	53.3	34.9	-	11.8
Surinamese	54.3	36.2	0.3	9.2
Turks	43.9	44.2	2.8	9.1

Table 1.2 Characteristics of respondents from the minority groups, sample and potential sample (%)

	Non respondents	Respondents	Sample	Potential sample
N	1343	1339	3994	7355
Age				
18-30	36.6	32.8	32.5	32.6
31-50	43.6	46.3	46.7	46.7
50+	19.8	20.9	20.8	20.6
Sex				
male	46.6	41.2	46.1	45.2
female	53.4	58.8	53.9	54.8
Perceived health				
excellent	13.0	11.0	12.3	13.1
good	43.9	40.8	41.7	41.7
moderate	24.1	25.2	24.5	22.9
poor	6.2	6.8	6.8	6.4
very poor	1.4	1.1	1.4	1.3
unknown	11.4	15.2	13.3	14.6

- table 1.2 continues -

- table 1.2 continued -

	Non respondents	Respondents	Sample	Potential sample
Education				
none	10.2	10.0	10.1	9.2
elementary school	22.0	24.8	23.7	22.0
high school	53.0	49.5	50.6	53.2
college or university	11.9	11.7	11.8	12.2
unknown	2.8	4.0	3.8	3.4
Type of insurance				
public	86.4	89.0	87.5	86.3
private	12.7	10.2	11.7	12.9
unknown	0.9	0.7	0.8	0.9
Level of urbanisation				
very highly urbanised	50.4	60.1	53.2	55.3
highly urbanised	22.1	14.3	18.3	19.2
moderately urbanised	16.3	16.0	15.8	14.5
slightly urbanised	9.8	7.2	10.5	9.0
not urbanised	1.3	2.3	2.1	2.0
Ethnicity				
Moroccans	27.6	27.9	29.0	20.4
Antilleans	25.2	19.6	20.0	13.3
Surinamese	23.5	22.3	21.7	40.8
Turks	23.8	30.2	29.3	25.5
Region				
Drenthe	1.0	0.4	0.6	-
Flevoland	3.2	3.3	2.9	-
Friesland	1.1	0.8	1.0	-
Gelderland	5.9	3.9	5.7	-
Groningen	6.6	6.6	5.8	-
Limburg	3.5	2.5	3.6	-
Noord-Brabant	6.8	5.1	6.1	-
Noord-Holland	22.0	22.6	24.9	-
Overijssel	3.4	4.6	4.2	-
Utrecht	9.0	14.9	12.3	-
Zeeland	1.7	1.6	1.6	-
Zuid-Holland	35.7	33.6	31.4	-

Table 1.3 Age and sex of the respondents from the minority groups and national data (%)*

	Surinamese	Moroccans	Turks	Antilleans
Sex				
male (study)	27.9	48.0	47.7	36.9
male (national)	46.7	54.3	52.4	48.5
female (study)	72.1	52.0	52.3	63.1
female (national)	53.3	45.7	47.6	51.5
Age				
18-39 year (study)	42.8	66.2	69.8	55.7
18-39 year (national)	56.2	67.8	68.8	64.5
40-60 year (study)	40.1	28.1	24.3	34.7
40-60 year (national)	34.7	24.3	23.9	29.9
60 year and older (study)	17.2	5.7	6.0	9.5
60 year and older (national)	9.1	7.8	7.2	5.5

* data Statistics Netherlands 2002 (CBS, 2002)

2 The use of primary medical care by migrant groups: a systematic review

This chapter has been submitted as:

Uiters E, Devillé W, Foets M, Spreeuwenberg P, Groenewegen PP. The use of primary medical care by migrant groups: a systematic review

2.1 Background

Equity in access to health care services has been a major concern among many western countries in the past decades. Equity refers to the extent to which access is determined by 'medical need' as proxied by health status as opposed to socio-economic factors such as ethnicity, income and insurance status (Rosenbach et al., 1995). Research addressing this issue often focuses on the variation in health care use according to social categories such as gender, ethnicity and socio-economic position. With respect to ethnicity, a substantial body of literature has documented differences between migrant groups and the majority population in health care utilization (Cooper et al., 1998; Reijneveld, 1998; Wells et al., 1987; Wells et al., 1989; Chesney et al., 1982; Patel, 1995; Ahmad et al., 1990; Van der Stuyft et al., 1989; Langwell and Moser, 2002; Smaje, 1998; Stronks et al., 2001; Smaje and Grand, 1997). Nevertheless, studies on ethnic differences in health care utilization do not always agree about the extent and direction of differences in use or the relative importance of the explaining variables, which makes it difficult to draw general conclusions.

One possible way of drawing conclusions on the basis of a body of research is to perform a systematic review. Reviewing the international literature provides a means to study ethnic differences in health care utilization from a broad perspective. Even though countries have different immigration histories (and hence different migrant groups) and dissimilar health care systems, international literature concerning ethnic differences in use of health care is relevant in revealing to what extent (determinants of) ethnic differences are universal or country-specific. Insight into the role of different determinants of health care utilization allows us to establish to what degree differences in utilization reflect differences in health care needs and in accessibility of health care systems.

This chapter assesses ethnic differences in health care use in a systematic way. The focus will be on the use of primary medical care. Health care systems differ widely between countries in terms of reimbursement system, the gate-keeping role of the family physician and the size of practices (small doctor's offices, large health care centers). However, primary care in general serves as an entry point to the complex health care system and provides a link to more specialized care. Strong primary care systems are associated

with a health-enhancing impact (Macinko et al., 2003). Given this relationship between primary care and health status it is important to identify disparities in the use of this type of care (Flocke et al., 1998; Starfield, 1994; Safran et al., 1998). Part of a systematic review is the assessment of the methodological quality of the studies. This way more insight is provided in the association between study quality and study results. In our review the study quality will be related to the likelihood of reporting significant differences in primary care use between ethnic groups. Given the expected large variation in study characteristics, attention will also be paid to the association between study results and study characteristics. The following research questions were formulated:

- 1 *'Are ethnic differences in the use of primary medical care systematically found across countries and ethnic groups?'*
- 2 *'To what extent is the significance of ethnic differences in primary medical care use related to study characteristics, strength of the primary care system and the methodological study quality?'*

2.2 Methods

The review has been performed by using a predefined protocol in which the following criteria for inclusion were determined.

Subjects

Only original, quantitative, peer-reviewed papers were taken into account. Our search strategy was further narrowed by only addressing studies performed within western industrialized countries. Furthermore, only migrant groups originating from non-industrialized countries were included. Non-industrialized countries were defined as all non-OECD member states (except Turkey and Mexico). Moreover, due to their specific situation, studies targeting at illegal immigrants, the homeless or handicapped people or refugees were not included. Also studies specifically addressing the primary medical care use of children or adolescents were not included. Because Afro-Americans are already living for many generations

in the United States (US), they were not included in the review. Studies without a majority reference group were also excluded.

Outcome measures

For the purpose of our review, only studies concerning the actual use of primary medical care were included. Primary medical care was defined as the provision of accessible health care services by clinicians who are accountable for addressing a large majority of health care needs, developing a sustained partnership with patients and practicing in the context of the family and the community (Shi et al., 2004). The relevance of studies for our review relied on such commonly recognized attributes of primary medical care as accessibility, comprehensiveness, first contact care, general scope, coordination, continuity and accountability (Boerma, 2003; Jaen et al., 1995; Grumbach et al., 1997; Shi, 1999). This means that studies concerning family physician care, outpatient care, private surgery care and care from a primary health center were included in our review. However, countries vary in the extent that primary medical care can be distinguished from secondary and tertiary care. In the United States emergency rooms function as first contact care especially for vulnerable groups. To enhance the comparability between countries, primary medical care was therefore operationalized as care provided by physicians with a specialty in family practice, general practice, general internal practice, obstetrics and gynecology, outpatient specialist care or emergency room care when a strong gate-keeping system was absent. The search strategy was narrowed by including only general health care use for physical problems. If it was clear that studies were aimed specifically at mental health problems, mental health care, care for specific diseases, palliative care, dental care and medication use, they were excluded.

Search strategy

For this review we initially consulted PubMed, PsycInfo, Cinahl, Sociofile, Web of Science and Current Contents electronic databases for the period 1980 to May 2003. The search strategy was performed by a librarian and aimed at a high sensitivity, ensuring the inclusion of as many relevant papers as possible. The databases were searched using the MeSH terms formulated in PubMed (Appendix 2.1). For the sake of sensitivity the initial search was performed regardless of context of care. In addition, for the

period May 2003 to January 2006 the results were updated by a comparable search in PubMed and PsycInfo only addressing primary medical care. No language restrictions were applied and no additional hand searches were performed. No authors were contacted for additional information. Where possible, additional information was retrieved from the Internet.

Study selection

The titles of the papers were examined by four researchers (EU, WD, PG and MF), each title was screened by two researchers independently of each other to assess appropriateness for inclusion (answer categories yes, doubt, no). First appropriateness was judged based on the titles. A paper was excluded in case two researchers agreed that one or more of the above inclusion criteria were not met in the title. In all other cases abstracts were retrieved and again screened by two reviewers. A paper was included in the review when two reviewers felt that the abstracts revealed that all inclusion criteria were met. A paper was excluded if both reviewers decided that one or more criteria were not satisfied. Where no consensus between 2 reviewers was reached, a decision was made in a consensus meeting with two reviewers (EU and WD). All remaining papers were judged based on the full text according to a similar procedure.

Quality assessment

Table 2.1 provides an overview of the quality indicators used in our review. These indicators are frequently used in quality assessment of observational studies (Stroup et al., 2000; Oxman and Guyatt, 1991; Saunders et al., 2003; Van der Windt et al., 1999; Assendelft et al., 1999). The quality of the studies was assessed by 2 reviewers independently of each other (EU and WD). In case of disagreement, consensus was achieved in a meeting with two reviewers (EU and WD). The overall quality score was included in the analyses as a linear variable. In addition to the overall quality of the study, whether or not a culture-/language-adjusted questionnaire was used and whether the study adjusted for potential confounders was added as a separate variable in the multilevel analyses (0 = no, 1 = yes).

Table 2.1 Methodological quality assessment of studies included in the review (n=37)

Study population	
Were the groups clearly defined?	8 studies unclear/no 29 studies yes
Can selection bias sufficiently be excluded?	11 studies unclear/no 26 studies yes
Did the migrant groups and the majority population originate from the same source population?	2 studies unclear/no 35 studies yes
Measurement	
Was the data collection adjusted for possible language problems or cultural differences	24 studies unclear/no 13 studies yes
Was use of primary medical care determined independently of ethnicity?	28 studies unclear/no 9 studies yes
Was ethnicity determined independently of primary medical care use?	14 studies unclear/no 23 studies yes
Analysis	
Were the results adjusted for potential confounders?	11 studies unclear/no 26 studies yes

Analyses

If studies reported more than one different outcome measure for primary medical care, all measures were included in our review. Given the fact that outcome measures are nested within studies, the structure of the data is hierarchical. To account for this hierarchical structure, logistic multilevel analyses were performed to answer the research questions concerning the association between the likelihood of significant differences between migrant groups and the majority population in the use of primary medical care and strength of the primary care system, study characteristics and quality of the study (using MLwiN) (Goldstein, 1995). In each study and for each ethnic group the significance of differences in use with the majority population was determined. This way a dichotomous independent variable could be calculated (0 = no significant difference in use, 1 = significant difference in use). The individual studies were interpreted as the highest level,

whereas outcome measures were defined at the lower level. If multiple results for the same outcome measure were presented, the most adjusted result was retrieved. Significant differences in use were determined at $\alpha = 0.05$ level. Where significance level was not mentioned in the paper, if possible the significance of differences was calculated by using additional information presented in the paper. Significance was assumed in cases of very large sample size. In all other cases the significance of differences in use remained unclear.

The following study characteristics were included in the logistic analyses; sample size for each ethnic group, length of the measurement period of use, publication year, adjustment for confounders at the outcome level and the type of confounders used in the analyses. To explore if significant differences in primary care use varied across migrant groups, this variable was reduced to four subgroups for power reasons. This reduction was based on distinguishing migrant groups originating from the African, Asian, American and European continent. If studies did not specifically define the migrant groups, a mixed category label was given. The strength of the primary care system in the countries represented in our review was based on scores used in a study among OECD member states (Macinko et al., 2003). The distribution of the scores was very skewed, with a weak primary care system in the US and strong primary care systems in the European countries, represented in our review, and Canada. This resulted in a dichotomisation of countries (0= other countries, 1= United States). Our review was restricted to the adult population; however not all studies made a clear distinction between adults and children. If possible, only results from the adult population were included, otherwise the overall results were retrieved.

2.3 Results

Study descriptions

The application of the search strategy to the specified databases resulted in 4,656 hits (4,404 from the initial search and 252 from additional search). Based on the titles and abstracts 167 studies were selected which possibly met the inclusion criteria. Based on the full text of the papers, it was concluded that 37 papers fulfilled all the inclusion criteria. Of these 37

papers 7 at least partly described the same datasets (see Appendix 2.2 - table 2.2). As the outcome measures of these studies differed, all 7 were included in our review.

Subjects

A wide variety of migrant groups were included in the studies (see Appendix 2.2 - table 2.2). Most attention was paid to Hispanics, Turkish and Asian groups. Not surprisingly this focus was strongly related to the host country as the studies were performed within 7 different countries. The definition of ethnicity was most often based on the person's country of birth (n=6), country of birth of the parents (n=2) or a combination of both (n=1). In addition, self identification was often applied (n=5) sometimes combined with other measures like place of birth and most spoken language (n=2). Less frequently name recognition (n=1) or perception of the physician was used (1).

Study findings

As some studies reported more than one outcome measure, in total 108 different outcome measures of primary medical care were included (see Appendix 2.2 - table 2.2). Most often primary medical care was operationalized as family physician care (GP) (n=42). Other outcome measures referred to outpatient specialist or emergency room care (n=24) and a doctor's office or primary health care center (11). When results were presented for different migrant groups separately, outcome measures were derived for each migrant group. This way it was possible to take migrant groups as a variable in our review.

The original 108 overall outcome measures, therefore resulted in 252 outcome measures for each migrant group separately. The number of outcome measures varied from country to country. Overall, a significantly higher primary care use among migrant groups as compared to the majority population was found in 20.2% of the outcome measures; 27.4% reported a lower use, 44.0% showed no significant differences and in 8.3% of the cases significance was unclear. Multilevel logistic regression analysis showed that studies performed within the US were more likely to find significantly different results than studies performed in the other countries (table 2.3).

Most often these significant differences in the US were in the direction of a lower use among migrant groups (table 2.4).

Table 2.3 Significant differences between ethnic groups in use of primary care by quality aspects and study characteristics (B and standard error)*

	B	Se
Intercept	0.23	0.16
Quality aspects		
total quality score	0.75	0.19
adjustment for confounders at study level	-2.34	0.81
culturally adjusted questionnaire	-1.83	0.52
Study characteristics		
country US	1.67	0.60
publication year	-0.00	0.04
adjustment confounders outcome level	-0.00	0.41
sample size majority reference group	0.00	0.00
sample size migrant groups	-0.00	0.00
length of reference period of use	-0.15	0.26
background migrant groups ²		
European	1.69	0.92
African	0.14	0.77
Asian	0.92	0.56
(South/central) American	0.23	0.60
Variance study level ¹	0	0
Variance outcome level	0.92	0.09

* significant differences are printed in bold ($p < 0.05$)

¹ the introduction of variables at study level resulted in the disappearance of the initial variance at the study level compared to the 0 model with only a constant

² the mixed category served as the reference group

Table 2.4 Ethnic differences in primary medical care by significantly related variables (%)

	Higher use	Lower use	No significant differences	Significance unclear
Adjustment for confounders at study level				
yes	18.6	25.8	47.1	8.6
no	32.3	38.7	22.6	6.5
Culture/language adjusted questionnaire				
yes	10.3	30.2	60.0	-
no	30.6	24.6	28.6	16.7
Adjustment for health status				
yes	21.6	15.7	60.8	2.0
no	19.9	30.3	39.8	10.0
Country				
US	10.1	55.1	32.6	2.2
other countries	25.8	12.3	50.3	11.7

In contrast to the country effect, the significance of differences in health care utilization was not dependent on the migrant groups studied. Although a large variety of migrant groups were studied (n=25), no overall consistent patterns could be distinguished. This implies that the country and thus possibly the strength of the primary health care system is a stronger predictor of differences in use than the migrant groups using care. The year of publication was not related to the significance of the differences found, suggesting that in general ethnic differences in primary care use did not change substantially over time. Moreover, the length of the reference period of use, adjustment for confounders at the outcome level, number of persons included with either a migrant background or majority background did not change the results. Lack of power complicated the multilevel analyses exploring predictors of a higher or lower use among migrant groups. However, the retrieved results confirmed the importance of the country factor (not shown).

Methodological study quality

Overall, studies met 2 to 6 of the 7 quality indicators (table 2.1). Most studies stated a clear definition of the ethnic groups (n=29), excluded bias sufficiently (n=26), adjusted at least some outcome measures for potential confounders (n=26) and used the same source population for all ethnic groups (n=35). One third of the studies took cultural differences and language problems during the data collection into account. Common means to handle cultural differences and language problems were the use of a bilingual interviewer or translated questionnaires. Logistic multi-level analysis emphasized the importance of taking into account cultural differences and language problems. Studies adjusting for cultural differences and language problems less frequently reported significant differences in use of primary medical care between migrant groups and the majority population than studies not taking this into account. Studies not adjusting for potential language or cultural problems were more likely to report a relatively higher use among migrant groups (table 2.3 and 2.4). The same applied to studies including confounders in the analyses as these studies also less frequently found significant differences in primary care use between ethnic groups. In addition, the direction of the differences was not comparable. Significant differences were more often in the direction of a higher use among studies not adjusting for confounders, whereas studies taking confounders into account more often reported a lower use among migrant groups. In-depth analyses showed that of the most frequently applied confounders (age, sex, education and health status), health status clearly related most strongly to ethnic differences in primary care use (not shown). Studies not adjusting for health status more frequently reported a lower use among migrant groups compared to studies adjusting for health status (table 2.4). Furthermore, the overall quality score of the studies was positively related to the likelihood of reporting significant differences. Higher quality scores increased the likelihood of significant differences (table 2.3).

2.4 Discussion

Research attention for ethnic differences in primary care use has increased over the years. Nevertheless, to our knowledge no systematic attention has been paid to the synthesis of results from the various studies. In our review, literature was systematically reviewed, resulting in the inclusion of 37

studies from 7 countries. With respect to the extent to which countries and migrant groups differ in primary medical care use from the majority population, we conclude that no overall consistent pattern could be distinguished with respect to migrant groups. Generally, migrant groups do not make an excessive demand upon the primary care system nor do they opt out (Johnson et al., 1983). However, the significance of differences in use varied across countries. Compared to the other countries, studies performed in the US more often reported significant differences between migrant groups and the majority population, especially in the direction of a lower use among migrant groups. As the strength of the primary care system in the US is found to be substantially weaker than in the other countries, our results suggest a relationship between ethnic differences in use and a country's orientation towards primary care. Possibly a strong primary care system positively contributes to equity in access for potentially vulnerable groups. This issue clearly needs to be addressed in future research as other studies suggest that psychological and cultural characteristics (e.g. adherence to Asian values) in help seeking strategies explain differences in use of care more than health system related characteristics (Weinick et al., 1996). Other research underlined the relative importance of education and income for explaining differences in use between ethnic groups in contrast to health system related variables (Zuvekas et al., 2003).

Study outcomes were found to be related to the quality indicators. In general a higher overall methodological quality score increased the chance of significant differences. Nevertheless, more detailed aspects of the study quality were inversely related to the likelihood of significant differences in primary care use. Studies allowing for potential language problems or cultural differences during the data collection and potential confounders in the analyses less frequently reported significant differences as compared to studies not adjusting specifically for these aspects. Subsequently, the results from studies lacking the inclusion of confounders and attention for cultural and language problems seem more inclined to report ethnic differences in health care use that are actually reflecting methodological shortcomings than existing differences between ethnic groups. For instance, neglecting possible cultural and language problems might result in a selective response of people from migrant groups. Nevertheless, given the contrasting findings between specific quality aspects and the overall methodological study quality, this issue clearly needs more research attention. However, the

importance of taking cultural differences and language problems into account is in line with research in this field suggesting that these factors affect the validity of self-reported data from migrant groups (Warnecke et al., 1997; McGraw et al., 1992; Hunt and Bhopal, 2003). The fact that confounders are clearly not equally divided across ethnic groups emphasizes the need for including confounders in the analyses concerning ethnic differences in health care use. Our results especially emphasized the importance of including health status in the analyses, which is consistent with other research stating that a higher use of health care among migrant groups is often related to their poorer health status (Reijneveld, 1998).

Our conclusions should be considered in the light of the following limitations. First, it has to be mentioned that non-significance in some studies might be due to a power problem instead of the absence of ethnic differences (Hargraves et al., 2001). Nevertheless, our analyses were controlled for the sample size of the ethnic groups and this was not related to the chance of significant differences in use. This suggests no large power problem across the studies included in the review. Our review focused on primary care use for physical problems, excluding use for mental health problems. Presumably ethnic differences in utilization for mental health problems will show a different pattern, as research suggests that cultural factors possibly play a role in the reluctance to consult for psychosocial problems. Some migrant groups are found to have a tendency to somatize psychosocial problems, which might in turn be an explanation for a higher primary care utilization (Yu Es, 1982). Since health status proved to be a crucial measure in health care utilization studies, future research needs to consider possible cultural differences in self assessed health (Murray and Williams, 1982). Although most studies included a clear description of the migrant groups, this classification varied largely, complicating the comparability of studies. The adequacy of ethnic background information collected in research has been discussed frequently (Smaje and Grand, 1997). The appropriateness of assignment to ethnic groups needs to be investigated and further developed. Furthermore, it is not evident that using the majority population's level of use provides a socially optimal benchmark (Weinick et al., 2000). It is possible that higher levels of use among the majority population represent over-utilization compared to their actual need. Moreover, it is not clear to what extent the ethnic differences observed are a result of ethnic differences in individual preferences for health care which

may or may not be reflective of problems with access to care (Weinick et al., 2000). For instance a possible preference for complementary or specialized care is not accounted for in the dependent variable of our review. Finally, the existence of significant differences in primary care use between ethnic groups is followed by the question addressing the exact extent of these differences. As our review focused on the likelihood of significant differences between ethnic groups, future research will need to address this issue more in detail.

Appendix 2.1 MeSH terms used in the search strategy

[Health Services OR Hospitals OR Rehabilitation OR Residential Facilities
OR Primary Health Care OR Ambulatory Care Facilities OR Use Or Utilization
OR Utilization OR Patient Care OR Health services Accessibility
OR Health Services/utilization OR Ambulatory Care Facilities/Utilization
OR Hospitals/Utilization OR Rehabilitation/Utilization/Residential
Facilities/Utilization
OR Primary Health Care/Utilization]

AND

[Transients and Migrants OR Ethnic Groups OR Minority Groups
OR Emigration and Immigration OR Cultural diversity OR Cross-cultural
Comparison
OR Acculturation OR Cultural Characteristics OR Cultural Deprivation]

Limits: All Adults: 18+ years, Editorial, Review, Letter, Comment (publication
type)

Appendix 2.2

Table 2.2 Studies included in the review by host country (n=37)

Authors and source	Sample	Migrant groups	Outcome measure*	Major findings*
United Kingdom				
Livinston et al., 2002	≥65 years olds living in urban poverty area	African/Caribbean	GP use (3 months)	no significant difference ¹
			hospital outpatient services (3 months)	no significant difference ¹
Lindesay et al., 1997	≥65 years old living Leicester	Hindu Gujaratis	GP use (1 month)	higher in migrant group ¹
Smaje et al., 1997	national general population	Chinese	GP use among respondents reporting illness (2 weeks, responses from 8 years)	higher among Indian and Pakistan ¹
		Caribbean		
		Indian		
		Pakistan	GP use among respondents reporting no illness (2 weeks, responses from 8 years)	no significant difference ¹
		Bangladesh		
		African	outpatient services among respondents reporting illness (3 months, responses from 8 years)	no significant difference ¹
		other		
			outpatient services among respondents reporting no illness (3 months, responses from 8 years)	lower among Indian, Pakistan, Chinese and the mixed population ¹
			GP use among people aged 0-44 (2 weeks, responses from 8 years)	lower among African and Chinese ²

Authors and source	Sample	Migrant groups	Outcome measure*	Major findings*
Balarajan et al., 1989	national population aged 0-64	West Indian Indian Pakistan	GP use among people aged >45 (2 weeks, responses from 8 years)	higher among Indian and Caribbean ²
			outpatient services among people aged 0-44 (3 months, responses from 8 years)	lower among Indian, Pakistan, Bangladesh, Caribbean and the mixed population ²
			outpatient services among people aged >45 (3 months, responses from 8 years)	higher among Caribbean and African ²
			GP consultation for men aged 16-64 (2 weeks)	higher for all migrant groups ²
			GP consultation for females aged 16-64 (2 weeks)	higher for Pakistan ²
Ritch et al., 1996	≥65 years old living in inner city wards Birmingham registered at a practice	Asian West Indian	GP use (1 year)	no significant difference ¹
Johnson et al., 1983	<60 years old inhabitants inner areas of the West Midlands conurbation	Asian Afro-Caribbean	no visit to the family physician (1 year)	lower among Asians ¹
			1-2 visits to the general practitioner (1 year)	lower among Asians ^{1*}
			3-5 visits to the family physician (1 year)	higher in migrant groups ^{1*}

Authors and source	Sample	Migrant groups	Outcome measure*	Major findings*
			≥6 visits to the family physician (1 year)	higher among Asians ¹ *
			visit to outpatient or emergency clinic while bypassing the family physician	lower among migrant groups, significance unclear ¹
Liao et al., 1995	Chinese inhabitants of greater Glasgow health board compared to the general Scottish population	Chinese	number of consultations with GP (1 year)	lower among migrant group ¹
Murray et al., 1986	16-64 years old adult population living in west London	Asian	GP use among men on own account (2 weeks)	higher among migrant group ²
			GP use among women on own account (2 weeks)	no significant difference ²
Baker et al., 2002	adult population from 10 GP practices in each of 6 health authorities	Migrant	GP consultation for condition-specific morbidity	significantly higher among migrant groups for backache, indigestion, sleep problems, migraine, cold/flu ²
Gillam et al., 1989	patients registered at an urban group general practice in London	Asian West Indian	GP consultation ratio for males (1 year, the total number of consultations observed divided by the total expected number)	higher among Asian, lower among West Indian ³

Authors and source	Sample	Migrant groups	Outcome measure*	Major findings*
			GP consultation ratio for females (1 year)	higher among Asian, lower among West Indian ³
			number of male consulting GPs with a particular condition (1 year)	lower among West Indian ³
			number of females consulting GPs with a particular condition (1 year)	lower among Asian and West Indian ³
Canada				
Blais et al., 1999	non institutional population ≥15 years olds Quebec	members of ethnic groups	number of outpatient or emergency room care (1 year) 1-2 3-5 6 or more	no significant difference ⁴
			number of contact with GP (1 year) 0 1-2 3-5 6 or more	no significant difference ⁴
			number of private office visits 1-2 3-5 6 or more	no significant difference ⁴

Authors and source	Sample	Migrant groups	Outcome measure*	Major findings*
Wen et al., 1996	non-institutionalized population province Ontario (16-64 years old)	Caribbean Asian born in Canada Asian immigrated >10 years Asian immigrated ≤10 years other ethnicity other ethnicity immigrated >10 years other ethnicity immigrated ≤10 years	GP use (1 year) emergency room use (1 year)	lower among Asian born in Canada, higher among Asian and other ethnic groups immigrated >10 years and other ethnic groups immigrated ≤10 years ² lower among Asian immigrated ≤10 years and other ethnicity immigrated >10 years ²
United States				
Langwell et al., 2002	enrollees Medicare	Asian Hispanic/Latino	no visits to doctor's office (6 months) 5 or more visits to doctor's office (6 months) any emergency room use (6 months)	higher among both migrant groups ¹ lower among Asians ¹ higher among Hispanic/Latinos and lower among Asian ¹
Ku et al., 2001	general population aged <65 years old	Hispanic Asian	any emergency room use (1 year) number of emergency room contacts (1 year)	no significant differences ² no significant differences ²

Authors and source	Sample	Migrant groups	Outcome measure*	Major findings*
Weinick et al., 2000 #	national non-institutionalized population	Hispanics	any ambulatory physician visit (most recent measure from 3 measurements during 20 years)	lower among migrant group ²
			mean number of ambulatory physician contact (most recent measure from 3 measurements during 20 years)	lower among migrant group ^{1*}
Schur et al., 1987 #	national general population	Puerto Rican	ambulatory physician visit during (1 year)	Puerto-Ricans slightly higher and other groups (some slightly) lower use, significance assumed ¹
		Mexican Cuban Other Latin Other Hispanic	number of physician visits during (1 year)	other Latinos higher and all other groups lower, significance assumed ¹
Cornelius, 1993 #	national general population	Hispanics Asian	ambulatory physician visit (1 year) overall among people in fair/poor health among people in fair/poor health and private insured among people in fair/poor health and public insured among people in fair/poor health and no insurance	lower among migrant groups, significance assumed ¹
			number of ambulatory physician visits (1 year) overall among people in fair/poor health	lower use among migrant groups, significance assumed ²

Authors and source	Sample	Migrant groups	Outcome measure*	Major findings*
			among people in fair/poor health and private insured	
			among people in fair/poor health and public insured	
			among people in fair/poor health and no insurance	
Pourat et al., 2000	≥65 years old living Los Angeles	Korean	number of ambulatory doctor's office visits past year	higher in migrant group ²
Yu et al., 1982	national ambulatory patients to non-federal employed physicians who are principally engaged in office practice	Asian-Pacific	office-based physician visit in a randomly assigned weekly reporting period aged 15-24 25-44 45-64 ≥65	In all age groups lower use among migrant group, significance assumed ¹
Guendelman et al., 2000	national adult population	Latinos	non-emergency outpatient room care (1 year)	no significant difference ²
			emergency room care (1 year)	no significant difference ²
Wells et al., 1988	general population Los Angeles	Mexican	any outpatient visit for physical problems (6 months)	lower use among migrant group ²

Authors and source	Sample	Migrant groups	Outcome measure*	Major findings*
Washington et al., 2002	national adult veterans	Asian-Pacific Hispanic	any ambulatory Veterans Affairs (VA) health care use (1 year)	higher among Hispanics ²
			VA-only ambulatory care use (1 year)	higher among Hispanics ¹
			dual VA/non-VA ambulatory care (1 year)	higher among Hispanics ^{1*}
			non-VA-only ambulatory care use (1 year)	lower among Hispanic ^{1*}
			number of VA-only ambulatory care visits (1 year)	higher among Asian-Pacific ¹
			number of dual VA/non-VA ambulatory care visits (1 year)	no significant difference ¹
			number of non-VA-only ambulatory care visits (1 year)	no significant difference ¹
Zuvekas et al., 2003 [#]	national general non-institutionalised population	Hispanic	overall number of ambulatory care visits (1 year)	significance is unclear ¹
			any non-emergency room ambulatory treatment from office based providers and outpatient departments of hospitals (most recent measurement from 3 measurements over a 3-year period)	lower in migrant group ¹

Authors and source	Sample	Migrant groups	Outcome measure*	Major findings*
			number of visits to these providers (most recent measurement from 3 measurements over a 3-year period)	lower in migrant group ¹
Weinick et al., 2004 [#]	national general population	Asian South American Mexican Cuban Puerto Rican Central American and Caribbean	any ambulatory health care use (1 year)	lower among all groups ² , except for Puerto Rican and South American not significant
			any emergency room use (1 year)	lower for Asian, Mexican and Cuban ²
Hargraves et al., 2001	national no elderly (<66 years old) with a public or private health insurance	Hispanic	proportion of physician visits in ER during past year	higher among migrant group ¹
			proportion of physician visits in ER during past year among persons in plans without gate keeping	no significant difference ²
			proportion of physician visits in ER during past year with gate keeping	no significant difference ²
Baxter et al., 2001	older (>60 years old) residents of a rural area in Colorado	Hispanic	number of outpatient visits (to clinic and emergency rooms)(1 year)	no significant difference ²
Andersen et al., 1986	national general population	Hispanic	number of medical doctors visits (1 year)	no significant difference ¹
			any physician visits (1 year)	no significant difference ¹

Authors and source	Sample	Migrant groups	Outcome measure*	Major findings*
			proportion outpatient department/ emergency room visits of total physician visits (1 year)	no significant difference ¹
Rosenbach et al., 1995 ¹	non- institutionalised national Medicare beneficiaries	Hispanic	outpatient department visit	no significant difference ²
			emergency room care (person year)	no significant difference ²
Sweden				
Thomson et al., 1988	adult population 4 health care cen- ters Stockholm	Turks	visit primary health care center (6 months)	higher among Turks, significance is unclear ³
Hjern et al., 2001	national adult population	Turks Chileans Iranians	emergency room care (3 months)	higher in all migrant groups ^{1*}
Norway				
Naess, 1992	general population inhabitants part Oslo	ethnic minorities	office visit primary healthcare center (10 months)	higher among minority groups ¹
			number of contacts primary health care center	no significant difference ¹

Authors and source	Sample	Migrant groups	Outcome measure*	Major findings*
Denmark				
Norredam et al., 2004	adult citizen residing in the catchment area of a specific hospital in Copenhagen	Pakistan Iraq Somalia Turkey	number of ER contacts (1 year)	higher Turks and Somalians ²
The Netherlands				
Stronks et al., 2001 #	adult population Amsterdam	Turks Antilleans Moroccans Surinamese	any GP use (2 months)	higher among Moroccans ²
Reijneveld, 1998 #	adult population Amsterdam	Turks Antilleans Surinamese Moroccans Other non-industrialized	GP use (2 months)	higher among all migrant groups except Antilleans ^{2,*}
			GP use past 2 months among 16-34 years old	no significant difference ²
			GP use past 2 months among 35-64 years old	no significant difference ²
Kocken et al., 1994	adult (16-75 years old) population city of Rotterdam	Surinamese	overall contact with GP (2 months)	higher in migrant group ²
			contact with GP (2 months) 55-75	higher in migrant group ²
			45-54	higher in migrant group ²

Authors and source	Sample	Migrant groups	Outcome measure*	Major findings*
			35-44	higher in migrant group ²
			25-34	no significant difference ²
			16-24	no significant difference ²
Weide et al., 1998	national adult (18-64 years old) population registered at a GP practice	Turks Surinamese Moroccans	number of GP contacts per 1000 registered patients (3 months)	higher among Surinamese and Turks ²
			number of office contacts with GP among users	higher for Turks and Surinamese ²
Belleman, 1986	adult population Amsterdam	Turks Surinamese/Antillean Moroccan mixed	number of GP contacts past year male 15-24	higher in all migrant groups, significance unclear ¹
			female 15-24	higher for all groups except among Moroccans significance unclear ¹
			male 25-44	higher in all groups, significance unclear ¹
			female 25-44	higher in all groups, significance unclear ¹

(partly) same data source

* significance is computed on basis data in paper, significance is not given in paper

1 not adjusted for confounders

2 adjusted for confounders

3 standardized for age

4 respondents were individually matched

3

Perceived health and consultation of GPs among ethnic minorities compared to the general population in the Netherlands

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3.1 Introduction

In the past ten years, policy makers and researchers have paid increasingly more attention to the health of ethnic minorities in the Netherlands. This was due to two factors. Primarily, during the same period, research groups have initiated extensive research about the still existing differences in health, more specifically about socio-economic differences in health (Mackenbach and Stronks, 2002). Secondly, the changing composition of the population in the same period has generated more attention for differences in health according to age, gender and ethnicity. In the past decades, the Netherlands has more and more become a multicultural society. In 2001, when the study took place, the percentage of non-western ethnic minorities was 9%, mostly resident in large cities like Amsterdam and Rotterdam (NBS, 2002; Van Wissen and Huisman, 1998; De Jong and Hoefnagel, 2000). As a consequence of decolonisation, active labour recruitment and better labour circumstances, large groups of immigrants came to live and work in the Netherlands. Later on, their numbers increased strongly because of family reunion and family formation. Moreover, political refugees and asylum seekers from more than 160 countries are living in the Netherlands (Castles and Miller, 2003). Eventually, the recent increase is not only due to immigration but also to an increasing size of the so-called second generation of ethnic minorities (De Jong and Hoefnagel, 2000).

The large number of people from ethnic minorities has important consequences for general practice and public health. Ethnic minorities often end up in a deprived position, characterised by various kinds of social disadvantages. Also in ethnic minorities the socio-economic situation – reflected by education, occupation, income, working situation – may be an important determinant of their health (Uitenbroek and Verhoeff, 2002). But other factors may be equally relevant: the health status in the country of origin at the moment of migration, the epidemiological profile of that country, the ethnic or cultural origin (e.g. genetic disorders, nephew-niece intermarriage). Recent research into the health of migrant populations in European countries has shown that, compared to the native population, different health problems exist within migrant groups and that their health is worse in respect of certain aspects. Perceived health is often worse among ethnic minority groups. Furthermore, ethnic minorities seem to be more susceptible to illness and to suffer from a wider variety of ailments.

However, with respect to other aspects of health, results are less straightforward. Certain health problems, like mortality due to cancer, seem to occur in the same frequency or less often within some minority groups compared to the native population (Reijneveld, 1998; Uniken Venema et al., 1995; Bollini and Siem, 1995; Sundquist, 1995; Stronks et al., 1999; Weide and Foets, 1997; Razum et al., 1998; Van Wersch et al., 1997).

Explanations for ethnic differences in health may be related to differences in behaviour, physical and social environment and psychosocial stress. Another important determinant for ethnic differences in health is the use of care (Van Wersch et al., 1997). An adequate use of health care services is an important precondition for health. In the Netherlands, little is known about the health care utilisation of ethnic minorities. Assumptions are made that ethnic minorities have less access to health care services than the native Dutch population. While it is important to study differences in morbidity patterns and aetiology, it is equally important to study to what degree persons make use of health care services. Does the use of care correspond with the perceived needs of the migrant groups; what differences exist between various groups of ethnic minorities; which factors affect their use and which problems arise with respect to accessibility and quality of care? These questions are also worth further investigation. Information on these aspects will help to improve health care in such a way that needs and wishes of migrant groups are taken into account, and that these groups will be less disadvantaged in this respect.

In the second Dutch National Survey of General Practice (DNSGP-2) attention has been paid to the explanation of ethnic differences in health and health care utilisation. The research questions that will be addressed in this chapter are the following:

- 1 *'How do ethnic minorities rate their own health compared to the native Dutch population? Which socio-demographic variables are associated with ethnic differences in self-rated health?'*
- 2 *'Do migrant groups differ in utilisation of GP care from the native population?'*
- 3 *'Do prevalence and incidence of diagnoses recorded by general*

practitioners differ between the migrant groups and the native population?’

3.2 Methods

For a description of the methods of the second Dutch National Survey of General Practice (DNSGP-2, 2001), see chapter 1. Self-rated health and socio-demographic characteristics were recorded on a form sent to all patients registered in a national sample of 104 GP practices. All Surinam, Antillean, Turkish and Moroccan responders and a random sample of 2% of the Dutch responders were included in the study. During one year data about all contacts with GPs and the incidence of diseases were registered.

Population

Social-demographic characteristics were assessed by means of a registration form sent in four languages (Dutch, English, Turkish, Arabic) to all patients of the 104 GP practices in the study. It provided information about the country of birth of the patient and his or her parents. Information about country of birth was used to indicate the ethnic background of the patients. If at least one parent was born abroad, a patient was indicated as having a foreign background (NBS, 2002). A total of 271,388 patients returned the registration form (70%), 3.9% of which belonged to the four major migrant groups. This chapter will focus on these four minority groups coming from Turkey, Surinam, Morocco and the Netherlands Antilles.

As the numbers of elderly people in some migrant groups are still small, the results reported in this chapter are restricted to people from 18 to 65 years. We took a random sample of 2% of the Dutch patients who responded to the registration form to end up with a number comparable to the biggest group among the four migrant groups. The total number selected for the five ethnic groups together was 10,252: 3,215 Dutch, 2,801 Surinamese, 938 Antillean, 1,833 Turkish and 1,465 Moroccan.

Self-rated health

For the analysis of self-rated health we used data of the registration form. Self-assessed health is measured by means of a single item question, i.c. 'In

general would you describe your health as: 1) very good, 2) good, 3) neither good, nor poor, 4) poor or 5) very poor' (Gandek et al., 1998). For the purpose of this analysis the five point scale was dichotomised into (very) good and fair to (very) poor perceived health. We performed univariate and multivariate analyses of possible determinants of self-rated health.

GP care

To analyse the use of GP care we analysed if the patients had had any contact with their GPs in 2001, and its determinants in a multivariate logistic regression analysis. On those who had had contact with their GPs we performed multivariate linear regression analyses on the number of contacts with GPs registered during one year in the various practices. To normalise the distribution, the number of contacts was transformed by natural log.

Diagnoses

For answering the third research question about ethnic differences in the incidence of diseases, we based our analyses on the registration of diagnoses during one year in GP practices. All diagnoses were registered with their ICPC codes in the electronic medical records (EMD) by the GP. As numbers are small and the age range is limited, we did not control for age or gender in this analysis.

3.3 Results

The various ethnic groups in this study differ in certain socio-demographic characteristics (table 3.1). The four migrant groups are somewhat younger than the Dutch group and they have received less education, especially the Moroccan patients: 24% had had no education at all (28% of the women). Half or more from the Surinamese and Antilleans were single and the rates of divorced were twice as high compared to the other groups. About 40% of Turks and Moroccans were working, compared to around 60% in the other groups. Six to ten percent in the migrant groups were unemployed, compared to 1.3% in the Dutch group, and 9-13% of Surinamese, Turks and Moroccans were disabled for work compared to 6% in the other two groups.

One quarter of Turkish and Moroccan women were housewives, which is higher than in other groups.

Table 3.1 Characteristics of study population, self-rated health and contact with GP according to ethnicity (%)

	Indigenous (n=3215)	Surinamese (n=2801)	Antilleans (n=938)	Turks (n=1833)	Moroccans (n=1465)
Female	52	60	57	49	50
Age					
18-24yrs	11	16	17	18	23
25-44yrs	45	53	54	59	53
45-65yrs	45	31	28	23	24
Education					
none	1	3	3	10	24
basic	10	16	13	36	22
secondary	67	66	67	46	45
high	22	16	17	9	9
Civil status					
single	30	50	61	20	26
married	65	37	28	73	64
divorced	4	12	10	5	6
widowed	2	2	1	2	4
Occupational status					
student	7	11	15	11	14
working	65	63	58	42	39
unemployed	1	6	9	8	10
housewife/-man	16	9	12	24	25
disabled for work	6	9	6	13	11
retired	4	2	1	2	2
Poor self-rated health	15	29	27	45	39
Contact with GP in 2001	74	62	70	84	9

Unadjusted self-rated health of Surinamese and Antillean patients was twice as bad as that of the Dutch patients, while Moroccan and Turkish patients rated their health up to three times worse (table 3.2). Older age, female

gender, lower education, various categories of civil status and of occupation were positively associated with poor health. In multivariate analysis, all these factors remained associated, but while their association decreased, the odds ratios of all migrant groups increased compared to the Dutch native group as reference group. The odds of adjusted poor self-rated health was 2.4 times higher in Surinamese and Antillean patients compared to the Dutch, and 3.8 to 4.7 times higher for Moroccan and Turkish patients respectively. Regarding interactions, the effect of gender was specifically significantly higher in Moroccan and Turkish female, and Moroccan and Turkish married patients.

Table 3.2 Determinants of self-rated health as poor

	OR (95% CI) univariate	OR (95% CI) multivariate	OR (95% CI) multivariate with interactions
Ethnicity			
Indigenous	1	1	1
Surinamese	1.8 (1.6 – 2.0)	2.4 (2.0 – 2.8)	2.1 (1.3 – 3.2)
Antilleans	1.6 (1.3 – 1.9)	2.4 (2.0 – 3.0)	2.0 (1.3 – 3.0)
Turks	3.3 (2.9 – 3.8)	4.7 (3.9 – 5.6)	2.1 (1.3 – 3.3)
Moroccans	2.6 (2.3 – 3.0)	3.8 (3.1 – 4.6)	1.7 (1.2 – 2.3)
Gender			
male	1	1	1
female	1.3 (1.2 – 1.4)	1.3 (1.1 – 1.5)	1.0 (0.8 – 1.3)
Age			
18-24yrs	1	1	1
25-44yrs	2.4 (2.0 – 2.9)	2.3 (1.8 – 2.9)	2.2 (1.7 – 2.8)
45-65yrs	4.8 (4.0 – 5.8)	4.4 (3.4 – 5.7)	4.3 (3.3 – 5.6)
Education			
none	7.0 (5.7 – 8.7)	2.3 (1.7 – 3.0)	2.1 (1.6 – 2.8)
basic	4.4 (3.8 – 5.2)	1.9 (1.5 – 2.3)	1.8 (1.5 – 2.3)
secondary	1.6 (1.4 – 1.8)	1.4 (1.2 – 1.6)	1.4 (1.2 – 1.7)
high	1	1	1

- table 3.2 continues -

- table 3.2 continued -

	OR (95% CI) univariate	OR (95% CI) multivariate	OR (95% CI) multivariate with interactions
Civil status			
single	1	1	1
married	1.7 (1.5 – 1.9)	1.0 (0.8 – 1.1)	0.7 (0.6 – 1.0)
divorced	4.0 (3.4 – 4.7)	1.8 (1.4 – 2.2)	1.6 (1.0 – 2.7)
widowed	4.4 (3.6 – 4.7)	2.0 (1.4 – 2.8)	1.5 (0.7 – 3.0)
Occupational status			
student	1	1	1
working	1.4 (1.1 – 1.7)	0.9 (0.7 – 1.2)	0.9 (0.7 – 1.1)
unemployed	5.4 (4.4 – 7.4)	2.7 (2.0 – 3.6)	2.7 (2.0 – 3.6)
housewife/-man	4.0 (3.2 – 5.0)	1.5 (1.1 – 2.0)	1.4 (1.1 – 1.9)
disabled for work	26.3 (20.4 – 34.0)	12.0 (8.0 – 16.4)	11.6 (8.5 – 15.8)
retired	4.9 (3.9 – 6.1)	1.2 (0.8 – 1.8)	1.1 (0.7 – 1.7)
Interaction			
Moroccan female (n=738)			1.4 (1.0 – 2.0)
Turkish female (n=906)			1.5 (1.1 – 2.1)
married Moroccans (n=923)			1.7 (1.1 – 2.7)
married Turks (n=1321)			2.1 (1.3 – 3.3)

Unadjusted, significantly more Turkish and Moroccan patients had had at least one contact with their GP in 2001, while significantly less Surinamese and Antillean patients had had contact with their GPs compared to Dutch patients. Female gender, older age, lower education, various categories of civil status and occupation, and poor self-rated health were positively associated with use of GP care. Adjusted for the remaining significant determinants (female gender, lower education, categories of civil status and self-rated health), only significantly more Turkish patients made use of GP care during the year 2001. Regarding interactions, significantly more female and married Turks contacted their GP, as well as divorced Moroccans. On the other hand, less female Surinamese patients contact their GPs.

The overall effect of self-rated health as poor increases, as interaction analysis shows that this effect is significantly lower in Moroccans, Antilleans and Surinamese patients (table 3.3).

Table 3.3 Determinants of contacting GP at least once in 2001

	OR (95% CI) univariate	OR (95% CI) multivariate	OR (95% CI) multivariate with interactions
Ethnicity			
Indigenous	1	1	1
Surinamese	0.6 (0.5 – 0.6)	0.5 (0.5 – 0.6)	0.7 (0.5 – 0.9)
Antilleans	0.8 (0.7 – 0.96)	0.9 (0.7 – 1.0)	0.9 (0.6 – 1.2)
Turks	1.8 (1.6 – 2.1)	1.5 (1.3 – 1.8)	0.7 (0.5 – 1.0)
Moroccans	1.3 (1.2 – 1.6)	1.1 (0.9 – 1.3)	0.9 (0.7 – 1.3)
Gender			
male	1	1	1
female	1.8 (1.7 – 2.0)	2.0 (1.8 – 2.2)	2.1 (1.8 – 2.5)
Age			
18-24yrs	1	ns	ns
25-44yrs	1.3 (1.2 – 1.5)		
45-65yrs	1.5 (1.3 – 1.7)		
Education			
none	2.5 (2.0 – 3.1)	1.5 (1.2 – 2.0)	1.5 (1.2 – 2.0)
basic	1.9 (1.6 – 2.2)	1.4 (1.2 – 1.7)	1.4 (1.2 – 1.6)
secondary	1.3 (1.1 – 1.4)	1.2 (1.1 – 1.4)	1.3 (1.1 – 1.4)
high	1	1	1
Civil status			
single	1	1	1
married	1.9 (1.7 – 2.0)	1.5 (1.3 – 1.6)	1.2 (1.0 – 1.5)
divorced	1.8 (1.5 – 2.2)	1.5 (1.2 – 1.9)	1.3 (0.8 – 2.1)
widowed	2.0 (1.4 – 2.9)	1.3 (0.9 – 1.9)	2.2 (0.9 – 5.8)
Occupational status			
student	1	ns	ns
working	1.3 (1.1 – 1.5)		
unemployed	1.2 (0.9 – 1.4)		
housewife/-man	2.7 (2.2 – 3.1)		
disabled for work	1.8 (1.5 – 2.2)		
retired	1.5 (1.1 – 2.0)		
Self-rated health			
good	1	1	1
poor	1.5 (1.4 – 1.7)	1.3 (1.1 – 1.4)	2.1 (1.6 – 2.8)

- table 3.3 continues -

- table 3.3 continued -

	OR (95% CI) univariate	OR (95% CI) multivariate	OR (95% CI) multivariate with interactions
Interactions			
Turkish female (n=906)			1.4 (1.0 – 2.0)
Surinamese female (n=664)			0.7 (0.6 – 0.9)
divorced Moroccan (n=85)			2.7 (1.0 – 6.9)
married Turks (n=1321)			2.3 (1.5 – 3.3)
Moroccans in poor health (n=471)			0.6 (0.4 – 0.9)
Antilleans in poor health (n=226)			0.7 (0.4 – 0.9)
Surinamese in poor health (n=712)			0.4 (0.3 – 0.6)

Once they have started contacting a general practitioner, women (5.1; 95%CI 5.0-5.2) contact their GPs more frequently than men do (3.6; 95% CI 3.4-3.7). People who rate their health as poor also had more contacts per year (6.0; 95%CI 5.8-6.2) than people who rated their own health as good (3.9; 95%CI 3.7-4.0) (table 3.4). Multiple linear regression analysis demonstrated that poor self-rated health and gender were the strongest determinants for the number of contacts per year, followed by age. All ethnic minorities had a higher number of contacts compared to the Dutch population in the following order of importance: Surinamese, Moroccan, Turkish and Antillean patients. Antillean patients differed significantly from Surinamese and Moroccan patients, Turkish from Surinamese patients. Adjusted for age, all ethnic minorities who rate their health as good had significantly more contacts with their GP than the Dutch, men as well as women (but Antillean men). Of the patients who rated their health as poor, Surinamese men as well as women, and Turkish women had significantly more contacts per year compared to the general population (data not shown).

Table 3.4 Mean number of contacts with GP per year per ethnic group, once clients are contacting GP (mean, 95% CI)*

	Indigenous	Surinamese	Antilleans	Turks	Moroccans
Overall	3.7 (3.5-3.8)	4.9 (4.7-5.1)	4.4 (4.1-4.7)	4.8 (4.6-5.0)	4.9 (4.7-5.1)
Good self-rated health	3.4 (3.2-3.6)	4.3 (4.1-4.5)	4.0 (3.6-4.4)	3.9 (3.6-4.2)	4.4 (4.0-4.7)
Male	2.8 (2.5-3.1)	3.6 (3.2-3.9)	3.3 (2.7-3.9)	3.2 (2.7-3.6)	3.6 (3.2-4.1)
Female	3.8 (3.6-4.1)	4.7 (4.5-5.0)	4.5 (4.0-5.0)	4.7 (4.3-5.2)	5.0 (4.6-5.5)
Poor self-rated health	5.7 (5.3-6.1)	6.7 (6.4-7.1)	5.5 (4.9-6.1)	5.8 (5.5-6.1)	6.0 (5.6-6.4)
Male	4.5 (3.9-5.1)	5.5 (4.9-6.2)	4.2 (3.2-5.2)	4.3 (3.9-4.8)	5.1 (4.5-5.6)
Female	6.5 (6.0-7.0)	7.3 (6.9-7.8)	6.1 (5.4-6.8)	6.8 (6.4-7.2)	6.8 (6.3-7.3)

* adjusted for age

The number of various diagnoses differed between the ethnic groups. While the Dutch had 0.17 different diagnoses per person, Surinamese had 0.30, Antilleans 0.35, Turkish 0.22 and Moroccans 0.14 different diagnoses per person. The top ten of diseases varied among the different ethnic groups, however, seven diagnoses appeared on each top ten (table 3.5). Looking at the top ten in the various groups, the incidence rates of acute respiratory infections (ARI) among Surinamese, Turkish and Moroccan patients are significantly higher compared to the Dutch. The diagnoses with lower incidence rates are as follows: earwax was lower in all groups; urinary tract infections (UTI) and dermatomycosis lower in Surinamese; sinusitis lower in Surinamese, Antilleans and Moroccans. The incidences rates of the following diagnoses were higher. The incidence rate of chest complaints was higher among all groups; back complaints in Antilleans, Turks and Moroccans and low back pain in Turks and Moroccans; muscle pain in Turks and Moroccans; throat complaints in Surinamese and Turks; other abdominal complaints in Moroccans. Incidence rates of coughing were lower in Surinamese and Moroccans. Incidence rates of contact eczema, fatigue/weakness, neck and knee complaints did not differ from the Dutch patients.

Table 3.5 Ten most frequently diagnosed diseases in general practice by ethnic group in 2001 (incidence rates per 1000 persons)

Indigenous		Surinamese		Antilleans		Turks		Moroccans	
ARI*	45.7	ARI	59.3	ARI	56.5	ARI	83.5	ARI	77.1
Ear wax	43.5	low back pain	33.6	UTI*	37.3	low back pain	50.2	low back pain	56.0
UTI	42.6	contact eczema	31.8	low back pain	36.2	coughing	45.3	dermatomycosis	45.1
Dermatomycosis	37.3	dermatomycosis	29.6	coughing	30.9	UTI	42.0	UTI	41.0
Coughing	36.7	coughing	28.9	contact eczema	30.9	dermatomycosis	41.5	contact eczema	32.1
Low back pain	32.7	UTI	25.7	dermatomycosis	27.7	muscle pain	32.7	back complaints	29.4
Sinusitis	31.4	fatigue/weakness	24.3	chest complaints	26.7	contact eczema	30.0	fatigue/weakness	28.7
Contact eczema	31.1	chest complaints	24.3	back complaints	25.6	back complaints	27.8	neck complaints	28.0
Fatigue/weakness	27.4	neck complaints	20.7	neck complaints	23.5	throat complaints	27.3	coughing	25.9
Neck complaints	24.9	other abdominal complaints	20.3	knee complaints	23.5	neck complaints	26.2	other abdominal complaints	25.3

* ARI = Acute Respiratory Infections; UTI = Urinary Tract Infections

3.4 Discussion

It seems clear from the various analyses that the four ethnic minorities in the Netherlands rate their health worse compared to the Dutch patients. Self-rated health is associated with various patient characteristics, e.g. education. Taking these characteristics into account, and controlling for socio-economic differences, the distance in poor health between the various ethnic groups and the Dutch increases. Ethnicity seems to be independently associated with self-rated health, as it did in other research (Pudaric et al., 2003; Franks et al., 2003). These differences seem to cluster in two groups, a Caribbean one (Suriname and Antillean) and a Mediterranean one (Turkish and Moroccan). Different ethnic groups may rate their health in a different way and use different references. Also, the distances between the various cut-off points may differ and certainly the use of the moderate category may differ between populations. Fair health was included in poor health for this analysis (Salomon et al., 2004). But we see that in the Mediterranean cluster poor self-rated health seems to be concentrated in female and/or married respondents.

The Turkish people rate their health the worst of all 5 ethnic groups, which is consistent with a significantly higher proportion consulting their GPs during 2001, even when controlled for all other associated factors. Also, Turkish females visit their GPs most of all.

Additionally, poor self-rated health remains an independent factor for visiting the GP, validating in a way this measurement as a predictor for use of care. On the other hand, a significantly smaller proportion of Surinam and Antillean patients have visited their GPs, especially Surinamese females. These data do not explain this finding, as these patients rated their health twice as bad compared to the Dutch patients. Contrary to what could be expected, Moroccan, Antillean and Surinamese patients in poor health seem less prone to consult their GP than the general population.

When patients visit their GP, all ethnic minorities, overall, visit their GP more often than the Dutch do. But these differences remain more pronounced among people with good self-rated health. Of the patients who rate health as poor, only Surinam people visit their GPs more often.

Women rate their health worse than men, twice as many women visit their GP at least once in a year, and women of all ethnic groups visit the GP more often. Differences between ethnic groups are similar for both genders.

The findings above show a heterogeneous picture in the use of GP care. Turkish and Moroccan populations signify a higher workload for GPs as a higher proportion visit their GPs and when they visit their GPs, they do it more often. For the other groups the message is different, as a smaller proportion use care, but when they do, they do it more often than the Dutch. The same differences exist for men and women. It seems that efforts in education and information about GP-care should focus on the Moroccan and Turkish populations. Information about self-care for minor complaints has to be addressed to all ethnic groups, because people in good health of all ethnic minorities visit their GPs more often, certainly the Surinam and Moroccan people.

The incidences of specific diseases and complaints are difficult to summarise, as the picture is quite heterogeneous over the four groups. Three of the four groups visit their GPs with a larger number of different complaints. Only Moroccan people present a smaller number of different diagnoses and complaints to their GPs. It should be investigated if this means that this group has difficulties in presenting some health problems to their GPs, although they are already making more use of GP care. Regarding specific diagnoses and complaints, when incidences are higher than those of the Dutch, it often concerns Turkish and/or Moroccan patients. This again is consistent with the outcome of self-rated health and the use of GP care. The higher incidences of ARI in almost all groups, and chest complaints in all, and the lower incidence of sinusitis in three groups might ask for further research into the specific causes and factors related to these diagnoses.

4 Is there a correlation between urbanisation level and ethnic differences in health care utilisation?

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4.1 Introduction

There is a link between ethnicity and health care utilisation. Various studies have shown that health care use among ethnic minorities differs from that of the indigenous population. The differences are closely correlated to type of care and they vary considerably from one ethnic minority group to another. For instance, people with a Surinamese, Moroccan or Turkish background attend their GP more often than the indigenous population; however, there is no difference in incidence of hospitalisation for these three groups. By contrast, people with an Antillean background are hospitalised more often than the indigenous population. The differences in care utilisation between ethnic minority groups and the indigenous population can be only partly ascribed to differences in age, gender, socio-economic status or perceived health (Stronks et al., 2001; De Bakker et al., 2000; Martens, 1999; Weide and Foets, 1997; Reijneveld, 1998; Weide and Foets, 1998; Dijkshoorn et al., 2000; Knipscheer and Kleber, 1998; De Veer et al., 2001; Polikar et al., 2000; Boomstra and Wennink, 2001; Kocken et al., 1994). It is likely that the differences in health care use may also be partly attributed to a number of problems affecting the quality of care for ethnic minorities. These problems are largely caused by unfamiliarity with the care supply, language difficulties and cultural discrepancies with regard to expectations. In recent decades there have been attempts to address the known problems by means of initiatives such as the ethnic minority intermediaries (VETC) (Schoenmakers, 2003; Van Wersch et al., 2003; Habraken et al., 2003; Van der Veen et al., 2003).

A limitation of the above-mentioned studies is that they have chiefly been conducted within the context of large cities. Although the majority of people from ethnic minorities do indeed live in highly urban areas, a considerable percentage live outside the cities (CBS, 2002). Furthermore, this percentage is expected to grow during the coming years (Van Wissen and Huisman, 1998). However, existing research results have not clearly established to what extent ethnic differences in health care utilisation also prevail beyond the main cities.

International research has shown that differences in health care use between urban and rural areas still obtain, even after taking account of ethnicity (Verheij, 1999). As far as indigenous populations are concerned, the link

between care use and degree of urbanisation has already been established in various studies. A possible explanation for this urban-rural divide is that city-dwellers may be more readily inclined to avail of health care services. Other reasons may include the availability of more facilities in the cities than in rural areas and less social support in urban areas (Verheij, 1999; Kenney and Dubay, 1992; Haynes, 1991; Dubay, 1993; Post et al., 1991; Leeftang et al., 1992; Verhaak, 1993).

Since data on health care utilisation were collected for this study from both urban and non-urban areas, we are in a position to address the question as to how far ethnic differences in health care utilisation are linked to urbanisation level. Specifically, we ask the question whether ethnic differences in health care use can be explained by the fact that ethnic minority communities live mostly in the large cities. In other words, is urbanisation a confounder in the correlation between health care utilisation and ethnicity?

In this chapter we also seek to establish whether ethnic differences in health care use are greater in highly urban areas than in less urban areas. If it is found that the ethnic differences in health care utilisation are more pronounced in the cities, it may be assumed that these differences reflect mechanisms at work in an urban environment. Consequently, policy relating to ethnic differences in health care use could then focus on the context of the big cities. However, if ethnic differences in health care utilisation should be found to a comparable extent both within and outside the main cities, this would imply that there is a separate influence of ethnicity. In that case a broader policy approach will be required to address ethnic differences than one merely based on urbanisation.

4.2 Methods

Random Sampling

The data were collected in 2001 as part of the Second Dutch National Survey of General Practice (NS2), in which a total of 104 general practices participated (Westert et al., 2004). The degree of urbanisation was determined by the location of the general practice. On this basis, 22 practices were located in a very highly urban area, 26 in a highly urban area, 21 in a

moderately urban area, 22 in a low-urban area and 13 in a non-urban or rural area. This distribution is representative of the location of general practices throughout the Netherlands (Schellevis et al., 2003). Urbanisation is determined on the basis of the criteria used by Statistics Netherlands. As a measure of urbanisation, the average household density within a one-kilometre radius was used. Very highly urban areas have an average density of at least 2,500 addresses, whereas a density of 500 or fewer addresses indicates a non-urban region. On this basis, Amsterdam transpired to be the most highly urbanised municipality in the Netherlands (Den Dulk et al., 1992).

Socio-demographic data pertaining to all 385,461 registered patients in the 104 participating general practices were collected by means of a brief questionnaire. The data collected related to age, gender, education, insurance type, ethnicity and perceived health. In keeping with the criteria used by Statistics Netherlands, ethnicity was determined on the basis of country of the respondent's birth as well as of both parents (CBS, 2002). A total of 294,999 patients returned the questionnaire (response rate of 75.6%).

A survey in Dutch language was conducted among a random sample of 12,699 patients, irrespective of ethnicity. The vast majority of this group consisted of the indigenous population; 2.7% (N=340) had a Surinamese, Antillean, Moroccan or Turkish background. The response rate for this Dutch language survey was 64.5%. The non-response analysis did not yield any major differences in terms of age, gender and urbanisation between respondents and non-respondents. The main reason for non-response was refusal (66.9%). In addition to the survey in Dutch, a second survey was conducted, exclusively among people with a Surinamese, Antillean, Moroccan or Turkish background. This survey was carried out among a total of 1,339 persons. Where necessary, the survey was conducted in the individual's own language. The response to this survey was 49.9%. A non-response analysis showed that non-response was equally large in all four groups. In terms of age and gender, Moroccan and Turkish respondents did not in general deviate from the national percentages per ethnic minority group. Only in the case of Surinamese and Antillean respondents were women and older people relatively over-represented (CBS, 2002). The main reasons for non-response were non-contactability (24.9%) and refusal (19.5%).

Data

All interviewed patients were asked about their perceived health and about chronic illnesses. Research has shown that in addition to age, gender, insurance type and education, a person's health status has an important influence on health care utilisation (Reijneveld, 1998; Dijkshoorn et al., 2000; Andersen and Newman, 1973; Alberts, 1998). Accordingly, the analyses were corrected for these variables. During the interviews, the respondents were also asked to answer yes or no to whether they made use of the following health care services:

- Contact with their GP during the previous two months.
- Contact with their GP more than twice during the previous two months.
- Contact with one or more medical specialists during the past year.
- Admission to hospital or clinic during the past year.
- Contact with a physiotherapist or remedial therapist during the past year.
- Contact with psychosocial caregivers during the past year (RIAGG - regional outpatient mental health services, crisis centre, social worker, psychologist, psychiatrist or psycho-therapist in independent practice, psychiatric outpatient clinic, addiction clinic, sex-therapist or other psychosocial practitioner).
- Contact with alternative practitioners (anthroposophist, acupuncturist, homeopath, manual therapist, natural healer, paranormal practitioner) during the past year.
- Use of home care services during the past year.
- Use of prescription medication during the past two weeks.
- Use of non-prescription medication during the past two weeks.

Analysis

In the analyses, the respondents from both surveys with a Surinamese, Antillean, Moroccan and Turkish background were grouped together. In addition, the analyses were restricted to adults aged over 18. After this restriction, a research population of 9,298 persons remained. 393 people had a Surinamese background, 285 were Antillean, 398 Moroccan and 438 Turkish. The remaining subjects (N=7,784) had an indigenous background. Because the respondents were approached via their GP, and it is likely that the health care utilisation is dependent on the GP in question, the data were subjected to multilevel analysis (MLwiN).

In order to gain insight into the extent to which ethnic differences in health care use may be explained by the fact that minority communities are concentrated in the major cities, first the uncorrected Odds Ratios (ORs) were calculated for different health care services per ethnic group. Then we corrected for age, gender, chronic illnesses, perceived health, insurance type and education. Finally, urbanisation was added to this model (table 4.2). The change in the OR of each ethnic group after the addition of urbanisation was seen as an indication of confounding by urbanisation. In these analyses, the indigenous population group comprised the reference group.

Subsequently, in order to establish whether ethnic differences in healthcare utilisation are greater in urban areas, we examined for each level of urbanisation whether the care use by the ethnic minority groups differed from that of the indigenous population (table 4.3). For this purpose, a model was analysed which contained ethnic origin, age, gender, chronic illnesses, perceived health, insurance type and education for each level of urbanisation. Owing to the small numbers of users for some services, it was not possible to conduct this analysis for each ethnic group and each type of health care use. This was the case for physiotherapy, psychosocial practitioners, home care services and hospital admissions. In addition to analyses for each ethnic group, an analysis was also carried out for each type of care use, in which all four ethnic minority groups together were compared to the indigenous reference group. Then using a trend analysis, we examined whether urbanisation provides a significant contribution to explaining differences in health care use between the combined minority groups and the indigenous population.

Urbanisation was included as a continuous variable in the analyses in table 4.2 and in the trend analysis in table 4.3. Because relatively few people from ethnic minorities live in areas with a low level of urbanisation, the categories 'low-urban' and 'non-urban' were combined for the analyses based on urbanisation level in table 4.3. With the exception of age, all data were included in the analyses as dichotomous variables.

4.3 Results

The four minority groups differ from the indigenous population in terms of age and gender profile (table 4.1). The average age of the Surinamese, Antilleans, Moroccans and Turks was lower than that of the indigenous population. All four ethnic minority groups had poorer perceived health than the reference group. The percentage of people who said they suffered from one or more chronic illnesses was, however, comparable in both minority groups and the indigenous population.

Education level was lower among Moroccans and Turks than in the other groups. Furthermore, a greater number of people in the four ethnic minority groups had public as opposed to private health insurance than in the indigenous population, and considerably more of them lived in very highly urban areas.

Based on the uncorrected data about health care use, we found that all four ethnic minority groups had more contacts with a GP, medical specialist and psycho-social practitioners than was the case among the reference group (table 4.1 and model 1, table 4.2). This difference is mostly significant, except for contacts in the Surinamese group with psychosocial practitioners (model 1, table 4.2) and for Moroccans who showed only small differences with the reference group, and mostly not significant.

The pattern of hospital admissions among ethnic minority groups does not deviate significantly from that of the indigenous population. Admissions among the Surinamese, in particular, are somewhat lower than in the indigenous population. The opposite is true for Antilleans. However, these differences are not significant. Based on the uncorrected data, ethnic minorities' use of other health care services is generally lower than that of the indigenous population (table 4.1 and model 1, table 4.2). With the exception of the Surinamese, the ethnic minority groups make less use of physiotherapy and prescribed medication than the indigenous population. For the Moroccan, this difference is significant for both physiotherapy and prescribed medication. However, this is not the case for Antilleans and Turks, who show a significant difference with the indigenous population on prescribed medication only.

Table 4.1 Respondents' characteristics, aged 18 and older

	Indigenous	Surinamese	Antilleans	Moroccans	Turks
N	7784	393	285	398	438
Age (mean)	49.8	44.7	39.3	36.0	36.5
Male (%)	44.9	28.5	37.9	48.2	47.7
Moderate to poor perceived health (%)	17.6	31.6	31.9	38.5	34.9
≥1 chronic illness (%)	65.7	68.4	59.2	57.3	59.8
Education less than MAVO (low-level secondary school) (%)	35.1	30.7	34.0	55.8	57.8
Public insurance (%)	66.9	83.3	82.2	94.1	93.8
Urbanisation level (%)					
very highly urban	14.2	70.5	49.8	62.3	55.5
highly urban	23.5	20.1	26.3	16.8	29.5
moderately urban	23.7	7.1	14.7	15.1	11.4
low-urban	26.3	1.5	7.0	4.3	3.4
non-urban/rural	12.4	0.8	2.1	1.5	0.2
Contact with GP in past 2 months (%)	41.8	53.3	48.4	46.9	52.2
>2 contacts with GP in past 2 months (%)	16.8	25.6	24.8	28.0	30.4
Contact with medical specialist in past year (%)	41.3	54.1	58.3	44.3	57.4
Admission to hospital/clinic in past year (%)	7.3	6.4	9.2	6.8	7.6
Contact with physio-/remedial therapist in past year (%)	16.4	20.1	12.6	12.6	13.9
Contact with psychosocial practitioner in past year (%)	6.2	9.2	13.3	8.5	10.7
Contact with home care services in past year (%)	6.3	4.8	6.7	2.3	3.9
Use of prescribed medication in past 14 days (%)	47.2	52.4	41.1	35.9	38.4
Use of non-prescription medication in past 14 days (%)	37.8	37.4	38.9	31.1	31.3

Concerning the use of over-the-counter medication (OTCs), only Moroccans and Turks showed a significant lower use than the reference group. With regard to home care services, only Moroccans made significantly less use than the indigenous population.

After correcting for age, gender, education level, perceived health and chronic illnesses, the difference between the indigenous population and the minority groups generally decreases (model 2, table 4.2). Adding the urbanisation variable to the model can give an idea of whether the relation between health care utilisation and ethnicity is confounded by urbanisation.

In this model, urbanisation introduces scarcely any change in the ORs, which implies that urbanisation hardly contributes to the explanation of ethnic differences in health care use (model 3, table 4.2). Urbanisation seems to have the most influence on contacts with psychosocial practitioners. For Moroccans, the difference with the reference group becomes significant after urbanisation is added. In the case of Antilleans vis-à-vis the indigenous population, the direction of the association is reversed, although not significantly so.

Table 4.3 shows a breakdown of health care utilisation according to the different levels of urbanisation. This demonstrates whether ethnic differences in health care use exist to a similar extent in urbanised areas and in less urbanised areas.

The use of GP care among ethnic minority groups is higher than among the indigenous population for virtually every urbanisation level. However, this is only significant for Antilleans living in low-urban areas (table 4.3). Interestingly, the four minority groups together had significantly more contact with their GP compared to the indigenous population, particularly in areas of moderate or low urbanisation. With respect to frequency of contact, this is particularly true in the highly urban and very highly urban areas. This implies that compared to the indigenous population, relatively more people from ethnic minority groups have contact with their GP in the less urban areas, whereas the frequency is higher in the urban areas. The extent of contact with medical specialists is also greater among the four minority groups than in the reference group. Particularly among Antilleans and Turks, this association is significantly present in all levels of urbanisation, with the exception of the low-urban areas.

Table 4.2 Use of health care services per ethnic minority group compared to the indigenous population (OR and 95% CI)*

	Surinamese	Antilleans	Moroccans	Turks
Contact with GP in past 2 months				
model 1	1.56 (1.26-1.93)	1.30 (1.02-1.66)	1.22 (0.99-1.51)	1.50 (1.23-1.84)
model 2	1.40 (1.12-1.76)	1.29 (0.99-1.68)	1.17 (0.93-1.50)	1.52 (1.22-1.90)
model 3	1.37 (1.09-1.73)	1.27 (0.91-1.43)	1.15 (0.91-1.43)	1.49 (1.19-1.87)
>2 contacts with GP in past 2 months				
model 1	1.78 (1.23-2.57)	1.65 (1.08-2.50)	1.73 (1.24-2.59)	2.12 (1.52-2.95)
model 2	1.42 (0.97-2.09)	1.45 (0.94-2.24)	1.32 (0.89-1.96)	1.65 (1.16-2.35)
model 3	1.49 (1.00-2.23)	1.50 (0.97-2.32)	1.37 (0.91-2.06)	1.73 (1.20-2.48)
Contact with medical specialist in past year				
model 1	1.65 (1.31-2.07)	1.98 (1.52-2.58)	1.14 (0.91-1.43)	1.89 (1.51-2.37)
model 2	1.55 (1.22-1.96)	2.29 (1.72-3.05)	1.23 (0.96-1.58)	2.28 (1.78-2.93)
model 3	1.53 (1.20-1.95)	2.27 (1.70-3.30)	1.21 (0.94-1.56)	2.25 (1.75-2.90)
Admission to hospital/clinic in past year				
model 1	0.84 (0.54-1.30)	1.24 (0.81-1.90)	0.94 (0.62-1.43)	1.05 (0.72-1.54)
model 2	0.73 (0.47-1.14)	1.16 (0.75-1.81)	0.91 (0.59-1.41)	1.00 (0.67-1.50)
model 3	0.71 (0.45-1.12)	1.14 (0.73-1.78)	0.84 (0.57-1.39)	0.98 (0.65-1.47)
Contact with physio-/remedial therapist in past year				
model 1	1.15 (0.87-1.54)	0.72 (0.50-1.05)	0.68 (0.49-0.95)	0.82 (0.61-1.11)
model 2	0.95 (0.70-1.28)	0.62 (0.42-0.91)	0.54 (0.38-0.77)	0.65 (0.47-0.89)
model 3	0.91 (0.67-1.24)	0.61 (0.41-0.89)	0.52 (0.37-0.78)	0.63 (0.46-0.87)

- table 4.2 continues -

- table 4.2 continued -

	Surinamese	Antilleans	Moroccans	Turks
Contact with psycho-social practitioner in past year				
model 1	1.43 (0.96-2.13)	2.15 (1.22-2.47)	1.28 (0.86-1.91)	1.74 (1.22-2.47)
model 2	0.92 (0.61-1.39)	1.38 (0.94-2.03)	0.67 (0.44-1.02)	0.95 (0.66-1.37)
model 3	0.74 (0.48-1.12)	0.74 (0.48-1.12)	0.56 (0.36-0.85)	0.79 (0.54-1.14)
Contact with home care services in past year				
model 1	0.77 (0.47-1.28)	1.09 (0.67-1.78)	0.34 (0.17-0.68)	0.63 (0.37-1.05)
model 2	0.72 (0.42-1.24)	1.60 (0.92-2.80)	0.50 (0.21-1.16)	1.02 (0.98-1.05)
model 3	0.71 (0.81-2.47)	1.58 (1.19-2.78)	0.49 (0.21-1.14)	1.00 (0.55-1.81)
Use of prescribed medication in past 14 days				
model 1	1.14 (0.91-1.44)	0.74 (0.58-0.95)	0.57 (0.45-0.71)	0.63 (0.51-0.78)
model 2	1.17 (0.91-1.51)	0.92 (0.68-1.26)	0.68 (0.52-0.90)	0.80 (0.62-1.04)
model 3	1.16 (0.89-1.51)	0.92 (0.68-1.25)	0.68 (0.51-0.90)	0.80 (0.61-1.04)
Use of OTCs in past 14 days				
model 1	0.79 (0.62-1.01)	0.93 (0.72-1.02)	0.70 (0.55-0.89)	0.66 (0.53-0.83)
model 2	0.63 (0.49-0.81)	0.77 (0.59-1.01)	0.58 (0.45-0.74)	0.55 (0.43-0.70)
model 3	0.58 (0.45-0.74)	0.72 (0.55-0.94)	0.52 (0.40-0.67)	0.50 (0.39-0.64)

* Numbers in bold print show a statistically significant difference from the indigenous reference population (p<0.05)

Model 1: only ethnicity

Model 2: age, gender, perceived health, chronic illnesses, education and insurance type added to model 1

Model 3: urbanisation level added to model 2

Table 4.3 Use of health care services per ethnic minority group and all four groups together and urbanisation level (OR and 95% CI)* #

	Surinamese	Antilleans	Moroccans	Turks	Group total
Contact with GP in past 2 months					
very highly urban	1.29 (0.96-1.74)	1.10 (0.74-1.63)	1.05 (0.75-1.48)	1.37 (0.98-1.91)	1.22 (0.98-1.52)
highly urban	1.35 (0.83-2.20)	1.09 (0.65-1.83)	0.91 (0.52-1.58)	1.50 (0.99-2.27)	1.24 (0.95-1.62)
moderately urban	1.41 (0.63-3.13)	1.58 (0.81-3.09)	1.69 (0.94-3.06)	1.47 (0.77-2.80)	1.55 (1.09-2.21)
low-urban	4.32 (0.58-23.8)	2.78 (1.11-6.95)	1.36 (0.56-3.32)	2.11 (0.69-6.49)	2.16 (1.27-3.66)
>2 Contacts with GP in past 2 months					
very highly urban	1.92 (1.09-3.39)	1.26 (0.59-2.68)	1.73 (0.91-3.27)	1.94 (1.05-3.57)	1.76 (1.12-2.77)
highly urban	1.31 (0.53-3.24)	2.33 (1.00-5.44)	1.11 (0.38-8.36)	1.90 (0.94-3.81)	1.66 (1.03-2.67)
moderately urban	0.71 (0.14-3.47)	1.32 (0.41-4.24)	2.23 (0.88-5.64)	2.19 (0.86-5.60)	1.66 (0.93-2.95)
low-urban	0.78 (0.09-1.97)	2.61 (0.93-7.38)	0.27 (0.03-0.80)	1.47 (0.35-6.15)	1.27 (0.62-2.59)
Contact with medical specialist in past year					
very highly urban	1.54 (1.13-2.09)	2.23 (1.46-3.39)	1.03 (0.73-1.47)	2.05 (1.41-2.96)	1.58 (1.25-1.99)
highly urban	1.24 (0.74-2.06)	2.46 (1.36-4.42)	2.20 (1.21-4.01)	2.46 (1.39-4.38)	1.99 (1.50-2.65)
moderately urban	2.77 (1.15-6.63)	2.48 (1.20-5.13)	0.94 (0.49-1.81)	2.28 (1.14-4.57)	1.83 (1.26-2.67)
low-urban	0.39 (0.06-2.34)	1.39 (0.56-3.47)	1.73 (0.60-4.93)	3.69 (0.99-13.8)	1.55 (0.88-2.73)
Use of prescribed medication in past 14 days					
very highly urban	1.10 (0.77-1.55)	0.91 (0.57-1.43)	0.60 (0.41-0.90)	0.75 (0.50-1.12)	0.86 (0.66-1.11)
highly urban	1.23 (0.72-2.09)	0.70 (0.38-1.27)	0.75 (0.39-1.45)	0.77 (0.48-1.22)	0.86 (0.63-1.15)
moderately urban	0.88 (0.36-2.15)	0.76 (0.36-1.80)	1.05 (0.52-2.10)	0.67 (0.32-1.41)	0.83 (0.55-1.25)
low-urban	2.65 (0.45-15.6)	1.89 (0.71-5.06)	0.25 (0.08-0.78)	2.93 (0.70-12.4)	1.09 (0.61-1.96)

- table 4.3 continues -

- table 4.3 continued -

	Surinamese	Antilleans	Moroccans	Turks	Group total
Use of OTCs in past 14 days					
very highly urban	0.62 (0.45-0.84)	0.47 (0.33-1.03)	0.45 (0.32-0.65)	0.47 (0.33-0.67)	0.55 (0.43-0.70)
highly urban	0.58 (0.36-0.95)	0.85 (0.52-1.40)	0.39 (0.22-0.70)	0.48 (0.31-0.73)	0.55 (0.42-0.72)
moderately urban	0.66 (0.37-1.25)	0.51 (0.24-1.06)	0.68 (0.37-1.25)	0.65 (0.34-1.24)	0.63 (0.43-0.90)
low-urban	0.49 (0.09-2.59)	0.88 (0.37-2.08)	1.74 (0.71-4.28)	0.50 (0.15-1.64)	0.91 (0.54-1.53)

* numbers in bold print show a statistically significant difference from the indigenous reference population with the same urbanisation level (p<0.05)

ORs corrected for age, gender, education, insurance type, perceived health and chronic illnesses

The use of medication follows a less clear pattern in the different urbanisation levels. In general, medication use is lower among the minority groups, irrespective of urbanisation level than in the indigenous population. With regard to prescription drugs, this is only significant among Moroccans living in either low-urban or very highly urban areas. The use of OTCs is also generally lower among in the ethnic minority groups. This difference is only significant for Surinamese, Moroccan and Turkish people living in highly or very highly urban areas.

Trend analysis across the different urbanisation levels, comparing health care use by the combined minority groups with the reference group yielded a significant result (not included in the table) only for the use of OTCs. The difference between the two groups in this respect diminishes slightly according as urbanisation decreases. With regard to the other types of health care services, there is no significant increase or decrease in use related to the urbanisation level.

4.4 Discussion

The aim of this study was to gain greater insight into the relation between ethnic differences in health care use and urbanisation. Although the direction of the associations we found sometimes deviate from those of earlier research, these results confirm the existence of ethnic differences in health care use. As expected, the extent and characteristics of these differences depend on the type of health service and the ethnic minority group in question. The established ethnic differences in health care use can be partly explained by differences in age, gender, perceived health, chronic illnesses, insurance type and education. After adjusting for these variables, the urbanisation factor does not appear to make any substantial contribution to explaining the differences in health care utilisation between the four ethnic minority groups and the indigenous population. Ethnic differences in health care use can therefore not be explained by urbanisation being a significant confounder.

Analyses conducted within each level of urbanisation also show that ethnic differences in health care use exist both in urban areas and in less urban areas. The discrepancies with the indigenous population do not show a

marked decrease or increase as urbanisation increases. The trend analysis does demonstrate, however, that the difference in use of over-the-counter medication declines slightly with decreasing urbanisation. Interestingly, among minority groups, more persons had contacted their GP in less urban areas, whereas in urban areas the contacts were relatively more frequent with the GP.

When interpreting the results it should be borne in mind that the findings relate only to adults aged 18 and older. Furthermore only people from the four largest ethnic minority groups were included in the study. This means that the impact of urbanisation on health care utilisation among other minority groups (e.g. those from more recent immigration countries) may be different from that of the four groups in the study. In addition, we did not take account of the heterogeneity existing within groups with the same ethnic background. For instance, no distinction was made between minorities from the first or the second generation.

It is not clear whether there may be some bias, on account of the response rate of only 49.9%. There may have been some selective response due to socio-economic status and health status. However, a non-response analysis of the data collected via the short questionnaire showed no difference between respondents and non-respondents with regard to socio-economic status and perceived health (see method). A comparison with results from other studies shows that our findings follow a fairly similar pattern for socio-economic status and for perceived health. In this study, however, the education level of the Surinamese and Antillean groups is somewhat higher on average than in other studies (Reijneveld, 1998; Dijkshoorn et al., 2000; Kocken et al, 1994; Weide and Foets, 1997). There is also a possibility that the relatively better integrated persons from ethnic minority groups participated in the survey, and that those who are less well integrated and are less familiar with the health services did not take part. This could explain the fact that our findings showed a higher rate of contact with medical specialists than was found in another large-scale study in the Netherlands (Stronks et al., 2001). Further research on the relationship between integration level and ethnic differences in health care utilisation may shed more light on this issue. The difference in contact frequency with medical specialists found in the two studies could also be linked to methodological differences in the research. In our study, the respondents were selected and approached via

the GP, whereas in that of Stronks et al., people were selected on the basis of the municipal registry, which may have produced differences in response. Other important discrepancies between both studies are related to the fact that the research population was older in our study; both first and second-generation ethnic minorities were included; and this study included respondents from the entire country, and not just Amsterdam.

Another important point is that any comparison between the indigenous population and ethnic minorities is hampered by the lack of cross-culturally validated questionnaires. Although there are indications that self-reporting yields a valid estimate of ethnic differences in health care use, caution is advised in interpreting these differences (Reijneveld, 2000). In order to minimise distortion, a pilot was conducted at the start of the study to establish the extent to which the questionnaire was understood by the minority groups and was related to their cultural background.

The results of our study suggest that there is only a slight association between ethnic differences in health care utilisation and urbanisation. Ethnic differences in health care use appear to exist fairly independently of the urbanisation level of the residential environment. This implies that ethnic differences in health care use may not be regarded as a phenomenon that predominates in the major cities. These differences are not concentrated in the cities alone, and therefore cannot be explained by an accumulation of problems occurring in urban areas. Consequently, it may be concluded that policy relating to ethnic differences in health care utilisation requires a broader approach than the context of large cities alone. However, given the relatively large number of people with an ethnic minority background currently living in urban communities, the monitoring of health care utilisation by ethnic minorities within the context of the cities remains a very important policy issue.

Our research findings do not indicate the extent to which the ethnic differences in health care use represent an undesirable situation. Further study is required in order to shed light on the mechanisms underlying these differences. In particular, the question remains as to whether health care utilisation by ethnic minority groups as well as the indigenous population is adequate. For instance, do ethnic differences in health care utilisation lead to ethnic differences in health status? In the light of the results of this study, it

is important to be aware of the differences between the various ethnic minority groups. For instance, it is unclear why Moroccans in general tend to make less use of health care than the other three minority groups. Furthermore, most of the research to date concerning health care utilisation has focused on Surinamese, Antilleans, Moroccans and Turks; yet, in view of the discrepancies in health care use between these groups, it would appear important to direct attention at other ethnic minorities as well. In addition to seeking an answer to the question to what extent the health care use by ethnic minorities is adequate, research should also be conducted on the question as to what extent the care given to ethnic minority patients is adequate. Communication difficulties and cultural impediments are major sources of misunderstanding and may have consequences for the effectiveness of the selected treatment and subsequent adherence (Van Wersch and Van Poppel, 2003; RVZ, 2000; Harmsen, 2003).

5

Use of health care services by ethnic minorities in the Netherlands: do patterns differ?

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5.1 Introduction

Differences in health care utilisation between ethnic minorities and the indigenous population have been reported frequently (Smaje and Grand, 1997; Stronks et al., 2001). An adequate use of health care services is an important precondition for health. Therefore, it is important to examine whether ethnic differences in utilisation are an indication of problems in accessibility of health care services, or whether they reflect differences in need. One shortcoming in much of the literature concerning health care utilisation is that usually only one type of health service is studied at a time. Interdependencies between various levels of health services are largely neglected, ignoring the fact that using another may compensate for less use of one service. In order to gain more insight into potential substitution effects, Pescosolido emphasises that health care utilisation should not be studied in isolation (Pescosolido, 1992). This means that, in addition to utilisation of single services, patterns of use need to be considered. Patterns are referring to the use of different sources of care during the same period. In the Dutch health care system general practitioners (GPs) act as gatekeepers to more specialised care. This gate keeping system is very familiar to the indigenous Dutch population. For all publicly insured patients and some privately insured patients more specialised treatment requires a referral from their GP. As a consequence of the income ceiling in eligibility for public insurance, most people are publicly insured during a part of their (working) life. This way most people are used to contact specialised care only after contacting their GP (Kulu-Glasgow et al., 1998). Minorities, however, often do not originate from a country with a gate keeping system. Therefore, it is interesting to examine which place GPs occupy among minority groups. If ethnic minority groups appear to make more use of specialist care without seeing their GP, this might be an indication that GPs act to a lesser extent as gatekeeper among these groups as compared to the indigenous population. In our study we will try to assess the nature of ethnic differences in health care utilisation by examining whether differences in patterns of health care utilisation can be found. The main research questions in this chapter are:

- 1 *'Which patterns of health care utilisation are found in the major ethnic minority groups in the Netherlands?'*

- 2 *'Do ethnic minority groups differ in patterns of health care utilisation from each other and from the indigenous Dutch population?'*

5.2 Methods

Population

Data were derived from the Second National Survey of General Practice, carried out in 2001 (Westert et al., 2005). A nationally representative sample of 104 GP practices participated in this Survey. The total population of these practices consisted of approximately 385,500 people. The socio-demographic characteristics of all registered patients were assessed by means of a census. Ethnic background was indicated by the country of birth of the respondents and their parents. When at least one parent was born abroad, the individual was recorded as having a foreign background (CBS, 2002). Data on health and health service utilisation were collected through face-to-face interviews. First, in a random sample per practice, a total of 12,699 Dutch-speaking people, were interviewed, regardless of ethnic background. The response rate of this study was 64.5%. The response rate did not vary significantly for age or gender. An additional study among a random sample of 1,339 people ages 18 years and over from the four largest ethnic minority groups in the Netherlands was conducted. These four groups comprised people from Turkey, Surinam, Morocco and the Netherlands Antilles, who together represent about 6% of the population of the Netherlands. The content of the interviews among the ethnic minority groups was similar to the interviews among the Dutch-speaking respondents. If necessary, people from the ethnic minority groups were interviewed in their own language. The response rate in all the ethnic minority groups was approximately 49%. No indications for a selective non-response were found concerning age and gender.

Measurements

This study of health care utilisation concerned any use of the following eight types of professional services in the year preceding the interview: general practitioner, outpatient specialist, hospital admission, physiotherapist, other allied health professional care, ambulatory mental health care, homecare and complementary care. In addition to the use of professional care, use of

informal care was included. The following variables that have been found to be related to ethnic differences in health care utilisation were included in the analyses: health status, age, gender, level of urbanisation and socio-economic position (Uiters et al., 2005). Health status was measured by the following two indicators: self-rated health, measured by a single-item question 'In general would you describe your health as: 1) excellent, 2) very good, 3) good, 4) poor or 5) very poor' (Gandek et al., 1998) and the number of chronic conditions. The number of chronic conditions was estimated by asking participants whether they had suffered from one or more chronic conditions in the twelve months preceding the interview. Both indicators of health status were dichotomised for the analyses due to a skewed distribution (table 5.1). Level of urbanisation was categorized as follows: very highly urbanised, highly urbanised, moderately urbanised, slightly urbanised and not urbanised (Den Dulk et al., 1992). Socio-economic position was indicated by type of insurance (public or private) and educational attainment (none, elementary school, high school and college or university). Adjustment for educational attainment was achieved by introducing two dummies. The highest level (college or university) served as the reference category towards the lowest (none, elementary school) and middle level (high school).

Analyses

The analyses reported in this chapter are restricted to subjects aged over 18. Because respondents were approached through GP practices, the structure of the data is hierarchical. To account for this hierarchical structure multilevel analyses were performed, using MLwiN (Goldstein, 2003; Leyland and Groenewegen, 2003). First, a logistic multilevel analysis was performed to investigate whether the use of (single) health care services among the minority groups differed from the indigenous population. Second, on the basis of the self-reported utilisation rates of the single health care services, patterns of use were determined. The most frequently occurring combinations of use of single services among the minority groups were defined as patterns. These combinations are exclusive, which means that no other services than the ones mentioned in a pattern are used.

To investigate whether the minority groups resort to a different set of unique combinations of health care services compared to the indigenous population, a multinomial multilevel analysis was performed (Verheij,

1999). People who indicated that they used only GP services during the past year served as the reference category with regard to the dependent variable. People who did not use any health care were not included in these analyses. With respect to ethnicity, the indigenous population was taken as the reference category. The GP practice was interpreted as the highest level. Personal characteristics were defined at the lower level.

5.3 Results

Background characteristics varied between the ethnic groups (table 5.1). All four minority groups were younger, reported poorer health, and were more likely to have public health insurance and to live in more highly urbanised areas than the indigenous population. The number of chronic conditions, gender distribution and educational attainment showed a less consistent picture.

To assess the most frequently occurring patterns of health care services, first the utilisation figures for single services were examined. The Surinamese group appeared to be the only minority group where the percentage of those who have had no contact with professional health care services at all was significantly lower than in the indigenous population. The use of single services appeared to differ between the ethnic groups (table 5.2). In general, the minority groups had significantly more contact with their GP and outpatient specialist. The hospital admission rates seemed quite similar for the indigenous population and the minority groups. The minority groups did not differ significantly from the indigenous population with regard to contact with ambulatory mental health care, homecare and the use of informal care. With regard to the remaining services, such as other allied health professional care and complementary care, utilisation figures tend to be the highest among the indigenous population.

Table 5.1 Distribution of age, gender, health status, education, insurance status and level of urbanisation across the ethnic groups

	Indigenous	Moroccans	Antilleans	Turks	Surinamese
N	7789	397	284	437	394
Age (mean)	49.8	36.1	39.3	36.5	44.7
Gender (%): men	44.9	47.6	37.3	48.1	28.4
Perceived health (%): (very) poor	17.6	38.2	32.0	34.8	31.5
Number of chronic conditions (%): ≥ 1	65.7	57.4	59.0	59.7	68.3
Insurance type (%): public	67.2	94.4	82.1	94.0	83.1
Education (%): none/elementary	17.8	47.9	17.0	45.6	23.1
high school	60.4	42.1	67.8	46.1	59.8
college/university	21.8	9.9	15.2	8.3	17.1
Level of urbanisation (%): very high	14.2	62.5	50.0	55.6	70.6
highly	18.4	11.8	19.4	12.6	18.5
moderate	20.5	12.3	14.8	24.9	7.6
slight	26.9	8.1	13.0	6.6	2.3
not	20.0	5.3	2.8	0.2	1.0

Table 5.2 Adjusted use of (single) health care services during past year across ethnic groups (OR and 95% CI)*, ¹

	Moroccans	Antilleans	Turks	Surinamese
No use of professional health care services	0.85 (0.60-1.20)	0.71 (0.47-1.09)	0.76 (0.54-1.07)	0.61 (0.40-0.91)
Contact general practitioner	1.56 (1.13-2.15)	1.46 (1.01-2.10)	1.55 (1.14-2.11)	1.90 (1.33 -2.72)
Contact outpatient specialist	1.26 (0.97-1.64)	2.38 (1.77-3.21)	2.37 (1.83-3.06)	1.61 (1.25-2.06)
Hospital admission	0.84 (0.53-1.33)	1.23 (0.78-1.95)	0.93 (0.61-1.43)	0.74 (0.46-1.17)
Contact physiotherapist	0.53 (0.37-0.77)	0.64 (0.43-0.95)	0.70 (0.50-0.97)	0.93 (0.68-1.27)
Contact other allied health professional care	0.29 (0.16-0.56)	0.82 (0.52-1.30)	0.33 (0.19-0.58)	0.65 (0.42-1.02)
Contact ambulatory mental health care	0.65 (0.42-1.01)	1.35 (0.90-2.03)	0.92 (0.62-1.36)	0.83 (0.54-1.29)
Contact homecare	0.46 (0.19-1.10)	1.59 (0.88-2.86)	0.95 (0.52-1.5)	0.68 (0.38-1.23)
Contact complementary/alternative care	0.31 (0.17-0.54)	0.46 (0.27-0.79)	0.47 (0.30-0.74)	0.41 (0.26-0.66)
Informal care	0.79 (0.55-1.12)	0.66 (0.44-1.0)	0.86 (0.61-1.17)	0.83 (0.59-1.20)

* significant differences from the reference group in bold print (p<0.05)

¹ odds ratios are adjusted for age, gender, education, insurance status, health status and level of urbanisation

After examining the utilisation figures for single services, patterns of utilisation were assessed. The most frequently occurring exclusive combinations among the minority groups are shown in table 5.3. Clearly, ethnic differences in utilisation not only exist in the use of single services, but also with respect to combinations of different services used. Although the differences were not tested for significance, the likelihood of only using GP services appeared to be the highest among Moroccans (32.2%), whereas Antilleans seemed least likely to only have contacted a GP (21.8%). Furthermore, minority groups showed smaller percentages in contact rate with professional health care services without contacting their GP compared to the indigenous population. Particularly among Moroccans, Turks and Surinamese this rate was almost half of the rate of the indigenous population. The likelihood of combining contact with a GP with an outpatient specialist or hospitalisation was higher among Antilleans, Turks and Surinamese than among Moroccans and the indigenous population. In addition to this pattern, Surinamese people also appeared to have most frequently contacted physiotherapists or allied health professionals (11.7%). With respect to the remaining patterns of health care services ethnic differences were less pronounced.

Logistic multilevel analysis was performed to evaluate the number of people using professional care without reference to a GP (table 5.4). This turned out to be significantly lower among minority groups than in the indigenous population, except for Antilleans. Furthermore, we identified the most frequently occurring exclusive combinations of service use in the minority groups on the basis of the results in table 5.3. These combinations appeared to be centred on the following four types of services:

- GP care only;
- outpatient specialist care (contact with a GP and outpatient specialist or hospital admission);
- mental health care (contact with a GP and ambulatory mental health care and possibly other services);
- allied health professional care (contact with a GP, outpatient specialist/hospital admission and physiotherapist or other allied health professional care).

A multinomial multilevel analysis was performed to investigate whether the frequency of these four patterns is the same in the minority groups as in the indigenous population. With regard to the pattern of specialist care it can be concluded that, compared to the use of GP care only, this specific pattern is more likely in the minority groups than the indigenous population. Among people with an Antillean or Turkish background the difference with the indigenous population is significant (respectively RRR=2.11, 95% CI=1.53-2.90; RRR=1.91, 95% CI=1.46-2.52). With regard to the pattern of mental health care, relatively large ethnic differences emerged. Again this pattern was significantly more frequent in the Antillean group (RRR=1.61, 95% CI=1.07-2.41), but the reverse was found in the Moroccan group (RRR=0.42, 95% CI=0.27-0.66). The fourth pattern concerned the combination of specialist care and allied health professional care. This pattern appeared to be less frequent in the ethnic minority groups than in the indigenous population. Only among Moroccans this difference was significant (RRR=0.55, 95% CI=0.34-0.88).

Multilevel analysis showed that the occurrence of patterns is clustered at the GP level. The strongest clustering effect at the GP level was found in relation to the patterns of specialist care and mental health care not shown). This means that the likelihood of contact with mental health care and specialist care is most strongly dependent on the GP. Practices that refer more patients to specialist care were also more likely to refer more patients to mental health care.

Table 5.3 Frequently occurring (combinations of) sources of health care contacted in the past year (%)

	Indigenous	Moroccans	Antilleans	Turks	Surinamese
N	7789	397	284	437	394
Only general practitioner	25.0	32.2	21.8	27.7	27.4
Professional health care use without general practitioner	6.8	3.5	4.6	3.2	3.0
GP + outpatient specialist/hospital admission	16.2	19.1	24.6	23.6	19.8
GP + physiotherapist/paramedic care	5.6	3.8	4.6	2.7	5.6
GP + mental health care	1.0	1.0	2.1	1.6	1.3
GP + informal care	1.3	1.3	1.8	1.4	2.0
GP + outpatient specialist/ hospital admission + physiotherapist/other allied health professional care	7.7	6.5	7.0	6.2	11.7
GP + outpatient specialist/hospital admission + informal care	1.6	5.0	2.1	3.4	3.3
GP + outpatient specialist/ hospital admission + mental health care	1.7	2.0	4.9	1.8	1.8

Table 5.4 Patterns of health care services use (OR, RRR and 95% CI)*, ¹

	Moroccans	Antilleans	Turks	Surinamese
Binary response variable				
users of care without general practitioner (GP)	0.54 (0.30-0.98)	0.74 (0.41-1.33)	0.49 (0.27-0.87)	0.46 (0.25-0.86)
Multinomial response variable				
GP + outpatient specialist care/hospital admission ^{2, 3}	1.25 (0.93-1.68)	2.11 (1.53-2.90)	1.91 (1.46-2.52)	1.20 (0.90-1.61)
GP + mental health care ^{2, 3}	0.42 (0.27-0.66)	1.61 (1.07-2.41)	0.86 (0.58-1.26)	0.70 (0.46-1.07)
GP + outpatient specialist/hospital admission + allied health professional care ^{2, 3}	0.55 (0.34-0.88)	0.96 (0.58-1.59)	0.74 (0.47-1.15)	0.97 (0.65-1.43)

* significant differences from the reference group are printed bold (p<0.05)

¹ odds ratios and relative risk ratios are adjusted for age, gender, education, insurance status, health status and level of urbanisation

² reference group is the indigenous population

³ users of general practitioner services only are the reference category in the dependent variable

5.4 Discussion

The aim of our study was to assess which patterns of health care utilisation are found in the major minority groups and, subsequently, to examine whether these utilisation patterns differ between the ethnic groups studied. The most frequently occurring patterns of service use appeared to be centred on the following types of services: GP care only, outpatient specialist care, mental health care and allied health professional care. Multilevel analysis showed that the occurrence of these patterns was clustered at GP level, indicating that the occurrence of specific patterns of utilisation is partly dependent on the GP. In keeping with previous research concerning the utilisation of single health care services, the minority groups varied in patterns of utilisation (Smaje and Grand, 1997; Stronks et al., 2001). Compared to the indigenous population, significant differences in utilisation patterns were especially marked for people with a Moroccan, Turkish or Antillean background. Moroccans tend to show lower utilisation patterns, whereas Turks and Antilleans, in general, showed higher or similar rates as the indigenous population. Differences in age, gender, health status, type of insurance, educational attainment and level of urbanisation could not account for these differences. Consistent with previous research, our study confirmed the high utilisation of general practice services among minority ethnic group relative to the indigenous population. However, in contrast to other studies this higher use of GP care is not combined with a lower use of specialist care (Smaje and Grand, 1997; Stronks et al., 2001; Cooper et al., 1998). This might be explained by methodological differences possibly influencing the results. Important differences between our study and other studies are the facts that in our study respondents were older (Smaje and Grand, 1997; Stronks et al., 2001; Cooper et al., 1998), ethnicity was based on country of birth instead of self-definition ((Smaje and Grand, 1997; Cooper et al., 1998) and the survey was nationally representative and not local (Stronks et al., 2001).

The general picture that emerges from our study indicates that, except for Surinamese, the likelihood of contact with any professional health care services at all was equal among minorities and the indigenous population. Compared to the other groups, Surinamese were most likely to contact a professional health care service. Moreover, no evidence was found that minority groups make more use of professional health care services while

bypassing their GP. In contrast to the expectations beforehand, the minority groups made even significantly less use of professional services without contacting a GP than the indigenous population, except for Antilleans. This indicates that the gate keeping function of the GP is even more in evidence among the minority groups. Furthermore, with respect to outpatient specialist care, no indication for a substitution effect is found. The higher contact rate with their GP among the minority groups does not seem to be attributable to a substitution for specialised care.

Interpretation of the results is limited by the fact that our study only concerned adults aged at least 18 years. Furthermore, only minority groups from the four largest groups in the Netherlands were included. Given the differences found between the minority groups, this implies that the results do not necessarily apply to minorities with a different ethnic background. Moreover, little attention has been paid to the heterogeneity within the minority groups. For instance, no distinction was made between immigrants from the first and second generation. It is very likely that patterns of health care utilisation not only differ between ethnic groups but also within these groups. We were unable to make a distinction between contact with a medical specialist at the emergency room (ER) or in another setting. Although within the Dutch health care system visits to the ER should be preceded by a GP's referral, access to the ER is relatively easy without first contacting a GP. In addition to analysing contacts with professional services without having contacted a GP, it would be interesting to examine whether ER visits without reference to a GP are related to ethnicity. If ER visits also turn out to be lower among minority groups than within the indigenous population, this would support our conclusion concerning the gate keeping function of GPs. It must furthermore be emphasised that the results are only based on figures concerning use of services during the past year and are not referring to the frequency of use. A final limitation that should be mentioned is the lack of cross-cultural validated questionnaires. Although there are some indications that self-reporting provides a valid estimation of ethnic differences in use of health care, caution is needed while interpreting the results (Reijneveld, 2000). In order to restrict bias as much as possible the comprehensibility and acceptability of our questionnaire was tested in a pilot.

In conclusion, the analysis of patterns of utilisation proved to supply useful information about the relationship between ethnicity and use of health care

services in addition to figures concerning single service use only. Support is found for the assumption of Pescosolido that patterns of utilisation need to be considered in order to provide more insight into the nature of ethnic differences in use of care (Kulu-Glasgow et al., 1998). Although our study was performed within the Dutch health care system, characterised by GPs as gatekeeper, taking patterns of use into account will in general be of value. During the past decades in many European countries the number of immigrants significantly increased. Health care services in countries with a strong position for the GP in primary care, like the Netherlands, might differ in accessibility for ethnic minorities from countries with another health care system. Taking patterns of use into account will provide more insight into the way ethnic minorities make use of the local health care system. On the basis of single services only, for instance, no distinction can be made between people who only contact their GP and people who also used additional services. All minority groups were found to contact a GP more frequently than the indigenous population, but figures concerning the utilisation of GP services only revealed that this pattern was least apparent for Antilleans. Though our results indicate that ethnic differences in health care utilisation exist, our study does not provide explanations for these variations between minority groups. The high level of GP consultations combined with a relatively low use of specific combinations of health care services among Moroccans may indicate particular problems of access to health services for this group. Possibly a poor initial consultation necessitates further visits to the GP and complicates the referral process. The disparity in use of health care services among Moroccans and the other minority groups is therefore cause for concern. This reinforces the need to study health care utilisation by minority groups separately.

6

Quality of GP care, perceptions of ethnic minorities

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Uiters E, Sixma HJ, Devillé W, Foets M, Groenewegen PP. Quality of GP care, perceptions of ethnic minorities.

6.1 Introduction

In recent decades the population of patients with a migrant background has substantially increased in the Netherlands. With respect to primary care this means more variation in the way health complaints and diseases are presented, but also different needs and expectations (Harmsen, 2003). Although the actual access to health services such as GPs among ethnic minorities is not found to be problematic, much less is known with respect to the quality of care received (Stronks et al., 2001). Insight into patients' views on good general practice, their needs and wishes is still limited. International research suggests that on average ethnic minorities rate quality of care lower and are more dissatisfied than the indigenous population (Ferguson et al., 2002; Virnig et al., 2002; Baker et al., 1996; Murray-Garcia et al., 2000; Jung et al., 1998). This was found even for equal insurance, income level and severity of disease (Pachter, 1994; Ahmad et al., 1990; Smedley et al., 2002).

An instrument that proved to be a useful measure of user perception of quality of care is the QUOTE (Quality Of care Through the patients Eyes) (Sixma et al, 1998). QUOTE questionnaires evaluate the quality of care in terms of importance and performance. Performance refers to the actual experience with a health care service, whereas importance relates to the fact that patients perceive some features of services to be more significant than others. The value of many quality of care aspects seem largely universal, independent of country, health care system and culture (Grol et al., 1999; Groenewegen et al., 2005). A satisfying doctor-patient communication and accessibility of services are shared priorities across countries. Nevertheless, with respect to other quality aspects different views between countries are found. For instance the extent to which patients value a democratic relationship with their practitioner varies between countries (Grol et al., 1999). This suggests that value judgements are at least partly culture dependent. The aim of our study is to gain insight into similarities and differences in patients' views on quality of GP care within ethnic groups and between general practices. People with the same ethnic background are expected to share a general set of values, resulting in a fairly homogeneous perception of the importance of quality of care aspects. As patients' experiences with each GP might vary, variances between general practices

are expected to be found particularly with respect to the actual performance of GPs. To summarise, the research questions are as follows:

- 1 *'Which aspects do ethnic minorities and the Dutch population view as important in evaluating quality of GP care and what are the actual experiences with these aspects?'*
- 2 *'To what extent do the importance and performance ratings vary between ethnic groups and general practices, taking into account patient and general practice characteristics?'*
- 3 *'What aspects are perceived as most important for quality improvement of GP care by ethnic minority groups and the Dutch population?'*

6.2 Methods

Data collection

Data were collected within the framework of the Second National Survey of General Practice. This survey was carried out in 2001 (Westert et al., 2005), with 195 GPs from 104 practices participating. The socio-demographic characteristics of all listed patients were assessed by means of a census. This census provided information about the country of birth of the patients and their parents. When at least one parent was born abroad, a patient was indicated as having a foreign background (Statistical Yearbook of the Netherlands, 2002). A random sample per practice (12,699 Dutch-speaking people) was interviewed, regardless of ethnic background.

An additional study was executed among a random sample of 1,339 patients from the four largest migrant groups in the Netherlands. These four groups comprise people from Turkey, Surinam, Morocco and the Netherlands Antilles. The content of the interviews among the minority groups and the Dutch-speaking respondents was equal. If necessary, interviews were conducted in the language of the country of origin. No indications for a selective non-response were found concerning age and gender (Uiters et al., 2006; Morbidity, performance and quality in primary care, 2006).

Quality of Care

For all quality aspects a distinction is made between the relative importance and the actual experience (box 6.1). People were asked to rate the relative importance (e.g. my GP should always take me seriously; scores ranging from 1= not important; 2 = fairly important; 3 = important to 4 = extremely important) and the actual performance of GPs on each of the quality aspects (e.g. my GP always takes me seriously; response options 1 = no; 2 = not really; 3 = on the whole, yes; 4 = yes). The correlation between performance and importance indicators was relatively low (Spearman correlations ranged from 0.12 to 0.47), indicating that both indicators measure separate concepts. Performance and importance scores on the different quality of care aspects were used to calculate quality-impact scores (QI) for each ethnic group by multiplying the scores. Quality-impact scores indicate the need for improvement. For this purpose the scores for the performance categories were dichotomised into respondents who did (values 3 and 4 were recoded into value 0) or did not (scores 1 and 2 were recorded into value 1) report a particular quality of care aspect as being performed by their GP. The scores for the importance categories were calculated by linear transformation of the response options to values between 1 and 10. Theoretically, a quality-impact score can vary from 0 to 10, with 0 meaning that 0% of the migrants reported this particular aspect to be absent, indicating the best possible care, and 10 meaning that all respondents think this aspect is extremely important and 100% of the migrants report that it requires improvement. Given that users of health care services are usually highly satisfied, impact scores that refer to values above 1.0 indicate that this particular quality aspect needs (or leaves room for) improvement.

Patient characteristics

Perceived quality of care was analysed by taking into account age, gender, socio-economic position and health status (Sixma et al., 1998; Grol et al., 1999; Williams et al., 1991). Socio-economic position was indicated by type of insurance and educational attainment (none, elementary school, high school and college or university). Health status was measured by the following two indicators: self-rated health, measured by a single-item question 'In general would you describe your health as: 1) excellent, 2) very good, 3) good, 4) poor or 5) very poor' and the number of chronic conditions. The number of chronic conditions was measured by asking participants whether they had

suffered from one or more chronic conditions on a list in the twelve months preceding the interview. Judgements concerning language-related aspects of quality of care among the minority groups were related to proficiency and use of the Dutch language. Use was measured by asking about the frequency with which Dutch is used in contact with the partner; mother; father; siblings; children and friends (always, often, now and then, never). Proficiency in the Dutch language was measured by asking about the extent to which one was able to understand, speak, read and write Dutch (not, a little, sufficiently, well).

Box 6.1 Development of the QUOTE for migrants

The QUOTE concept has been applied to various groups of patients and has shown good validity and reliability. Studies based on the QUOTE have provided practical information for the development of quality-assurance policies. All QUOTE questionnaires include a generic dimension, which is applicable to a range of health care users and a specific dimension consisting of care aspects related to a specific patient group (Groenewegen et al., 2005). With respect to the generic dimension, the QUOTE instrument focuses on two main aspects of quality of care, namely structural aspects (e.g. continuity of care, accessibility and organisation) and process aspects (e.g. information, perceived autonomy, treatment and professional competence) (Sixma et al., 1998). Because no valid and reliable instrument existed in the Netherlands to measure the quality of GP care among ethnic minorities, the generic QUOTE questionnaire which consisted of 22 generic quality aspects was adapted for use among this specific subpopulation (El Fakiri et al., 2000). This QUOTE questionnaire for migrants was developed using qualitative and quantitative methods. To ensure validity, patients were involved in the development from the beginning. First, field experts (3 GPs, 2 researchers and 4 key persons from the migrant groups) were interviewed to prepare focus group interviews among the minority groups. In total 6 focus group interviews were carried out to gather information concerning relevant quality aspects as perceived by minority groups. Representatives of the Turkish, Surinamese, Antillean and Moroccan community participated in these focus groups. With respect to Turks and Moroccans, men and women were interviewed separately. Subsequently the results from these focus group interviews were quantitatively tested among 151 migrants. On the basis of item, inter-item and scale analyses the final QUOTE for migrants was constructed. This final QUOTE for migrants consists of 16 items (9 generic, and 7 migrant-specific) (table 6.1). In our study forward and backward translations were performed for use in the Turkish and Moroccan groups. As Surinam is a former Dutch colony that gained independence in 1975 and the Netherlands Antilles is still part of the Dutch Kingdom, people from these countries are familiar with the Dutch language.

GP practice characteristics

The perceived quality of care characteristics of the general practice, such as practice setting (solo, dual and group) and level of urbanisation (very highly urbanised, highly urbanised, moderately urbanised, slightly urbanised and not urbanised) was applied. GP practices vary in the number of registered patients with an ethnic minority background. It can be argued that more contact with ethnic minorities will influence the intercultural performance of GPs, which in turn could influence the perceived quality of care. Therefore, the percentage of ethnic minorities with a non-western background within the general practice was included as a potential explanation for quality differences at practice level. Moreover, whether or not the general practice was situated in a deprived area was included in the analyses.

Statistical analyses

The analyses reported in this chapter are restricted to respondents aged over 18. The total study population comprised 9,101 persons (7,772 indigenous Dutch, 370 Moroccans, 262 Antilleans, 400 Turks and 297 Surinamese). Factor analyses and reliability analyses were performed to examine if quality of care aspects could be included in the analysis as composite scores. Mean importance and performance scores for each ethnic group were calculated to answer the first research question concerning the evaluation of the quality of GP care (table 6.1). Because patients are hierarchically nested within practices, multilevel analyses were performed, using MLwiN. Accordingly, the variance in perceived quality of care at the individual level and at the general practice level could be examined (table 6.2a and 6.2b). Differences in variances were adjusted for patient and general practice characteristics, which were centred around their mean in order to facilitate interpretation of the data.

6.3 Results

Importance ratings

Differences between the ethnic groups were found for all quality aspects (table 6.1). In general, the minority groups attached higher importance scores to nearly all quality aspects as compared to the Dutch population. With respect to process and structural aspects, Turkish patients judged one

of these most frequently as most important, whereas Moroccans did so least frequently. Concerning the migrant-specific aspects, Antilleans most frequently rated the importance as relatively low. On average, the aspect that received the highest importance rating was “my GP should take me seriously”. Relatively high importance was also attached to: “my GP should: give me as much time and attention as to Dutch patients”; “not have prejudices towards me as a foreigner” and “be accessible by phone”. Aspects concerning leaflets in their own language and involvement of an interpreter were judged least important. However, among minority groups these aspects were valued significantly higher by people with a relatively low proficiency and use of the Dutch language (not shown).

Performance ratings

Performance ratings also varied across the ethnic groups. With respect to the process aspects, Surinamese patients were the most positive about the performance of their GP, indicating that most people in this group felt that the particular aspects were performed as stated. Antilleans experienced the performance of their GP concerning structural aspects more positively than the other groups. The performance ratings concerning migrant-specific aspects showed a diverging picture. Turks and Moroccans evaluated the performance of their GP the least positively. The highest average performance score was found for the aspect “my GP gives me as much time and attention as to Dutch patients”. Other high performance scores were found for all the process factors and for “arrangement of an appointment within 24 hours, if necessary”. The lowest performance rates were found for “involvement of an interpreter” and “own-language leaflets”. Proficiency and use of the Dutch language showed no significant relationship with these aspects. For each composite score, the means and variances at individual and practice level adjusted for patient and practice characteristics were computed per ethnic group (table 6.2a and table 6.2b). Mean scores appeared not to vary systematically across the ethnic groups. Individuals from each group attached varying importance to the quality of care aspects. Especially with respect to the perceived importance of the migrant-specific aspects, groups did not seem homogenous at the individual level. Variance was largest for the Surinamese and Turks. Moreover, relatively large differences were found concerning the total performance score (structural and process together).

Table 6.1 Importance and performance aspects of perceived quality of care across ethnic groups (mean) ¹

Indicator	My GP should...	Importance					Performance				
		M	T	A	S	I	M	T	A	S	I
Process											
Take me seriously		3.35	3.54	3.42	3.52	3.47	3.62	3.43	3.57	3.67	3.57
Inform me, in understandable language, about prescriptions		3.14	3.34	3.30	3.32	3.23	3.32	3.37	3.62	3.76	3.55
Involve me in the decisions regarding the treatment I receive		3.18	3.40	3.16	3.28	3.03	3.51	3.50	3.45	3.66	3.55
Explain in understandable language what is wrong with me		3.15	3.43	3.33	3.44	3.38	3.35	3.31	3.60	3.75	3.66
Structure											
Arrange an appointment within 24 hours, if necessary		3.25	3.42	3.26	3.41	3.18	3.33	3.25	3.36	3.24	3.45
Organise the practice in such a way that I cannot overhear conversations at the reception desk or in the examination room		3.00	3.21	3.19	3.26	3.15	3.37	3.46	3.21	3.54	2.36
Be accessible by phone		3.33	3.50	3.34	3.42	3.24	3.29	3.22	3.30	3.10	3.24
Arrange that I can consult a specialist within 2 weeks after referral		3.19	3.38	3.19	3.24	2.87	3.03	3.11	3.19	3.13	2.98

- table 6.1 continues -

- table 6.1 continued -

Indicator	My GP should...	Importance					Performance				
		M	T	A	S	I	M	T	A	S	I
Migrant-specific											
Give me as much time and attention as Dutch patients		3.32	3.52	3.33	3.44	-	3.69	3.40	3.66	3.75	-
Not have prejudices about my being a foreigner		3.28	3.49	3.30	3.43	-	3.34	3.33	3.55	3.60	-
Understand that I sometimes have difficulty in expressing myself due to language problems		2.98	3.20	2.78	2.71	-	3.36	3.34	3.33	3.26	-
Involve an interpreter should I want this		2.17	2.87	2.15	1.91	-	2.34	2.80	2.40	2.14	-
Have information leaflets in my own language		2.49	2.89	2.10	2.13	-	2.70	2.67	2.27	2.52	-
Recognise that my problems might differ from those of Dutch people		2.64	2.96	2.46	2.65	-	3.02	3.08	2.95	3.01	-
Show interest in my cultural background		2.48	2.84	2.34	2.47	-	2.79	3.14	2.89	3.00	-

¹ M refers to Moroccans, T tot Turks, A tot Antilleans, S tot Surinamese and I tot indigenous population

Individuals with a Turkish background varied more than the other groups in the perceived quality of GP performance. In general, among individuals from all ethnic groups variance in performance scores was larger than in importance scores. At the practice level, variances could be estimated significantly for nearly all importance aspects. So for all groups, the importance of quality of care aspects was dependent on the general practice. The Surinamese and Moroccans varied most in importance scores at the practice level, whereas the Dutch population showed the least variance. With respect to the performance of GPs, variances concerning most aspects could not be estimated significantly for the minority groups in contrast to the Dutch population. As only significantly estimated variances indicate that the performance of GPs is dependent on the general practice, it can be concluded that for the minority groups, particularly the importance of quality of care aspects was dependent on the general practice. In contrast to the results at the individual level, at the practice level the variances in performance scores were generally smaller than the variances in importance scores for all minority groups. For the Dutch population variances in importance scores were smaller than the performance scores.

Quality-Impact factors

As mentioned in the methods section, impact factors well above 1 can be interpreted as a possible need for improvement. Table 6.3 shows that efforts to improve the quality of GP care should especially focus on structural factors, such as arranging a consultation with a specialist within 2 weeks after referral. For the Dutch population quality of care could be improved by preventing conversations from being overheard at the reception desk and in the examination room. Among the minority groups "the arrangement of an appointment within 24 hours" was perceived as insufficient. For Moroccans and Turks improvement of the quality of care could be achieved by attention to process aspects related to language barriers. With regard to the migrant-specific factors, most quality improvement can be expected from the provision of an interpreter and information in their own language. Although other aspects were rated as more important, the low performance rates of these language-related aspects offer a relatively large opportunity for quality improvement. Furthermore, the recognition by GPs that problems might be different among ethnic minority groups and their interest in the patients' cultural background are suggested to be important aspects for quality improvement.

Table 6.2a Mean, variance (se) at individual and general practice level for quality of care indicators by ethnic group*[#]

	Mean					Variance between practices				
	M	T	A	S	I	M	T	A	S	I
Importance										
process	12.92	13.68	13.24	13.24	13.14	1.16-(0.41) ¹	0.69 (0.29) ¹	0.52 (0.28)	1.17 (0.41) ¹	0.09 (0.02) ¹
structural	16.23	16.94	16.51	16.10	15.35	1.86 (0.58) ¹	0.76 (0.36) ¹	1.12 (0.49) ¹	2.25 (0.75) ¹	0.21 (0.04) ¹
migrant-specific	19.29	21.04	18.35	17.79	-	6.02 (1.91) ¹	3.55 (1.58) ¹	5.77 (2.02) ¹	4.00 (2.11)	-
total	29.13	30.66	29.79	29.35	28.50	5.66 (1.71) ¹	2.57 (1.14) ¹	2.70 (1.25) ¹	6.34 (2.05) ¹	0.46 (0.09) ¹
Performance										
process	14.09	14.09	14.46	14.94	14.32	0.08 (0.17)	0.53 (0.34)	0.74 (0.40)	0.49 (0.23) ¹	0.29 (0.05) ¹
structural	16.92	16.91	16.81	16.95	15.60	1.12 (0.58)	0.57 (0.51)	1.66 (0.84)	0.01 (0.25)	0.77 (0.13) ¹
migrant-specific	21.98	22.77	21.15	21.26	-	0.53 (0.78)	3.33 (1.66) ¹	5.35 (2.37) ¹	3.00 (2.03)	-
total	31.03	30.97	31.29	31.85	29.87	3.27 (1.59) ¹	1.62 (1.42)	3.26 (1.80)	1.27 (0.69)	1.55 (0.26) ¹

* M = Moroccans, T = Turks, A = Antilleans, S = Surinamese and I = the Dutch population

[#] adjusted for age, sex, health status, education, insurance type, practice form, level of urbanisation, deprived area, percentage of ethnic minorities within the GP practice

¹ p<0.05 (Wald statistic)

Table 6.2b Mean, variance (se) at individual and general practice level for quality of care indicators by ethnic group*[#]

	Variance between individuals				
	M	T	A	S	I
Importance					
process	3.31 (0.30) ¹	3.45 (0.27) ¹	3.33 (0.34) ¹	2.76 (0.26) ¹	2.89 (0.05) ¹
structural	3.69 (0.34) ¹	5.12 (0.40) ¹	4.56 (0.47) ¹	4.66 (0.44) ¹	4.30 (0.07) ¹
migrant-specific	11.57 (1.08) ¹	18.76 (1.51) ¹	12.62 (1.40) ¹	20.16 (2.15) ¹	-
total	11.17 (1.03) ¹	13.36 (1.06) ¹	11.62 (1.31) ¹	11.80 (1.12) ¹	10.44 (0.17) ¹
Performance					
process	5.49 (0.48) ¹	7.14 (0.56) ¹	4.68 (0.49) ¹	2.45 (0.23) ¹	3.80 (0.06) ¹
structural	6.63 (0.62) ¹	10.20 (0.79) ¹	6.93 (0.74) ¹	9.49 (0.85) ¹	5.93 (0.11) ¹
migrant-specific	18.43 (1.81) ¹	21.96 (1.85) ¹	17.07 (2.13) ¹	21.63 (2.49) ¹	-
total	18.83 (1.58) ¹	27.58 (2.17) ¹	17.60 (1.88) ¹	15.97 (1.50) ¹	13.21 (0.24) ¹

* M = Moroccans, T = Turks, A = Antilleans, S = Surinamese and I = the Dutch population

[#] adjusted for age, sex, health status, education, insurance type, practice form, level of urbanisation, deprived area, percentage of ethnic minorities within the GP practice

¹ p<0.05 (Wald statistic)

Table 6.3 Quality-impact scores across ethnic groups (mean)

Indicator	My GP should...	Quality-impact factor				
		M	T	A	S	I
Process						
	Take me seriously	0.46	1.46	0.86	0.55	0.74
	Inform me, in understandable language, about prescriptions	1.39	1.41	0.65	0.32	0.69
	Involve me in the decisions regarding the treatment I receive	0.70	0.98	0.96	0.50	0.50
	Arrange an appointment within 24 hours, if necessary	1.33	1.81	1.36	1.98	0.95
	Explain in understandable language what is wrong with me	1.26	1.55	0.75	0.31	0.41
Structure						
	Organise the practice in such a way that I cannot overhear conversations at the reception desk or in the examination room	1.12	1.11	1.81	1.16	3.97
	Be accessible by phone	1.56	1.87	1.60	2.44	1.61
	Give clear information about the organisation of the practice	0.77	1.13	0.72	1.04	0.54
	Arrange that I can consult a specialist within 2 weeks after referral	1.98	2.20	1.79	1.98	1.98
Migrant-specific						
	Give me as much time and attention as Dutch patients	0.29	1.51	0.54	0.41	-
	Not have prejudices about my being a foreigner	1.14	1.64	0.94	0.90	-
	Understand that I sometimes have difficulty in expressing myself due to language problems	0.89	1.35	1.10	1.19	-
	Involve an interpreter should I want this	2.49	2.63	2.32	2.36	-
	Have information leaflets in my own language	2.23	3.08	2.54	2.11	-
	Recognise that my problems might differ from those of Dutch people	1.63	1.87	1.62	1.67	-
	Show interest in my cultural background	1.89	1.61	1.84	1.68	-

6.4 Discussion

Overall, the results of our study illustrate several differences between ethnic groups in terms of what patients experience and what they value as important. Consistent with other research, the importance of attitude-related aspects of health care provision is underlined (Grol et al., 1999; Groenewegen et al., 2005; Calnan et al., 1994). Key attributes of good quality of GP care shared by all groups are values concerning respectfulness. The fact that a GP should take the patient seriously was consistently valued as highly important. This is seen as more important than service aspects, such as having own-language leaflets. However, the language-related aspects were valued higher among people with relatively low use and proficiency in the Dutch language.

In line with the importance judgements, the performance of GPs was also rated highly with respect to process aspects, indicating a positive GP performance on these aspects in general. Aspects with relatively low performance ratings were related to language barriers that hinder information exchange. Among the minority groups the quality-impact scores showed that perceived quality of care could benefit from the provision of an interpreter and own-language leaflets. This is line with other research emphasizing the importance of information-giving for quality of care (Jung et al., 1998; Williams et al., 1991). Particularly among Moroccans and Turks, more emphasis on giving information in understandable language about diagnosis and prescriptions could have a positive effect on the perceived quality of care. Before migration, the Surinamese and to a lesser extent Antilleans have relatively easy access to the Dutch language. Therefore it is not surprising that especially among Turks and Moroccans language-related aspects of quality of care emerged. More attention for language-related aspects may even have a reducing effect on the higher consultation rate for these minority groups, as a poor initial consultation possibly necessitates further visits to GPs and complicates the referral process (Stronks et al., 2001; Uiters et al., 2006). Nevertheless, in general no indications are found that the frequently reported higher contact rate with the GP among ethnic minorities as compared to the Dutch population is reflected in a more negative perception of the quality of care (Stronks et al., 2001; Uiters et al., 2006). In addition to language-related aspects, quality improvement should focus on structural factors such as accessibility by phone.

Variance between individuals in perceived quality of care was especially found with respect to performance scores for all ethnic groups. This is in line with our expectations that individuals with different ethnic backgrounds would be more homogenous regarding importance values than concerning the judgement about the actual performance of GPs. However, differences in value judgements between ethnic groups remained at both the practice level and individual level, even after adjustment for patient and practice characteristics. This was especially the case for Surinamese patients, and was in line with previous research, suggesting that value judgements are at least partly culturally dependent (Grol et al., 1999). General practices varied concerning the valued importance among minority groups. As expected, the perception of the actual performance of GPs seemed rather homogeneous within the practice one is registered with. In keeping with research findings in other countries, minority groups did not systematically report less favourable performance of their GP as compared to the Dutch population (Campbell et al., 2001). Given the fact that adjustment for practice characteristics such as the percentage of ethnic minorities on the patient list did not systematically change the results, no indications are found that GPs who are used to managing a multicultural patient group provide a higher standard of care. Variance between general practices among the Dutch population was especially marked with respect to performance scores. This might be explained by a selection process where Dutch patients in particular select GPs who perform according to what they feel is important. The fact that the valued importance at the practice level varied to a larger extent among the minority groups than among the Dutch population supports this possible explanation.

Theoretical descriptions of the evaluation process of quality of care are scarce and inconsistent. Better experience of care among some groups may reflect a better performance of GPs. However, it remains unclear how well the performance scores really match GPs' behaviour during consultation. Better performance scores may alternatively indicate how lower expectations are more easily met (Ogden and Jain, 2000). This explanation is, however, not supported by the positive correlation between importance and performance. Differences between ethnic groups may also reflect cultural differences in willingness to report unfavourable assessment (Campbell et al., 2001). The cross-sectional design makes it impossible to draw conclusions about the mechanism behind the differences reported. More

research is needed to determine whether differences in perceived quality of care reflect variation in the provision of care, greater expectations or differences in reporting behaviour (Jung et al., 1998; Campbell et al., 2001). To what extent ethnic differences in ratings of quality of care put minority groups at risk for inferior care and poorer health status also needs attention (Jung et al., 1998). As providers of 90% of the formal health care, GPs can play an important role in improving quality in health care through reducing unacceptable variation (Campbell et al., 2001).

7

Ethnic minorities and prescription medication: concordance between self-reports and medical records

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7.1 Background

The use of prescriptions is an important aspect of medical consumption in all western countries. Nevertheless, large differences in prescription use exist within countries. Ethnic minority groups are in general found to differ from the Dutch population in the use of prescription medication as well as over the counter medication (OTCs) (Stronks et al., 2001; Espino et al., 1998; Taira et al., 2003; Hull et al., 2001). These differences are often explained by cultural factors, (box 7.1). A complicating factor in the comparison of figures concerning prescription utilisation, however, is the fact that they are often based on different methods of data collection. Data are typically obtained from patient interviews, self-reported surveys, pill counts, medical records or claims databases. Data obtained from these different sources often not correspond. In the literature, this finding is in general perceived as a validity issue. Consequently, validity of the results is examined by comparing one method of data collection with another method (Cleary and Jette, 1984; Kwon et al., 2003). Regarding survey data collected among ethnic minorities this comparison can be complicated by the possibility of culturally determined information bias. Language problems, poorer recall of people and cultural differences (like the perception of time) are suggested to affect the validity of self-reported data from minority groups (Reijneveld, 2000; McGraw et al., 1992; Warnecke et al., 1997). Furthermore, in health care research the design of questionnaires for use among ethnic minority groups often not address important aspects as salience of contents, equivalence of concepts and the use of comprehensible language for the less well educated (Hunt and Bhopal, 2003). Nevertheless, in addition to explaining discordance between several methods of data collection as a (cross-cultural) validity problem, the possibility that different methods of data collection may provide different outcomes received little attention. Self-reported use of prescription, for instance, might measure prescription use accurately but reflect something different than for instance prescription information retrieved from medical records. In other words, the fact that a patient received a prescription from the GP does not necessarily have to correspond with the self-reported use. A lower self-reported use could for instance be related to a lower compliance among minority groups than among the Dutch population.

Box 7.1 Consumption of medication in the Netherlands

Dutch GPs are known for being reluctant to prescribe compared to doctors in other European countries (Kooiker and van der Wijst, 2003). Many patients share this reluctant attitude. They are rather relieved when medication turns out to be unnecessary after a consultation with their doctor. Compared to other European countries the use of medication in the Netherlands is low and OECD-data showed that the Netherlands has one of the lowest expenditures on prescribed medication (Kooiker and van der Wijst, 2003). Nevertheless; the use of medication in the Netherlands has increased substantially over the last decade. In 2001, the year of the second National Survey of General Practice, expenditures on medication sold in public pharmacies, increased by 11% (SFK, 2004).

In the Netherlands general practitioners (GPs) often assume that the expectation to receive a prescription after consultation is higher among ethnic minority groups than among the Dutch (El Fakiri et al., 2000). This picture is reflected in the higher prescription rates for ethnic minorities based on electronic medical records (EMR) than the rates of the Dutch population (Reijneveld, 1998). Research, however, showed that ethnic minorities often do not share this general perception of GPs and feel that they receive a prescription too easily. Moreover, dissatisfaction was expressed by the type of prescription prescribed; ethnic minority groups felt they received too often paracetamol (El Fakiri et al., 2000). These findings could negatively influence the compliance rate among the minority groups (Harmsen, 2003; Beardon et al., 1993; Cecil and Killeen, 1997). In our study we will explore to which extent ethnic differences in EMR data from GPs are concord with ethnic differences regarding self-reported prescription use. Focus will be on the question whether a possible discordance might be related to a different compliance among ethnic minorities. The level of agreement between EMR data and two self-reported measures of prescribed medication will be analysed. First, the agreement between EMR data and self-reported use of prescribed medication will be examined. Furthermore, the agreement between EMR data and self-reported receipt of a prescription will be analysed. If the level of agreement between EMR data and self-reported receipt of a prescription is higher than between EMR data and self-reported use, this would be an indication that ethnic minorities use less medication than is being prescribed. Consequently, this lower compliance would provide, in addition to the (cross-cultural) validity approach, an

alternative explanation for discordance between ethnic differences in self-reports and EMR data concerning prescription use.

7.2 Methods

Data collection

Data collection was performed within the framework of the Second National Survey of General Practice. This survey was carried out in 2001 (Westert et al., 2005). In our study, 195 GPs from 104 practices participated. The total patient population of these practices consisted of 385,461 people. Our study is based on a linkage of data from a survey and from the EMRs of GP practices. These data could be linked by means of a unique anonymous patient and practice identifier. In the participating general practices, 1,794,560 million contacts with patients during one year were recorded in the practice computer. In 57.4% of these contacts medication was prescribed (Cardol et al., 2004). The study was carried out according to Dutch legislation on privacy. The privacy regulation of the study was approved by the Dutch Data Protection Authority. According to Dutch legislation, obtaining informed consent is not obligatory for observational studies. Social-demographic characteristics of all listed patients were assessed by means of a census. This census also provided information about the country of birth of the patients and his or her parents. Information about the country of birth was used to indicate the ethnic background. When at least one parent was born abroad, a patient was indicated as having a foreign background (Statistical Yearbook of the Netherlands, 2002). The questions from the census were sent in four languages (Dutch, Turks, Arabic (Moroccan) and English), accompanied by an inviting letter from their GP. Returning the census included informed consent. Data about self-reported receipt and use of prescriptions were collected through face-to-face interviews. People were interviewed at home. First a random sample per practice, totally 12,699 Dutch-speaking people, was interviewed, regardless of ethnic background. The response rate of this study was 64.5%. Response rate did not vary in an important way for age and sex. Refusal was the most common reason of non-response (66.9%).

An additional study was executed among a random sample of 1,339 patients from the four largest minority groups in the Netherlands, originating from

Turkey, Surinam, Morocco and the Netherlands Antilles. The content of the interviews among the minority groups was similar to the interviews among the Dutch-speaking respondents. To improve the validity and reliability of the questions, much attention was paid to the design of the questionnaire. The questionnaire was independently translated forward-backward for this purpose. As Surinam is a former Dutch colony that gained independence in 1975 and the Netherlands Antilles is still part of the Dutch Kingdom, people from these countries are familiar with the Dutch language. A pilot was performed to test comprehensibility and acceptance of the questionnaire on a comparable sample. Given the fact that bi-lingual people often are found to be biased by age, gender, education, producing translations that are too formal and literary for most people, field testing focussed on bi-linguals as well as mono-linguals (Hunt and Bhopal, 2003; Hendricson et al., 1989). The pilot interviews were observed on a screen by two members of the research team. This way questions needing clarification or causing any kind of an emotional response were notified and necessary adjustments could be applied. Interviewers were bilingual and received instruction training. The interviewers offered the opportunity to choose between an interview in Dutch or in the mother tongue of the respondents depending on the language mastery and preference. The response rate among the minority groups was 49.9%. Non-response rate was equal in the minority groups. Only women and elderly with a Surinam or Antillean background were relatively over represented in the study population. Difficulty to reach respondents (24.9%) and refusal (19.5%) were the major reasons of non-response.

Measurements

EMR data about prescription medication were recorded by GPs. This procedure was part of the normal registration system of GPs. Based on these EMR data the percentage of patients who received a prescription during the past year was computed. This EMR information about prescribed medication was linked to the survey data. In the survey, people were asked whether they had used prescription medication. To reduce the possibility of recall bias, use of prescriptions was asked regarding the preceding 14 days. Because the use of OTC medication can possibly serve as a substitution for prescription medication, information about the use of OTC medication was also collected. Furthermore, people were asked whether a prescription had

been prescribed to them during the preceding 14 days. People from the minority groups were also asked whether they retrieved OTC medication that cannot be bought without a prescription in the Netherlands while they visited their country of origin during the past year. People were asked not to take prescriptions received during a hospital admission and contraceptive prescriptions into account.

Analyses

The analyses reported in this chapter are restricted to people aged at least 18. Respondents were only included if their survey date fell within the registration period of the GP. In total, 6,363 people from the Dutch population, 189 Moroccans, 230 Turks, 89 Antilleans and 141 Surinamese satisfied these inclusion criteria. EMR data regarding contraceptives were excluded from the analyses. An indication of the extent in which ethnic differences in self-reported prescription use are concord with ethnic differences regarding EMR data was retrieved by computing the percentages of self-reported receipt and use of prescriptions and EMR data regarding prescriptions for each ethnic group (table 7.1). Significant differences between the Dutch population and the minority groups were tested using logistic regression analyses (table 7.1). The Dutch population served as the reference group. Subsequently, the level of agreement between self-reports and EMR data was examined more in detail by computing the percentage of agreement and disagreement between self-reports and EMR data (table 7.2). Two aspects could be identified regarding agreement. Agreement was established in case the respondent reported to have received a prescription during the preceding 14 days and the EMR data showed that the GP actually had prescribed a prescription during the 14 days preceding the interview. Agreement was also established when according to the self-reports and EMR data no prescription had been prescribed. Disagreement was established in case the self-reports were not reflected in the EMR data. Respondents were classified as underreporting when based on self-reports no prescription was received, whereas the EMR data showed that the GP had prescribed medication. On the other hand, respondents were defined to over-report when the self-reported receipt of a prescription was not reflected in the EMR data. To account for the level of agreement to be expected by chance, (Cohen's) kappa was computed for each ethnic group.

Table 7.1 EMR data and self-reports concerning prescriptions across the ethnic groups (%)*

	Indigenous	Moroccans	Turks	Antilleans	Surinamese
N	6363	189	230	89	141
Self-reported data					
Receipt of prescribed medication during the past 14 days	15.1	23.8	29.4	24.7	31.9
Use of prescribed medication during the past 14 days	48.2	38.1	39.1	41.6	53.9
Use of OTC medication during the past 14 days	37.4	30.3	26.1	32.6	34.3
Retrieved medication in country of origin	not applicable	3.8	3.4	1.1	-
EMR data					
Prescribed medication during the past year	76.1	85.2	84.3	77.5	81.6

* significant difference with the Dutch population are printed in bold (p<0.05)

7.3 Results

Self-reported data concerning the receipt and use of prescriptions varied across the ethnic groups (table 7.1). Compared to the Dutch population, people with a Surinam background were most likely to report the receipt of a prescription. People were also asked whether they had used prescription medication during the preceding 14 days. Again, Surinamese appeared to be most likely to have used prescription medication, although not significantly different from the Dutch population. Moroccans and Turks answered significantly least frequently to have used a prescription. With respect to the use of OTC medication, Antilleans, Surinamese and Dutch mentioned equally frequent to have used this type of medication. The minority groups were furthermore asked if they had bought medication that cannot be retrieved in the Netherlands without prescription during the last year in their country of origin. Moroccans and Turks confirmed this most frequently. Nevertheless, this only concerned a rather small number of people. None of the people with a Surinam background retrieved medication from their country of origin.

Table 7.2 Comparisons among self-reports and EMR data by ethnic group

	Indigenous	Moroccans	Turks	Antilleans	Surinamese
Self-reported receipt of a prescription vs. EMR prescribed medication					
Percentage agreement					
both yes	4.5	3.7	10.1	5.6	9.9
both no	73.8	70.4	62.7	65.2	59.6
Total agreement	78.3	74.1	72.8	70.8	69.5
Percentage disagreement					
underreporting	11.2	5.8	7.9	10.1	8.5
overreporting	10.6	20.1	19.3	19.1	22.0
Total disagreement	21.8	25.9	27.2	29.2	30.5
Kappa	0.16	0.10	0.26	0.11	0.21
Self-reported use of prescribed medication vs. EMR prescribed medication					
Percentage agreement					
both yes	13.2	6.9	11.7	11.2	15.6
both no	49.3	59.3	54.8	53.9	43.3
Total agreement	62.5	66.2	66.5	65.1	58.9
Percentage disagreement					
underreporting	2.5	2.6	6.1	4.5	2.8
overreporting	35.0	31.2	27.4	30.3	38.3
Total disagreement	37.5	33.8	33.5	34.8	41.1
Kappa	0.23	0.16	0.22	0.21	0.22

In addition to the self-reported information, data based on the GPs' EMR was analysed. According to these EMR data, medication was significantly most frequently prescribed to people with a Moroccan and Turkish background as compared to the Dutch population. These ethnic differences in EMR prescription rates did not completely concord with the ethnic differences based on self-reports. This was especially found among Moroccans. According to EMR data, Moroccans were most likely to have received a prescription, whereas self-reported use of medication was least frequently mentioned. Among the Dutch population the relatively high level

of self-reported use of prescriptions did not concord with the relatively low level of EMR prescriptions as compared to the other groups.

The concordance between self-reports and EMR data was analysed more in detail by computing the level of agreement between the two methods of measurement (table 7.2). With respect to the agreement between the self-reported receipt of a prescription and the EMR data, the highest level of agreement was found for the Dutch population. In 78.3% of the cases, self-reports corresponded with the EMR data. The lowest level of agreement was found for Surinamese (69.5%) and Antilleans (70.8%). Similarly, total disagreement was the highest in these latter two groups. The likelihood of underreporting the receipt of a prescription was the highest among the Dutch population and Antilleans. All minority groups appeared to be more likely to over report the receipt of a prescription as compared to the Dutch population. Nevertheless, kappa varied from 0.10 among Moroccans to 0.26 among Turks. These relatively low kappa scores indicate that the agreement corrected for chance is generally low.

Similarly as computing the level of agreement between self-reported receipt of a prescription and EMR data, the level of agreement between self-reported use of a prescription and EMR data was examined. In contrast with the foregoing, the level of agreement was found to be the highest in the minority groups, except Surinamese. For Surinamese the level of agreement appeared to be lowest for both self-reported measures. This disagreement could mostly be attributed to the over reporting of receipt or use of a prescription within the Surinamese group. For all groups the level of agreement between self-reported prescription use and EMR data was lower than the level of agreement between self-reported reception of prescription and EMR data. However, taken into account the degree of agreement by chance, kappa scores were a little higher than the kappa scores between self-reported receipt of a prescription and EMR prescribed medication. Nevertheless, kappa scores were again relatively low, ranging from 0.16 among Moroccans to 0.23 among the Dutch population.

7.4 Discussion

The results of this study show differences in prescription receipt and use among ethnic groups, regardless of the measure used. The pattern of these

ethnic differences depended on whether self-reported data or EMR data were used. Ethnic differences based on self-reports were not consistently reflected in EMR data. Based on self-reported data, the minority groups were most likely to have received a prescription, whereas the self-reported use of prescriptions was relatively high in the Dutch and Surinamese population. The relatively high EMR prescription rate among minority groups was, especially for Turks and Moroccans, not reflected in a relatively high self-reported use of prescriptions. This suggests that although these two groups received relatively more prescriptions than the other groups from their GP, they seem to use least. OTC medication is not likely to substitute prescription medication, because among Moroccans and Turks this type of medication is less often used than in the other groups. The effect of medication retrieved from the country of origin is also presumably negligible, because this applies to only a rather small number of Moroccans and Turks.

The interpretation of the results is complicated by the fact that, taken into account the degree of agreement expected by chance, little agreement between EMR data and self-reported data was found. Conclusions concerning the adequacy of self-reported data about prescription medication in relation to EMR data cannot be drawn. The relatively low level of agreement after adjustment for chance could be attributed to actual differences between prescribing by GPs and the actual receipt and use of medication by patients but also to a low validity of self-reported data. However, the level of agreement did not differ systematically between the ethnic groups, implying that the validity of self-reported data concerning use and receipt of prescriptions does not differ among the ethnic groups. This suggests that the discordance between self-reports and EMR data among ethnic groups cannot be totally attributed to cross-cultural validity related explanations, like a cultural propensity to answer in a particular way. Given the comparable level of agreement between the ethnic groups, it might therefore be possible that the discordance between both methods of data collection reflect an actual difference in the receipt and use of prescriptions. In other words, compliance might be lower among the ethnic groups than the Dutch population. Little research in this field has yet been performed. One study among men comparing self-reported use and registration data from a local insurance company over a 3 months period concluded in contrast to our findings that concordance was generally fair

(kappa 0.60 among Dutch born and 0.54 among foreign-born) [20]. Future research will need to address this issue more in detail, unravelling possible mechanism explaining the level of agreement between self-reported data and EMR data.

Some disagreement between self-report data and EMR data is to be expected. Because immediate use is not always necessary after receiving a prescription, self-reported use of prescription medication and EMR data will not totally agree. Furthermore, some disagreement might be related to the fact that medication can be used without being prescribed recently. Therefore, even in case of a perfect self-report of use, concordance between EMR data and self-reports will not be perfect. Moreover, some limitations of our study might also negatively have influenced our comparison of EMR data and self-reports between ethnic groups. First, it was not possible to make a distinction in the self-reported data between medication prescribed by the GP or by a medical specialist. Repeat prescriptions from the medical specialist will usually be registered in the EMR from the GP, but not the first prescriptions received from the medical specialist. This could have resulted in some overestimating based on self-reports compared to the EMR data from the GP. Furthermore, registration in the EMR by the GPs might be incomplete, yielding a lower level of agreement. Nevertheless, analyses in a sub sample of practices satisfying important quality indicators for registration appeared not to result in systematically different findings.

7.5 Conclusions

In conclusion, it remains unclear which underlying mechanism can explain the differences between the ethnic groups in EMR data and self-reported data. In general, above chance little agreement was found between EMR data and self-reported data. To enhance adequate prescribing and use of medication, future research should focus on explanations for these findings. The cross-cultural validity approach does not seem to be able to fully explain ethnic differences between self-report data and EMR data regarding prescription use. It could be that, at least for Moroccans and Turks, compliance with the prescribed medication by the GP is not optimal. It would be interesting to study to which extent the differences between ethnic groups are related to the level of acculturation. Does for instance the level of

agreement improves as the level of acculturation increases? Nevertheless, evidence for a lower compliance among minority groups requires more attention for compliance enhancing methods and for the efficiency of the prescribing patterns of GPs. Consults that ended without mutual agreement more often resulted in non-compliance with prescribed therapy among patients with an ethnic-minority background (Bhopal et al., 1998). Mutual agreement requires a clarification of the patients expectations concerning prescriptions. The finding that ethnic minorities in the Netherlands felt that they received a prescription too easily and were dissatisfied with the type of medication prescribed is an indication that this mutual understanding between GP and patients with a minority background can be improved.

8 Health care utilisation and acculturation

This chapter has been submitted as:

Uiters E, Foets M, Devillé W, Spreeuwenberg P, Groenewegen PP. Acculturation and the use of health care services

8.1 Introduction

In recent decades, the Netherlands has increasingly become a multicultural society. Approximately 10% of the population consists of individuals with a migrant background (NBS, 2003). The four largest migrant groups comprise people from Turkey, Surinam, Morocco and the Netherlands Antilles. Each of these groups has a different historical background with the Netherlands. Surinam is a former Dutch colony that gained independence in 1975. Most people from Surinam migrated to the Netherlands during the period of decolonisation. The Netherlands Antilles is still part of the Dutch kingdom. Employment and study facilities are important reasons for Antilleans to migrate to the Netherlands. People from Turkey and Morocco have come to the Netherlands as labour migrants since the sixties and early seventies. A number of research studies have found that these minority groups differ from the indigenous population in health care utilisation (Deville et al., in press; Reijneveld, 1998; Stronks et al., 2001). These differences strongly depend on the type of health care service and vary considerably between the four minority groups. It was found that Surinamese, Antilleans and Turks contact general practitioners (GPs) and medical specialists more frequently than the indigenous population, whereas Moroccans were least likely to use prescription drugs (Uiters et al., 2005). These ethnic differences in health care utilisation can only partly be attributed to differences in age, sex, social economic position or perceived health (Dijkshoorn et al., 2000; Reijneveld, 1998; Stronks et al., 2001; Weide and Foets, 1997). The remaining unexplained variance is usually ascribed to cultural differences.

Cultural characteristics and the way these characteristics change over years of residence in a new country are assumed to be key determinants of the ethnic discrepancies observed in service use (Arcia et al., 2001; Chesney et al., 1982; Kirkman-Liff and Mondragon, 1991; Shetterly et al., 1996; Wells et al., 1987). However, the relationship between culture and health care utilisation has been relatively seldom the subject of research. Often only the patient's ethnic background is included, assuming cultural homogeneity within each group (Bhopal and Donaldson, 1998). When cultural factors are included in health care research, the focus is usually on acculturation. Acculturation refers to the process by which a group becomes socialised into a new culture by adopting its language, values and behaviour (Bhopal and Donaldson, 1998; Chesney et al., 1982). It is increasingly accepted that

acculturation is not a linear process, with individuals ranging from unacculturated to assimilated, but rather a multidimensional process that includes one's orientation to both one's own ethnic culture and the host society. Thus, individuals may participate to varying degrees in their ethnic culture as well as that of the larger society and may be bicultural (Dagevos et al, 2003; Phinney, 1996).

Measuring acculturation is subject to controversy. The main point of criticism is that the models of acculturation are implicit and poorly specified (Foets and Denktas, 2005). The content validity of acculturation measures is seldom assessed (Arcia et al., 2001; Hunt et al., 2004). Acculturation is often measured indirectly by single indicators such as generational status, number of years of residence in the new country, age at immigration and language. Measured by these single indicators, the average level of service use across a wide range of services is seen to drop as acculturation decreases (Honig-Parnass, 1982). Furthermore, with an increasing level of acculturation the delay before seeking a consultation for a health problem shortens and the prognosis improves (Van der Stuyft et al., 1989). Increasing language facility is expected to reduce barriers to care. When language is included as a single measure of acculturation, however, cultural values will not be captured (Foets and Denktas, 2005). This inability to capture the complex concept of acculturation is an increasingly recognised problematic aspect of the use of single indicators (Becerra et al., 1991; Scribner and Dwyer, 1989). Obviously, these indicators cannot fully assess behaviour and values. Moreover, most single indicators of acculturation overlap with indicators of social and economic status, as the least acculturated ethnic minorities are found to be more likely to be economically disadvantaged (Stein et al., 1991). Only recently has research attempted to assess the independent effects of acculturation and socio-economic status. To overcome the disadvantages of single indicators, composite instruments were developed. These composite instruments include multiple indicators for acculturation such as language, behaviour, social interaction and participation, in an attempt to meet the current understanding that acculturation is a process with substantial variability (Chesney et al., 1982; Prislin et al., 1998; Wells et al., 1989). Single indicators of acculturation are replaced by process factors like the cultural orientation of daily life interactions, food practices and interaction with friends. Most of these composite instruments have been developed in the United States, Canada and Australia, mainly for usage within specific

minority groups. This complicates the study of the relationship between acculturation and health care utilisation for different groups. Moreover, although composite instruments include multiple indicators for acculturation, most of these instruments do not reflect a consensus in the conceptualisation and measurement of acculturation. As yet, little attention is being paid to the more fundamental level of values and norms (Foets and Denktas, 2005). In keeping with these difficulties, the processes underlying the relationship between culture and health care utilisation are still poorly understood (Prislin et al., 1998).

In general, cultural factors are expected to affect health care utilisation rather indirectly through health related attitudes and beliefs learned in the process of acculturation. Acculturation is assumed to influence changes in utilisation of health care. These changes may become manifest a short period after migration, but can also occur in subsequent generations. Acculturation processes are therefore clearly not solely restricted to people who actually migrated themselves (Stronks, 1998). Empirical tests of these assumptions are scarce. Possible mechanisms that are assumed to operate include imperfect proficiency in the language of the host country and unfamiliarity with the health care system that may lead to a less adequate utilisation of health care services among ethnic minorities. Furthermore, the way health problems are perceived is culturally determined and may influence the decision to use health care. Insight into the relationship between culture and health care utilisation is complicated by the fact that minority groups are not homogeneous in their use of health care services. This is sometimes explained by the possibility that acculturation may have specific features for specific subgroups (Stronks, 1998).

In our study we will try to clarify the relationship between acculturation and utilisation of health care by analysing important cultural aspects that could either promote or hinder the use of care in the Netherlands. In addition to single indicators like the years of residence, attention will be paid to a set of indicators of acculturation including cultural values and norms. Accordingly, the multi-dimensional character of acculturation will be incorporated. Given the fact that our study is cross-sectional, clearly the process characteristics of acculturation cannot be assessed. In this chapter the term acculturation refers to the cultural distance at a given moment in time, which represents a phase in the underlying process of acculturation. Because

previous research in the Netherlands has shown that ethnic differences in health care use are considerable for contact with GPs, medical specialists and use of prescription drugs, the relationship between cultural factors and these three types of health care will be studied (Stronks et al., 2001; Ueters et al., 2005). Due to the differences in cultural, social, economic and educational characteristics between minority groups and the effects that these differences may have on health care use, the implicit assumption that the relationship between the indicators of acculturation and health care use is comparable across the minority groups will be tested. In addition, a comparison in health care use between the indigenous population and the ethnic minorities groups will be made. As mentioned earlier, ethnic minority groups are frequently found to differ in health care use from the indigenous population even after controlling for socio-demographic variables such as age, sex and education. These remaining ethnic differences are frequently ascribed to acculturation but not quantitatively examined. Therefore, this explanation will be investigated in our analyses. Because ethnic background in itself cannot explain differences in health care use, the question is whether acculturation is the underlying concept accounting for these differences. The expectation is that the health care use of ethnic minorities will become more equal to the indigenous population as they become more acculturated. The main research questions in this chapter are as follows:

- 1 *'To what extent do ethnic minority groups in the Netherlands vary with respect to acculturation?'*
- 2 *'To what extent can ethnic differences in health care utilisation be explained by differences in acculturation in addition to socio-demographic variables and health status?'*

8.2 Methods

Population

The data were derived from the Second National Survey of General Practice, carried out in 2001 (Westert et al., 2005). A representative sample of 104 GP practices participated in this Survey. The total population of these practices consisted of approximately 385,500 people. The socio-demographic characteristics of all registered patients were assessed by means of a census.

The country of birth of the person and their parents indicated ethnic background. When at least one parent was born abroad, the person was recorded as having a foreign background (NBS, 2002). Data on health and health service utilisation were collected through face-to-face interviews. A random sample of 1,339 people from the four largest minority groups in the Netherlands was conducted. These four groups comprised people from Turkey, Surinam, Morocco and the Netherlands Antilles, who together represent about 9% of the population of the Netherlands. If necessary, people were interviewed in their own language. The response rate in all the minority groups was approximately 49%. Non-response analyses showed no indications for a selective non-response concerning age and gender. The most important reasons for non-response were difficulties in reaching the sampled persons (24.9%) and refusal (19.5%).

Measurements

As mentioned before, there are no widely accepted acculturation scales for ethnic minority groups in the Netherlands. Research concerning acculturation has been rather fragmentary (Dagevos, 2001; Hagendoorn et al., 2003; Veenman and Vollebergh, 2003; Harmsen, 2003). In our study, acculturation will be measured by means of a wide array of indicators often applied in health care research. The main indicators used in other research are informal social contacts with the indigenous population, use and proficiency of the language of the host country and perceived ethnic identity (Arcia et al., 2001; Marks et al., 1987; Prislin et al., 1998; Van der Stuyft et al., 1989; Wells et al., 1989). In our study these indicators were assessed by means of the questions shown in table 8.1 (see Appendix 8.1).

Other variables that have been found to be important indicators of acculturation are length of residence in the host country and generational status. These variables are frequently used as proxies for acculturation on the assumption that they reflect the location of early socialisation (Becerra et al., 1991; Leclerc et al., 1994; Marks et al., 1987; Scribner and Dwyer, 1989). Length of residence was estimated by subtracting the years spent in the country of origin after migration to the Netherlands from the years following the actual migration (see Appendix 8.1 – table 8.1) (Honig-Parnass, 1982). Generational status was dichotomised into the first generation and the second generation, with respondents who were born in the Netherlands or migrated before their 6th birthday categorised as second generation ethnic

minorities (Dagevos et al., 2003). An attempt to measure acculturation more fundamentally was performed by asking the respondents about their normative orientation (Dagevos et al., 2003). Normative orientation was operationalised by linking it to the process of modernisation. The term modernisation refers to the process, often perceived as typical for the Western world, of transition from an agricultural society into an industrial or post-industrial society. It is a process of increasing social differentiation where science and technology are a driving force. The development of a specific pattern of values, norms and attitudes is closely connected with this transition. The process of modernisation usually refers to development towards a rational-bureaucratic, urban, secularised and individualised democratic state. This process is often seen as a fundamental development in western societies (Ester et al., 1993). As the normative orientation of an individual from an ethnic minority shifts in a more 'modern' direction, the cultural gap with the indigenous population is expected to be smaller. The questionnaire in our study contained 23 propositions about the following three aspects of modernisation: autonomy of the children, emancipation, secularisation. In addition, people were asked their opinion about some general propositions. With respect to emancipation and individualisation additional questions were asked (see Appendix 8.1 – table 8.1).

In addition to indicators of acculturation, other variables that have been found to be related to health care utilisation were included in the analyses: health status, age, gender and socio-economic position. Health status was measured by the following two indicators: self-rated health, measured by a single-item question 'In general would you describe your health as: 1) excellent, 2) very good, 3) good, 4) poor or 5) very poor' (Gandek et al., 1998) and the number of chronic conditions. The number of chronic conditions was estimated by asking participants whether they had suffered from one or more chronic conditions in the twelve months preceding the interview. We made use of a checklist of chronic conditions from the health interview studies conducted by the Statistics Netherlands (Van den Berg and Van der Wulp, 2003). Both indicators of health status were dichotomised for the analyses due to a skewed distribution (table 8.2). Socio-economic position was indicated by type of insurance (public or private) and educational attainment (none, elementary school, high school and college or university). Adjustment for educational attainment was achieved by introducing two dummies. The highest level (college or university) served as the reference

category towards the lowest (none, elementary school) and middle level (high school). Contact with the GP was measured by asking if the GP was contacted during the past two months. Use of specialist care was assessed by asking respondents if they had contact with a medical specialist during the past year. Finally, use of prescription medication was assessed by asking whether a prescription drug had been used during the previous 14 days.

Analyse

Factor analysis and reliability analysis were performed to examine whether the items aiming to measure normative orientation could be included in the analysis as a composite score. For the construction of this composite score, only questions with enough variation were included ($\leq 90\%$ of the respondents gave the same answer). When questions were highly correlated (Spearman's correlation > 0.90) and similar in content, one question was chosen and the other deleted. Factor analysis showed that the items about normative orientation represented one dimension. Subsequently, the reliability of the composite score was tested by computing Cronbach's alpha, excluding items that contributed negatively to this alpha. With respect to normative orientation, in total 21 out of 31 items did meet the criteria and were included in the composite score (Cronbach's alpha = 0.84). In addition, factor analysis was applied to examine the existence of an overall acculturation scale based on normative orientation, ties with the country of origin, informal social contacts, ethnic identification, language proficiency and use. The results from this factor analysis justified the computation of an overall acculturation scale. In this computation every indicator received the same weight.

Frequency analyses were applied to examine the variance in acculturation indicators across the minority groups (table 8.3). Subsequently, logistic regression analyses were performed, addressing the extent to which ethnic differences in health care use can be explained by differences in acculturation (table 8.4). The minority groups were included in these analyses as dummy variables, while the indigenous population served as the reference group. These analyses provide more insight into the importance of acculturation in explaining ethnic differences in health care use. The focus will be on the question whether acculturation might be the underlying explanation for the relationship between ethnic background and health care

use. In other words, is ethnic background in itself still relevant after adjusting for acculturation? Socio-demographic variables, health status and acculturation variables were centred around their mean to facilitate the interpretation of the B's. With respect to all the acculturation variables, the indigenous population received a 0-score. Accordingly, the effect of acculturation is only estimated for the minority groups. The underlying assumption in this model is that the effect of acculturation is homogeneous among all four minority groups. The B's of the acculturation variables can be interpreted as an indication of the relative importance of these variables in explaining ethnic differences in health care use in comparison with an average indigenous population.

Missing values were excluded from the analyses. The overall acculturation scale was included as a continuous variable. Because length of residence among second generation individuals is strongly related to age, length of residence was not included in the analyses presented in table 8.4. For respondents belonging to the first generation, the effect of years of residence is analysed separately. To analyse the relative importance of acculturation in greater detail, in the last step of these analyses the main acculturation effects were replaced by acculturation terms for each ethnic group separately. This way the effect of acculturation is estimated for each minority group separately, testing the assumption that the effect of acculturation is homogeneous in all minority groups. Because the respondents were approached through GP practices, the structure of the data is hierarchical. To account for this a hierarchical structure multilevel analysis was carried out, using MLwiN (Goldstein, 2003).

8.3 Results

Background characteristics varied between the ethnic groups (table 8.2). All four minority groups were younger, reported poorer health, and were more likely to have public health insurance than the indigenous population. The number of chronic conditions, gender distribution and educational attainment showed a less consistent picture.

Table 8.2 Distribution of age, sex, health status, socio-economic position, level of urbanisation and health care use across the ethnic groups

	Moroccans	Turks	Antilleans	Surinamese	Indigenous
N	373	405	263	298	7591
Age (mean)	36.0	36.2	39.4	44.3	49.8
Sex (%)					
men	47.7	47.7	36.9	27.9	44.9
Perceived health (%)					
(very) poor	36.6	35.8	32.3	31.3	17.5
Number of chronic conditions (%)					
≥1	56.0	61.0	58.8	67.4	65.8
Insurance type (%)					
public	93.8	94.3	83.0	84.1	67.1
Education (%)					
none/elementary	48.3	45.9	16.9	24.8	17.7
high school	41.6	46.4	67.9	57.0	60.5
college/university	10.1	7.7	15.3	18.2	21.8
Contact with GP past 2 months (%)	47.0	52.0	49.9	53.9	41.8
Contact with medical specialist past year (%)	44.8	59.1	61.2	57.0	41.1
Use of prescription medication past 14 days (%)	34.6	38.3	39.1	51.6	47.2

Table 8.3 shows the extent to which the four minority groups in the Netherlands vary with respect to indicators of acculturation. On average, Surinamese individuals lived more years in the Netherlands than the other three groups (mean 24.7 years). The other three groups migrated approximately 19 years ago to the Netherlands. The overwhelming majority of respondents belonged to the first generation. In all groups the generational status of about 25% of the respondents was defined as second generation.

The use and proficiency of the Dutch language was highest among the Surinamese and Antilleans. The same pattern was found with respect to normative orientation and social contacts with the indigenous population. Moreover, more Surinamese and Antilleans claimed to identify themselves with Dutch society than Moroccans and Turks. Self-identification among Turks and Moroccans was more strongly directed at the country of origin and, correspondingly, the ties with the country of origin were stronger in these two groups. For each respondent a composite acculturation score was computed. The low and medium level acculturated groups consisted of relatively more Moroccans and Turks than the highly acculturated group. More Surinamese and Antilleans belonged to the highly acculturated group.

Table 8.3 Acculturation characteristics across the ethnic groups

	Moroccans	Turks	Antilleans	Surinamese
Years of residence (mean)	19.2	19.9	18.6	24.7
Generational status (%)				
first generation	76.3	71.6	75.2	77.0
second generation	23.7	28.4	24.8	23.0
Overall acculturation scale (0-24)				
low (% 1 st Quartile)	37.2	42.8	4.2	2.4
intermediate (% 2 rd and 3 rd Quartile)	54.5	48.1	53.4	44.4
high (% 4 th Quartile)	8.3	9.1	42.4	53.2
Language use (mean, range 0-3)	0.9	0.8	1.6	2.2
Language proficiency (mean, range 0-3)	2.0	1.9	2.8	2.9
Ethnic identification (%)				
mainly Dutch	6.0	5.7	30.3	20.8
both countries	29.2	29.6	46.1	48.8
mainly country of origin	64.9	64.7	23.6	30.4
Informal social contacts (mean, range 0-4)	1.8	1.8	2.5	2.3
Ties with country of origin (mean, range 0-4)	2.6	2.9	2.1	1.9
Normative orientation (mean, range 0-4)	1.6	1.7	2.3	2.3

Table 8.4 gives an indication of the contribution of acculturation in the explanation of ethnic differences in health care use after controlling for socio-demographic variables and health status.

Table 8.4 GP care, specialist care, prescription use by indicators of acculturation and socio-demographic variables (B, se)*

	GP care past 2 months	Specialist care last year	Prescription use last 14 days
Model 1			
Intercept	-0.33 (0.03) ¹	-0.35 (0.03) ¹	-0.08 (0.03) ¹
Ethnicity			
Moroccans	0.25 (0.13)	0.17 (0.14)	-0.52 (0.14) ¹
Turks	0.61 (0.14) ¹	0.80 (0.14) ¹	-0.25 (0.14)
Antilleans	0.49 (0.16) ¹	0.93 (0.17) ¹	-0.24 (0.16)
Surinamese	0.56 (0.15) ¹	0.78 (0.16) ¹	0.15 (0.16)
Model 2			
Intercept	-0.34 (0.03) ¹	-0.39 (0.03) ¹	-0.12 (0.03) ¹
Ethnicity			
Moroccans	0.22 (0.14)	0.22 (0.15)	-0.47 (0.17) ¹
Turks	0.57 (0.15) ¹	0.93 (0.15) ¹	-0.15 (0.17)
Antilleans	0.44 (0.17) ¹	1.06 (0.18) ¹	-0.16 (0.20)
Surinamese	0.42 (0.16) ¹	0.74 (0.16) ¹	0.09 (0.18)
Patient related			
age	0.01 (0.00) ¹	0.02 (0.00) ¹	0.04 (0.00) ¹
male gender	-0.32 (0.05) ¹	-0.09 (0.05)	-0.13 (0.05) ¹
≥ 1 chronic condition	0.73 (0.05) ¹	0.80 (0.05) ¹	1.36 (0.06) ¹
good perceived health	-0.79 (0.06) ¹	-0.97 (0.06) ¹	-1.32 (0.07) ¹
public insurance	0.03 (0.05)	0.01 (0.06)	0.15 (0.06) ¹
education			
middle vs. high	0.08 (0.06)	-0.10 (0.06)	0.04 (0.07)
low vs. high	0.09 (0.08)	-0.13 (0.08)	0.19 (0.09) ¹
Model 3			
Intercept	-0.34 (0.03) ¹	-0.39 (0.03) ¹	-0.13 (0.03) ¹
Ethnicity			
Moroccans	0.28 (0.15)	0.24 (0.16)	-0.45 (0.18) ¹
Turks	0.65 (0.16) ¹	0.93 (0.16) ¹	-0.15 (0.18)
Antilleans	0.35 (0.18)	1.06 (0.19) ¹	-0.16 (0.21)
Surinamese	0.33 (0.18)	0.71 (0.18) ¹	0.07 (0.20)

- table 8.4 continues -

- table 8.4 continued -

	GP care past 2 months	Specialist care last year	Prescription use last 14 days
Patient-related			
age	0.01 (0.00) ¹	0.02 (0.00) ¹	0.04 (0.00) ¹
male gender	-0.33 (0.05) ¹	-0.09 (0.05)	-0.13 (0.05) ¹
≥1 chronic condition	0.73 (0.05) ¹	0.81 (0.05) ¹	1.36 (0.06) ¹
good perceived health	-0.79 (0.06) ¹	-0.97 (0.06) ¹	-1.32 (0.08) ¹
public insurance	0.03 (0.05)	0.01 (0.06)	0.15 (0.06) ¹
education			
middle vs. high	0.08 (0.06)	-0.10 (0.06)	0.04 (0.07)
low vs. high	0.09 (0.08)	-0.12 (0.09)	0.20 (0.09) ¹
acculturation			
first generation	-0.56 (0.24) ¹	0.57 (0.24) ¹	0.31 (0.27)
acculturation scale	0.03 (0.02)	0.01 (0.02)	0.01 (0.03)
Model 4			
Intercept	-0.34 (0.03) ¹	-0.39 (0.03) ¹	-0.13 (0.03) ¹
Ethnicity			
Moroccans	0.30 (0.17)	0.33 (0.18)	-0.50 (0.20) ¹
Turks	0.61 (0.17) ¹	1.00 (0.18) ¹	-0.19 (0.20)
Antilleans	0.34 (0.22)	1.25 (0.23) ¹	-0.33 (0.26)
Surinamese	0.35 (0.24)	0.89 (0.25) ¹	0.09 (0.27)
Patient-related			
age	0.01 (0.00) ¹	0.02 (0.00) ¹	0.04 (0.00) ¹
male gender	-0.33 (0.05) ¹	-0.09 (0.05)	-0.13 (0.05) ¹
≥1 chronic condition	0.73 (0.05) ¹	0.81 (0.05) ¹	1.36 (0.06) ¹
good perceived health	-0.79 (0.06) ¹	-0.97 (0.06) ¹	-1.32 (0.08) ¹
public insurance	0.03 (0.05)	0.01 (0.06)	0.15 (0.06) ¹
education			
middle vs. high	0.08 (0.06)	-0.10 (0.06)	0.04 (0.07)
low vs. high	0.09 (0.08)	-0.11 (0.09)	0.20 (0.09) ¹
acculturation			
first generation	-0.01 (0.45)	0.86 (0.45)	0.93 (0.53)
Moroccans			
first generation	-0.50 (0.41)	0.23 (0.42)	0.22 (0.47)
first generation Turks	-0.62 (0.60)	0.24 (0.58)	0.64 (0.67)
first generation Antilleans	-1.35 (0.53) ¹	0.70 (0.49)	-0.27 (0.55)
first generation Surinamese			
Moroccans acculturation scale	0.04 (0.04)	0.05 (0.04)	-0.02 (0.05)
Turks acculturation scale	0.01 (0.04)	0.04 (0.04)	-0.01 (0.04)
Antilleans acculturation scale	0.03 (0.05)	-0.07 (0.05)	0.07 (0.06)
Surinamese acculturation scale	0.02 (0.05)	-0.04 (0.05)	0.00 (0.05)

¹ p<0.05

* the indigenous population is the reference group (continued)

GP Care

With respect to GP care, the minority groups contacted GPs significantly more often than the indigenous population, except for Moroccans (model 1). This difference in use of GP care decreased after the inclusion of socio-demographic and health status variables, but remained significant (model 2). The subsequent inclusion of the overall acculturation variables in the model resulted in a diverging picture (model 3). The higher contact rates with GPs among Surinamese and Antilleans were no longer significant. However, the difference in use of GP care between Turks and the indigenous population was still significant. The effect of generational status was significant; people from the first generation were more likely to contact the GP than people belonging to the second generation (because the variables were centred around their mean, a minus sign refers to the first generation, whereas a positive sign refers to the second generation). The B-value of the intercept can be interpreted as the average score with respect to use of GP care for the indigenous population (-0.34). The average score for Turks is 0.65 higher than the score among the indigenous population and can be computed by counting up the intercept score and the score for Turks ($-0.34 + 0.65$). In model 3 the effect of generational status is assumed to be homogeneous for each minority group and is estimated as -0.56. As mentioned earlier because the indigenous population received 0-codes, the acculturation effect is not estimated for this group. In order to examine whether the effect of acculturation is homogeneous among the minority groups, a combination variable with the acculturation variables was subsequently computed for each group separately (model 4). Analysis showed that with respect to GP care the effect of generational status varied among the minority groups and was significant among the Surinamese. First generation Surinamese contacted the GP more often than the second generation. This means the effect of generational status in model 8.3 is underestimated for the Surinamese group and is overestimated for the other minority groups (B changes from -0.56 to -1.35).

Medical specialist

Contact with the medical specialist was found to be significantly higher in the ethnic minority groups, except for Moroccans (model 1). Adjustment for differences in socio-demographic and health status did not change this pattern (model 2). After the inclusion of acculturation variables, ethnic

differences in contact rate with medical specialists remained similar (model 3). People from the second generation appeared to contact medical specialists significantly more often than the first generation. In line with the use of GP care, Moroccans showed a different pattern than the other three minority groups. No significant difference in contact rate with medical specialists was found for this group. The inclusion of socio-demographic, health status and acculturation variables did not change this picture. Analyses estimating the effect of acculturation for each group separately did not show significant results.

Prescription medication

With respect to the use of prescription medication, only Moroccans differed from the indigenous population, using significantly fewer prescriptions than the indigenous population (model 1). The inclusion of socio-demographic, health status and acculturation variables scarcely affected the difference with the indigenous population (model 2). None of the overall acculturation variables showed a significant relationship with the use of prescription drugs (model 3 and 4).

With respect to all three types of services, no significant result was found in the analyses among the first generation only that examined the importance of years of residence (not shown).

8.4 Discussion

The purpose of this study was to examine to what extent ethnic differences in health care utilisation can be explained by differences in acculturation. The basic hypothesis driving our analysis is the expectation that health care use becomes more similar to the indigenous population as minority groups become more acculturated. Our study aimed to include acculturation in a very broad sense. Typically used indicators of acculturation like language use and proficiency, social contacts, ethnic identity and length of residence were included. In addition, the acquisition of cultural values and norms was measured. The study population consisted of a nationally representative sample of the four largest minority groups currently residing in the Netherlands. This way it was possible to study whether acculturation has specific features for different minority groups. The results showed that the

minority groups were not homogeneous with respect to acculturation. As could be anticipated based on their historic background with the Netherlands, Surinamese and Antilleans were in general relatively comparable with respect to acculturation. The same accounts for Moroccans and Turks. Before migration, Surinamese and Antilleans have relatively easy access to the Dutch language and values and norms. This way it is not surprising that their level of acculturation is found to be closer to Dutch society than Moroccan and Turkish migrants.

With respect to the relationship between acculturation and the utilisation of health care services, the results showed that this relationship is not one-dimensional. Differences in health care utilisation between the minority groups and the indigenous population depended on the ethnic group and the type of health care service. In general, the differences in use of health care services between minority groups and the indigenous population decreased after we took socio-demographic characteristics and health status into account. The expectation was that as people are longer in the Netherlands, belong to the second generation and their level of acculturation becomes closer to the indigenous population, differences in health care use between minority groups and the indigenous population would diminish. This expectation was not supported. Especially with respect to GP-care, acculturation did not have the same effect in each minority group. Surinamese from the first generation contacted GPs more often than the indigenous population, whereas this relationship was not found for the other minority groups. In general, the opposite relationship was found for specialist care. Ethnic minorities belonging to the second generation contacted medical specialists more often. Generational status did not make a difference for the minority groups separately. This could be a power problem as the effect among Surinamese and Moroccans is significant at a 0.1 level. The same applies for the use of prescription drugs among first generation Moroccans. The relationship between patient-related variables and use of health care was not affected by taking acculturation into account. Remarkably, Moroccans showed a different pattern of health care use than the other three minority groups.

No accepted explanations are available to understand why generational status particularly among the Surinamese is associated with use of GP care. It might be that the propensity to use a specific type of medical care is

different in ethnic groups. Furthermore, it might be that acculturation functions differently in certain ethnic groups than others. Previous research showed that the gate-keeping function of the GP in the Netherlands does not operate differently among the minority groups than among the indigenous population, implying that ethnic differences in specialist care cannot be explained by different referral rates (Uiters et al., 2005). The relatively low variation within the ethnic groups with respect to acculturation might furthermore be an explanation for the small effect of acculturation. The Netherlands does not have a long migration history for the minority groups under study. This is reflected by the low percentage in our study population of second generation ethnic minorities aged over 18 years. Moreover, few Turks and Moroccans were in the highest acculturation category, whereas Antilleans and Surinamese were less often present in the lowest acculturation category. A point of attention is the fact that no validated acculturation scale exists. Hence the extent to which our measurement was able to capture the concept of acculturation might be questioned. However, factor analyses and reliability analyses showed satisfying results. Furthermore, the results in the four groups with respect to the indicators of acculturation were in the direction one would expect, as for instance Surinamese and Antilleans were in general comparable with respect to acculturation. Content validity was assessed by including items commonly used in other research.

In conclusion, our study underlined the importance of including ethnic background as an entity in health care research. The relationship between ethnic background and differences in health care use still holds even when differences in acculturation are taken into account. The most important indicator of acculturation in the explanation of differences in health care use was generational status. Nevertheless, there are indications that acculturation functions differently with respect to type of service used, as generational status seems to relate in opposite directions to GP care and specialist care. Moreover, acculturation appears not to be homogeneous among the minority groups. This was especially found for GP care. The overall effect of acculturation on the use of GP care was found to be applicable to the Surinamese and not to the other minority groups. This implies that the effect of acculturation on the use of GP care should not be estimated by including a general variable for generational status but a variable for each group separately. In a parsimonious model the effect of

acculturation only should be estimated for the Surinamese group. We measured acculturation very broadly, with attention to the acquisition of the content of cultural beliefs and values, in addition to more traditional variables often used in epidemiological research like years of residence; nonetheless, ethnic differences in health care utilisation remained. Based on our results, the question concerning the underlying mechanism explaining the effect of ethnic background on health care use has not been answered. Given the fact that due to the cross-sectional design of our study acculturation was studied in terms of the cultural distance at a given moment in time, longitudinal research will be necessary to help further disentangle the correlation between ethnic background, acculturation and health care use. In this context attention should be given to the heterogeneity among minority groups.

Appendix 8.1

Table 8.1 Acculturation variables used in analysis*

Acculturation aspect	Questions in questionnaire	Answer categories
Years of residence	<ul style="list-style-type: none"> - year of migration? - number of years spent in country of origin afterwards? 	
Generational status	<ul style="list-style-type: none"> - born in the Netherlands? - year of migration? 	yes/no
Language use	frequency with which Dutch is used in contact with: <ul style="list-style-type: none"> - partner/husband/wife? - mother? - father? - siblings? - children? - friends? 	always/often/now and then/never always/often/now and then/never always/often/now and then/never always/often/now and then/never always/often/now and then/never always/often/now and then/never
Language proficiency	<ul style="list-style-type: none"> - able to understand Dutch? - able to speak Dutch? - able to read Dutch? - able to write Dutch 	not/a little/sufficiently/well not/a little/sufficiently/well not/a little/sufficiently/well not/a little/sufficiently/well
Ethnic identification	subjective sense of belonging?	completely Dutch/only Dutch/both a little Dutch and a little country of origin/only country of origin/completely country of origin
Informal social contacts	<ul style="list-style-type: none"> - contacts in spare time with the indigenous population? - ethnic composition of the neighbourhood? 	often/sometimes/never Dutch/non-Dutch/mixed

- table 8.1 continues-

- table 8.1 continued -

Acculturation aspect	Questions in questionnaire	Answer categories
Ties with country of origin	<ul style="list-style-type: none"> - frequency of visits to country of origin? - mail or phone contact? 	<p>never/less than once in 3 years/once in 2-3 years/once a year/more than once a year</p> <p>never/less than once a month/more than once a month</p>
Normative orientation		
<i>secularisation</i>	<ul style="list-style-type: none"> - it is unpleasant when your daughter wants to marry someone from another religion - children should go to a school that reflects the religion of their parents - it is a pity that religion loses importance in the Netherlands - it is unpleasant when your son wants to marry someone from another religion* 	<p>completely agree/agree/neither agree nor disagree/disagree/completely disagree</p> <p>completely agree/agree/neither agree nor disagree/disagree/completely disagree</p> <p>completely agree/agree/neither agree nor disagree/disagree/completely disagree</p> <p>completely agree/agree/neither agree nor disagree/disagree/completely disagree</p>
<i>autonomy of the children</i>	<ul style="list-style-type: none"> - it is better for children to live at home till they marry - when parents get older they should be able to live at their children's home - one should respect one's parents even when they don't deserve it because of their attitude or behaviour - a 17 year old daughter may live on her own - a 17 year old child may decide himself to stop his education* - a 17 year old child may take his own decisions about the money he earns* 	<p>completely agree/agree/neither agree nor disagree/disagree/completely disagree</p> <p>completely agree/agree/neither agree nor disagree/disagree/completely disagree</p> <p>completely agree/agree/neither agree nor disagree/disagree/completely disagree</p> <p>completely agree/agree/neither agree nor disagree/disagree/completely disagree</p> <p>completely agree/agree/neither agree nor disagree/disagree/completely disagree</p> <p>completely agree/agree/neither agree nor disagree/disagree/completely disagree</p>

- table 8.1 continues -

- table 8.1 continued -

Acculturation aspect	Questions in questionnaire	Answer categories
<i>emancipation</i>	- a 17 year old son may live on his own*	completely agree/agree/neither agree nor disagree/disagree/completely disagree
	how important is it for a 12 year old child (and older) to:	
	- obey the parents?*	very important/important/important nor unimportant/unimportant/very unimportant
	- take others into account?*	very important/important/important nor unimportant/unimportant/very unimportant
	- act/think independently?*	very important/important/important nor unimportant/unimportant/very unimportant
	who should:	
	- take care of the children?	only the father/only the mother/both
	- cook?	only the father/only the mother/both
	- searn money?	only the father/only the mother/both
	- be in charge of finances?	only the father/only the mother/both
	- the man should take decisions concerning larges purchases	completely agree/agree/neither agree nor disagree/disagree/completely disagree
	- the woman should take decisions concerning housekeeping	completely agree/agree/neither agree nor disagree/disagree/completely disagree
	- the man should take decisions about money matters	completely agree/agree/neither agree nor disagree/disagree/completely disagree
	- an education is more important for boys than for girls	completely agree/agree/neither agree nor disagree/disagree/completely disagree
	- it is more important for boys to have their own income than for girls	completely agree/agree/neither agree nor disagree/disagree/completely disagree

- table 8.1 continues -

- table 8.1 continued -

Acculturation aspect	Questions in questionnaire	Answer categories
<i>other</i>	- a woman should stop working when she has children	completely agree/agree/neither agree nor disagree/disagree/completely disagree
	- when a child is ill, who should stay at home (also if both have a job) to take care of him/her?*	always the mother/only the mother/only the father/always the father/both/neither
	- in the Netherlands men and women are too easily in contact with each other	completely agree/agree/neither agree nor disagree/disagree/completely disagree
	- in the Netherlands people are too free concerning sexuality	completely agree/agree/neither agree nor disagree/disagree/completely disagree
	- the best family form is two married parents and their children	completely agree/agree/neither agree nor disagree/disagree/completely disagree
	- when someone does not have long to live anymore and suffers he may decide himself about putting an end to his life	completely agree/agree/neither agree nor disagree/disagree/completely disagree
	- in the Netherlands crime is punished too lightly*	completely agree/agree/neither agree nor disagree/disagree/completely disagree
	- in the Netherlands too little respect exists for authorities like doctors, teachers and policemen*	completely agree/agree/neither agree nor disagree/disagree/completely disagree

* item was excluded from the analyses

9 Summary and general discussion

9.1 Introduction

Differences in health care utilisation between ethnic minorities and the indigenous population have frequently been reported (Smaje and Grand, 1997; Stronks et al., 2001). Adequate use of health care services is an important precondition for health. In the context of the growing societal importance of migration, it is important to examine whether ethnic differences in utilisation are an indication of problems in accessibility of health care services, or whether they reflect differences in need. Earlier studies in the Netherlands tended to be descriptive and small-scale (Droomers et al., 2003). Our study aims to contribute to the scientific knowledge about ethnic differences in health care utilisation by means of a comprehensive, nationwide, theory driven approach including a wide range of possible determinants. In addition to descriptive information concerning the existence of ethnic differences in use, an attempt at theoretical progress is made by considering possible explanations for differences in use and the relative importance of the various determinants. Moreover, by comparing two methods of data collection and systematically reviewing the international literature, we aspire to progress from a methodological perspective. In addition to aiming at scientific relevance, our study tried to address practical relevance for general practitioners by determining important aspects for quality improvement. First, a short recapitulation of the main findings of the empirical chapters will be presented. After this summary the study is evaluated at a more transcending level, both from a theoretical and methodological perspective. Before ending with a final conclusion, this chapter addresses some important remaining research questions and implications for general practice and health care policy.

9.2 Ethnic differences in health care utilisation

Our study aimed to examine the differences in health care utilisation between ethnic minorities and the indigenous Dutch population. Use of care was investigated by comparing the number of users of specific types of care among ethnic groups rather than comparing the frequency of use. Chapters four and five show that differences in health care utilisation between the minority groups and the indigenous population appear to depend on the ethnic group and the type of health care service. With respect to the use of

primary medical care our systematic review (chapter 2) shows that no overall consistent pattern could be distinguished with respect to ethnic minority groups. Generally, it does not seem the case that minority groups make an excessive demand upon the primary care system nor that their access is insufficient.

Based on the uncorrected data about health care use, we found that in general, more people from ethnic minority groups reported having contacted their GP, medical specialist and psycho-social caregivers such as social workers, psychologists and the regional outpatient mental health services (RIAGG) than was the case in the Dutch reference group. Ethnic minority groups did not deviate significantly from the indigenous population regarding hospital admissions. On the contrary, use of physiotherapy, prescribed medication and homecare was generally lower among minority groups than in the indigenous population.

9.3 Determinants of ethnic differences in health care utilisation

In addition to the assessment of ethnic differences in health care use, special attention was paid in chapters three, four, five and seven to the question as to what extent these differences can be explained by socio-economic variables, health status, acculturation and study characteristics.

Socio-demographic determinants and health status

In our study health status, age, gender, level of urbanisation and socio-economic position were taken into account as possible variables explaining the relationship between ethnicity and use of health care. In general, when differences in the use of health care services between minority groups and the indigenous population were found, these decreased after adjusting for socio-demographic characteristics and health status (chapters four and five). Nevertheless, in keeping with previous research, ethnic differences in health care utilisation could only partly be attributed to differences in these variables. As mentioned earlier, ethnic minority groups visited their GP more often than the Dutch population. Surprisingly, these differences were more pronounced among people with good self-rated health (chapter three). Ethnic minority groups in good health visited their GP more often than the

indigenous Dutch population. Poor self-rated health also remained an independent factor for contacting the GP. When rating health as poor, only Surinamese people visit their GP more often.

Research on health care utilisation by ethnic minorities has mostly been performed within the context of large cities. In chapter four the focus was specifically on the extent to which ethnic differences in utilisation were correlated to the level of urbanisation of the neighbourhood. We found that the differences in utilisation showed very little correlation with urbanisation level. Differences in utilisation between the four minority groups and the indigenous population were not concentrated within the cities, and seemed therefore to be independent of problems inherent to large cities. This implies that policy addressing ethnic differences in health care use demands a broader approach than the context of large cities alone. However, given the relatively large number of people with an ethnic minority background living in urban communities, the monitoring of health care utilisation by ethnic minorities within the context of cities remains an important policy instrument.

An analysis of single services does not produce any distinction between people who contact their GP only and those who also use additional services. Therefore, in addition to single service utilisation, patterns of use are assessed in chapter 5. Patterns refer to the use of different sources of care during the same period. The most frequently occurring exclusive combinations of service use appeared to be centred on the following four types of services:

- GP care only;
- outpatient specialist care (contact with the GP and outpatient specialist or hospital admission);
- mental health care (contact with the GP and ambulatory mental health care and possibly other services);
- allied health professional care (contact with the GP, outpatient specialist/hospital admission and physiotherapist or other allied health professional care).

After adjustment for socio-demographic variables, urbanisation and health status, differences in utilisation patterns were particularly marked for people with a Moroccan, Turkish or Antillean background. All minority groups were in general found to contact the GP more frequently than the indig-

enous population, but figures concerning the utilisation of only GP services revealed that this pattern was least apparent for Antilleans. Moreover, Moroccans tended to make less use of specific combinations of health care services than the other groups. The general picture that emerged from our study indicates that, except for the Surinamese, the likelihood of contact with any professional health care services at all was equal among migrants and the indigenous population. Compared to the other groups, the Surinamese were the least likely not to contact any professional health care service. The analysis of patterns of utilisation proved to supply useful information concerning the relationship between ethnicity and use of health care services in addition to figures for single service use only. Support was found for the assumption of Pescosolido (1992) that patterns of utilisation need to be considered in order to provide more insight into the nature of differences in use of care (Pescosolido, 1992). Furthermore, no evidence was found that the gatekeeping role of the GP in the Netherlands functions less effectively among the migrant groups as compared to the indigenous population.

Cultural determinants

As mentioned earlier, ethnic differences in health care use could only partly be explained by differences in health status and socio-demographic variables. The remaining unexplained variance is usually attributed to the existence of cultural differences between minority groups and the indigenous population. In chapter seven we examined the relationship between cultural determinants and contact with GPs, medical specialists and use of prescription medication by analysing culture-bound aspects that could either promote or hinder use of care. When cultural factors are included in health care research, the focus is usually on acculturation. Acculturation refers to the process by which a group becomes socialised into a new culture by adopting its language, values and behaviour (Chesney et al., 1982; Bhopal et al., 1998). It is increasingly accepted that acculturation is not a linear process, with individuals ranging from unacculturated to assimilated, but rather a multidimensional process that includes one's orientation to both one's own ethnic culture and the host society. Given the fact that our study was cross-sectional, clearly the process characteristics of acculturation could not be assessed. To facilitate readability we will use the term acculturation, when we are actually referring to the cultural distance

between minority groups and the indigenous Dutch population at a given moment in time. The basic hypothesis driving our analysis was the expectation that as minority groups become more acculturated, their health care use becomes more similar to that of the indigenous population. Due to the fact that we included four minority groups it was also possible to study whether acculturation has specific features for these separately. To justify the multi-dimensional character of acculturation, measurements in a very broad sense were applied. Attention was paid to the acquisition of the content of cultural beliefs and values, informal social contacts with the indigenous population, use and proficiency of the host language and perceived ethnic identity, in addition to more proxy indicators such as length of residence and generational status. The results showed that the minority groups were not homogeneous with respect to acculturation. As could be anticipated based on their historical background with the Netherlands, the Surinamese and Antilleans were in general comparable with respect to acculturation. The same applied to Moroccans and Turks. With respect to the relationship between acculturation and the utilisation of health care services, the results showed that the relationship between ethnic background and health care use still holds even when differences in acculturation are taken into account in addition to socio-demographic and health status variables. The most important indicator of acculturation in the explanation of differences in health care use was generational status (dichotomised into first generation and second generation). No support was found for the expectation that according as people had been living longer in the Netherlands, differences in health care use between minority groups and the indigenous population would diminish. At the same time, the indicators of acculturation seemed to function differently with respect to the type of service used and did not seem homogeneous among the minority groups. This was especially found for GP care. For instance, more Surinamese from the first generation contacted GPs than the indigenous population, whereas this relationship was not found for the other minority groups. The opposite relationship was found for specialist care. Second-generation ethnic minorities contacted medical specialists more often than the first generation. Surprisingly, the relationship between patient-related variables and use of health care was not affected by taking indicators of acculturation into account.

Study characteristics

In chapter two the international literature concerning primary health care use in western countries was reviewed. It became clear that the results of the various studies showed little agreement about the general extent and direction of ethnic differences in use and the relative importance of the explaining variables. This makes it difficult to draw general conclusions and improve theoretical insights. In order to address this issue in more detail, our review investigated the extent to which ethnic differences in primary care use were found across countries and minority groups and were related to the methodological quality and study characteristics such as sample size and adjustment for confounders in the analyses. The results showed that according as studies scored higher for methodological quality, the likelihood of reporting significant differences increased, whereas adjustment for confounders (especially health status) and taking into account possible cultural differences and language problems during data collection were negatively related to significant differences reported in the studies. Studies performed in the US were more likely to report significant differences in utilisation between ethnic groups than studies in the other countries. This suggests that the results from US studies on ethnic differences in health care use are not reliable predictors for the European or Canadian situation. As the strength of the primary care system in the US is found to be substantially weaker than in the other countries, our results suggest an association between ethnic differences in use and a country's orientation towards primary care. Our review clearly underlines the need for careful design in studies on ethnic differences in health care use.

As our review showed that ethnic differences are related to methodological quality and study characteristics, the influence of the method of data collection was examined in greater detail. Little is known about the concordance between different methods of data collection among ethnic minorities. Frequently, data obtained from different sources do not concur. In the literature, this finding is often perceived to be a general validity issue and in the case of research among minority groups more specifically as a cross-cultural validity issue. In chapter eight we investigated to which extent ethnic differences between self-reported data and data based on electronic medical records (EMR) from GPs might be a validity issue or reflect lower compliance with regard to prescribed medication among minority groups. The main outcome measures focussed on the prescribing rate based on the

EMRs of GPs, the self-reported receipt of prescriptions and the actual use of these. Our study showed that the pattern of ethnic differences in receipt and use of prescription medication depended on whether self-reported data or EMR data were used. Ethnic differences based on self-reports were not consistently reflected in EMR data. The relatively high EMR prescription rate among minority groups was, especially for Turks and Moroccans, not reflected in a high self-reported use of prescriptions. Therefore, ethnic differences between self-reported data and EMR data are not only a cross-cultural validity issue. At least for Moroccans and Turks, compliance with the prescribed medication by the GP was suggested not to be optimal.

9.4 Ethnic differences in perceived quality of care

Although it appears that actual access to GPs by ethnic minorities is not problematic, this conclusion cannot automatically be generalised to the quality of care minority groups receive. Therefore, in chapter seven we aimed to explore the differences in perceived quality of care between ethnic minorities and the indigenous Dutch population with respect to competence, personal treatment, communication and information and continuity. These aspects of the quality of care were examined in terms of importance and performance. Performance refers to the actual experience with a health care service, whereas importance relates to the fact that patients perceive some features of services to be more significant than others. Subsequently, possible differences were related to patient characteristics and to supply characteristics. An instrument that proved to be a useful measure of user perception of quality of care is the QUOTE (Quality Of care Through the patients Eyes). Because no valid, reliable instrument existed to measure the quality of GP care among ethnic minorities, the generic QUOTE questionnaire was adapted for use among this specific subpopulation. Our results showed that the key aspects of good quality GP care underlined by all groups, were attitude-related aspects of health care provision. For instance the fact that a GP should take the patient seriously was consistently valued as highly important. This is seen as more important than service aspects, such as having own-language leaflets. However, the language-related aspects were valued higher among people with relatively low use and proficiency in the Dutch language. Minority groups did not systematically differ in the perceived performance of their GP. No

indications were found that GPs who are used to managing a multicultural patient group provide a higher standard of care in the eyes of the patients.

9.5 Limitations

After addressing the main findings, the chief limitations of our study have to be put forward. First, when interpreting the results it should be borne in mind that the findings relate only to adults aged 18 and older and that only people from the four largest ethnic minority groups were included in the review. Given the variation in utilisation rates between ethnic groups in our study, the generalisability to other minority groups and health care use among children remains unclear.

Non-response is a common problem in research among minority groups. There is a possibility that for instance the relatively more acculturated persons from ethnic minority groups participated in the survey, and that those who are less familiar with the health services did not take part.

Another important limitation is that comparison between the indigenous population and ethnic minorities may be hampered by the lack of cross-culturally validated questionnaires. Hence, the extent to which our measurements were able to capture the intended concepts might be questioned. Although there are indications that self-reporting yields a valid estimate of ethnic differences in health care use, caution is advised in interpreting these differences (Reijneveld and Stronks, 2001; Meloen and Veenman, 1990). In order to minimise distortion, the questionnaires were translated and bi-lingual interviewers deployed if necessary. Moreover, a pilot was conducted at the start of the study to establish the extent to which the questionnaire was understood by the minority groups and was related to their cultural background. Perceived health and perceived quality of care were measured by instruments specifically developed for research among Turkish and Moroccan respondents.

Our study was also limited by the fact that it was beyond its scope to distinguish reasons for health care use. Health care use and its determinants are likely to depend on whether care is needed for physical problems, mental health problems, serious illnesses or minor complaints (Alberts, 1998). For instance, it may be presumed that ethnic differences in utilisation rates for mental health problems will show a different pattern than for physical problems, as research suggests that cultural factors may possibly

play a role in a reluctance to consult for psychosocial problems. Some minority groups are found to have a tendency to somatise psychiatric problems, which in turn may even be an explanation for the higher contact rate with the general practitioner (Yu Es and Cypress, 1982).

Furthermore, it is not evident that using the indigenous population levels of use provides a socially optimal benchmark (Weinick et al., 2000). It is possible that lower levels of use among the indigenous population represent under-utilisation compared to a healthy optimum.

9.6 Recommendations for future research

Our results suggest that the likelihood of using a specific type of medical care is different among ethnic groups. Our study mainly focused on the possible explanation for these differences between ethnic groups and the indigenous Dutch population. However, questions remain about the heterogeneity within ethnic groups. Nevertheless, our analyses concerning acculturation suggest that determinants of health care utilisation may function differently in certain ethnic groups than in others. For instance, generational status appeared to be particularly associated with the use of GP care among the Surinamese. No accepted explanations are available for this heterogeneity within ethnic groups. Future research should examine both the within- and the between-group variation to determine to which extent variance reflects true ethnic differences or is caused by heterogeneity within groups (LaVeist, 1994). This issue is closely related to the well-known problem in defining ethnic groups (Smaje and Grand, 1997). The comparison between and within ethnic groups implies valid conceptualisation, measurement and definition. In our study ethnicity was based on the definition of Statistics Netherlands using the country of birth of a person and his or her parents. Internationally, this definition is not commonly used. Statistical offices in other countries use nationality (Germany, France and Belgium), country of birth (Sweden), or own perception (UK). The Dutch definition is rather broad, resulting in a relatively large population of ethnic minorities (CBS, 2005). The large variation in the international operationalisation of ethnicity complicates the comparability of research results. In order to improve the interpretation of the results concerning ethnic differences in health care utilisation, the appropriateness of assignment to ethnic groups needs to be investigated. Research on methods

for ethnic classification should therefore be given a higher priority both nationally and internationally, allowing for ethnicity's complex and fluid nature (Bhopal, 1997).

Our study underlined the need for careful design in survey-based studies concerning ethnic differences in health care use. In line with research in this field, the importance of taking cultural differences and language problems into account is stressed (Warnecke et al., 1997; McGraw et al., 1992; Hunt and Bhopal, 2003). Nevertheless, few validated instruments for application among minority groups are available, leaving the question concerning the validity and reliability of the results unanswered. For instance, the indication that the use of a single-item question on self-rated health might be not valid for comparing the indigenous Dutch population with first generation Turks and Moroccans supports the need for cross-cultural validation of questionnaires (Agyemang et al., 2006). In our study health status was addressed by a combination of a single-item question on self-rated health and the number of chronic conditions. The number of chronic conditions was estimated using a checklist of chronic conditions from the health interview studies conducted by Statistics Netherlands (Van den Berg and Van der Wulp, 1999). Relatively little research has been conducted to address and improve the cross-cultural development of questionnaires, standardisation of survey items and practical implementation. Likewise, the cross-cultural validity of different methods of data collection receives little research attention. Our results suggest that the discordance between self-reports and data retrieved from electronic medical records concerning the use of prescription medication cannot be totally attributed to cross cultural validity-related explanations, such as propensity to answer in a particular way. The discordance between both methods of data collection might therefore reflect an actual difference in the receipt and use of prescriptions. Future research examining possible mechanisms to explain the level of agreement between different methods of data collection concerning health care utilisation may possibly provide more insight into the cross-cultural validity of different methods of data collection. Related to the validity issue, the design of studies will also inevitably have an effect on the response rate among minority groups. For instance, ethnic matching between respondents and interviewers will, at least for some groups, have a positive effect on the response rate. In our study positive results from ethnic matching were found for Moroccans, whereas for Antilleans the response rate increased once

interviewers were not from an Antillean background. These are important issues to consider, as the low response rate among minority groups is a common problem in research. As non-response might introduce selectivity to the results and complicate the interpretation, researchers need to address possibilities of boosting the response rate among minority groups (CBS, 2005). This starts with proper analysis and reporting of the non-response. A careful examination of the causes for non-response should guide the development of approaches to enhance the response, while minimising the chance of selectivity at the same time. As poor reachability was a frequent problem in our study and many others, approaches could focus on this aspect. Increasing the contact frequency and lengthening the field work are costly, but promising, effective means to increase the response rate among subgroups (CBS, 2005).

Based on the cross-sectional design of our study, the question concerning the underlying mechanism explaining the effect of ethnic background on health care use has not been answered. Longitudinal research will be necessary to help further disentangle the correlation between ethnic background, and health care use. It may be that the propensity to use a specific type of medical care is different in ethnic groups. For instance, it is unclear why Moroccans in general tend to make less use of health care than the other three minority groups. Furthermore, it may be that determinants function differently in certain ethnic groups than others. In particular, the question remains as to whether health care utilisation by ethnic minority groups as well as the indigenous population is adequate. In addition to establishing the extent to which health care use by ethnic minorities is adequate, research is also needed on the adequacy of care given to ethnic minority patients. Communication difficulties and cultural impediments are major sources of misunderstanding and may have consequences for the effectiveness of the selected treatment and subsequent adherence (Baker, 1996; Cecil and Killeen, 1997; Centraal Bureau voor de Statistiek, 1991).

9.7 Implications for general practice

By examining ethnic differences in health care utilisation and perceived quality of care our study provides tools that may possibly improve health care deliverance to ethnic minority groups. In order to provide good accessi-

bility and quality of care for minority groups, the needs and wishes of these groups need to be addressed. Our findings indicate that attitude-related aspects of health care provision were perceived to be the key aspects of good quality of GP care, as underlined by all groups. Importance was especially attached to the aspect that a GP should take the patient seriously. Furthermore, the recognition by GPs that problems might be different among ethnic minority groups and interest in a patient's cultural background emerged as important aspects for quality improvement. This underlines the need for GPs to pay attention to fostering relationships and improving communication with ethnic minority patients (Ferguson and Candib, 2002). Awareness of differences in health risks and cultural views concerning health and illness between ethnic groups are essential with respect to this issue (Klazinga, 2000). The recognition of the conceptual distinction between disease and illness is relevant. Disease refers to the Western paradigm often defined as the malfunctioning of biological and psycho-physiological processes in the individual; whereas illness represents personal, interpersonal, and cultural reactions to disease or discomfort (Anderson, 1986). Minority groups often confer specific meanings on illness. The experience of illness is embedded in a complex cultural, family and social nexus (Anderson, 1986). The health beliefs of minority patients are often not concordant with those of Western health workers, hence the risk of misunderstanding. It can be argued that health care outcomes in terms of compliance and satisfaction are directly related to the degree of cognitive disparity between the explanatory models of practitioners and patient as well as the effectiveness of clinical communication (Van Wieringen et al., 2002). Our findings give rise to the hypothesis that compliance concerning prescription medication is lower among minority groups as compared to the indigenous population. It is likely that both patient compliance and the efficiency of prescribing patterns among GPs can be enhanced by greater attention to cultural differences in health beliefs and attitudes.

In addition to structural factors such as accessibility by phone and the arrangement of an appointment within 24 hours, greater emphasis on language-related aspects is called for. This would provide considerable scope for quality improvement. This was especially found to be the case among Moroccans and Turks. Minority groups indicated that quality improvement could be expected from the provision of an interpreter and information in their own language. The literature also upholds the recom-

mendation for professional interpreters to bridge the gaps in access experienced by patients with lower proficiency in the host country language (Ferguson and Candib, 2002). One might question whether culture-specific education is a good solution for language and cultural barriers to care, arguing that it could exacerbate the isolation of minority groups and reduce the incentive to integrate. Nevertheless, provided that is conducted properly and directed at the correct target group, health education in patients' own language is thought to contribute significantly to health status, reducing isolation and encouraging participation in society (Van Haastrecht and Singels, 2000; Bruijnzeels et al., 1999). Moreover, our results showed a higher use of GP-care by migrants in general, and more specifically by those in good health. This may be an indication for inadequate use of care and also suggests the need for culture-specific health education of these groups in the area of self-care.

9.8 Policy implications

Given the fact that more than 60% of the children born in the large cities now have a minority background, attention for minority groups in health care policy is justified (Stronks, 2000). The idea that the second or third generation will become more similar to the indigenous Dutch population by convergence in health status and health behaviour and that therefore the attention for possible problems in accessibility and quality of care among minority groups will be redundant in the near future can be refuted by the fact that in 2015 two thirds of the minority population will still belong to the first generation. Even though one can debate about the time period in which convergence in health status and health behaviour may become manifest this is not likely to happen in the short term (Stronks, 2000). With respect to health care policy our findings show that ethnic differences in health care utilisation were not concentrated within the cities, and seem therefore to be independent of problems inherent to large cities. This implies that policy addressing ethnic differences in health care use demands a broader approach than the context of large cities alone. Furthermore, the relative importance of attitude-related aspects for the quality of care stresses the significance of sufficient medical knowledge and competence and an open attitude as far as cultural differences are concerned. Since the health beliefs of western physicians are shaped by both their own cultural background

and their biomedical and clinical training, attention for cultural factors in health behaviour should be an essential part of medical education (Van Wieringen et al., 2002; Schulpen, 2000). However, focus on this issue is often fundamentally lacking both in the Netherlands and in other western countries (Schulpen, 2000; Loudon et al., 1999). Moreover, due regard for ethnic differences in the recommendations for practice guidelines needs to be ensured (Manna et al., 2003; Assendelft, 2003).

9.9 Conclusion

In conclusion, our study confirmed the existence of ethnic differences in health care utilisation. These differences strongly depend on the type of health care service and vary considerably between the four minority groups. Our research findings do not indicate the extent to which the ethnic differences in health care use represent an undesirable situation. Further study is required in order to shed light on the mechanisms underlying these differences. In particular, the question needs to be addressed as to whether ethnic differences in health care utilisation put minority groups at risk for poor health status. As poor health status will hinder participation in society, this issue clearly needs to be addressed. By reducing possible inequity in health, health care can contribute to the integration of minority groups in the Netherlands. Although it is possible that lower levels of use may reflect more efficient use of care (rather than lower access) and higher levels of use may reflect overutilisation of services (rather than greater access), our results show little evidence of an overall inequity in the receipt of health care by minority groups. However, in the light of the results of our study, it is important to be aware of the differences between the various ethnic groups. Our results suggest that there are systematic differences between ethnic groups which may indicate some problems of access to health services, reinforcing the need for continuing attention to ethnic patterns in health care utilisation. For instance, it is unclear why Moroccans in general tend to make less use of health care than the other three minority groups. Therefore, the importance of including ethnic background as an entity in health care research, with specific attention for the heterogeneity among minority groups, is underlined by our study.

Samenvatting (Summary in Dutch)

Achtergrond

Dit proefschrift richt zich op de vraag in hoeverre er in Nederland verschillen in zorggebruik bestaan tussen de autochtone en allochtone bevolking. Daarnaast wordt aandacht besteed aan de relatieve invloed van belangrijke determinanten van zorggebruik. Gezien het belang van de gezondheidszorg voor de gezondheid, is het noodzakelijk om inzicht te hebben in hoeverre etnische verschillen in zorggebruik een indicatie zijn voor toegankelijkheidsproblemen van gezondheidszorgvoorzieningen of meer een weerslag zijn van een verschillende behoefte aan zorg. Bij de start van dit onderzoek waren de meeste studies naar dit onderwerp in Nederland beschrijvend van aard en lokaal georiënteerd. In onze studie proberen we dit beeld aan te vullen met gegevens die verzameld zijn in een representatieve nationale context, namelijk de Tweede Nationale Studie naar ziekten en verrichtingen in de huisartspraktijk.

In deze Nationale Studie participeren 104 huisartsenpraktijken verdeeld over heel Nederland. De totale populatie van deze praktijken bestond uit 399.068 personen, waarvan 12.699 Nederlandssprekende mensen zijn geïnterviewd. Daarnaast zijn aanvullende interviews afgenomen bij 1339 personen met een Turkse, Marokkaanse, Surinaamse en Antilliaanse achtergrond. Dit proefschrift is grotendeels gebaseerd op data die afkomstig zijn uit de interviews.

Dit proefschrift beoogt bij te dragen aan wetenschappelijke kennis over etnische verschillen in zorggebruik door naast beschrijvende informatie ook theoretische vooruitgang te bewerkstelligen door mogelijke verklaringen voor verschillen in overweging te nemen. Vooruitgang in methodologisch opzicht wordt nagestreefd door het vergelijken van verschillende methodes van dataverzameling en door een systematische beoordeling van de internationale literatuur. In aanvulling op de wetenschappelijke relevantie probeert onze studie ook in praktische zin relevant te zijn voor huisartsen door belangrijke aspecten van kwaliteitsverbetering in kaart te brengen.

Alvorens af te sluiten met een discussie waarin de resultaten in overstijgende zin aan de orde komen, volgt eerst een samenvatting van de belangrijkste resultaten.

Etnische verschillen in zorggebruik

In hoofdstuk vier en vijf van dit proefschrift wordt aangetoond dat etnische verschillen in zorggebruik afhankelijk zijn van de etnische groep en het type zorgvoorziening. Uit ongecorrigeerde data over zorggebruik komt naar voren dat mensen met een allochtone achtergrond meer contact hebben gehad met de huisarts, medisch specialist en psychosociale hulpverleners, in vergelijking met de autochtone bevolking. Daarentegen was er met betrekking tot ziekenhuisopnames geen significant verschil. Het gebruiken van voorgeschreven medicatie en het gebruik van fysiotherapie en thuiszorg was daarentegen onder allochtonen lager dan onder autochtonen. Etnische verschillen in zorggebruik volgen dus geen consistent patroon hetgeen overeen komt met het beeld dat uit een systematische beoordeling van de internationale literatuur naar voren komt (hoofdstuk 2). Dit betekent dat er zowel nationaal als internationaal geen aanwijzingen zijn voor een algehele onder- of overconsumptie van eerstelijns zorg door allochtone groepen. Dit impliceert dat verschillen in zorggebruik dus bestudeerd moeten worden per type voorziening en voor allochtone groepen afzonderlijk.

Determinanten van etnische verschillen in zorggebruik

In aanvulling op het in kaart brengen van etnische verschillen in zorggebruik is in de hoofdstukken drie, vier, vijf en zeven speciale aandacht besteed aan de vraag in welke mate deze verschillen verklaard kunnen worden door sociaaldemografische variabelen, gezondheid, culturele variabelen en studiekenmerken.

Sociaaldemografische determinanten en gezondheid

In dit proefschrift zijn gezondheid, leeftijd, geslacht, urbanisatiegraad en sociaal-economische positie bestudeerd als mogelijke variabelen die de relatie tussen etniciteit en zorggebruik kunnen verklaren. In het algemeen

bleken verschillen in zorggebruik tussen de allochtone en de autochtone bevolking af te nemen na correctie voor sociaaldemografische kenmerken en gezondheid (hoofdstuk vier en vijf). Echter bleken, overeenstemmend met eerder onderzoek, etnische verschillen in zorggebruik maar gedeeltelijk toegeschreven te kunnen worden aan verschillen in deze variabelen. Allochtonen bezochten hun huisarts vaker dan de autochtone bevolking, maar opvallend was dat dit verschil met name aanwezig was onder mensen met een goede ervaren gezondheid (hoofdstuk 3).

In hoofdstuk vier is specifiek aandacht besteed aan de mate waarin etnische verschillen in zorggebruik samenhangen met de urbanisatiegraad van de woonomgeving. Uit de analyses bleek nauwelijks samenhang. Etnische verschillen in zorggebruik waren niet geconcentreerd in de steden en lijken derhalve onafhankelijk van problemen die samenhangen met de grote steden. Dit betekent dat beleid gericht op etnische verschillen in zorggebruik om een bredere aanpak vragen dan de context van de grote steden.

Een mogelijke verklaring voor het feit dat allochtonen meer contact hebben met de huisarts in vergelijking met de autochtone bevolking, zou kunnen zijn dat de huisartszorg voor allochtonen een substituut is voor de meer gespecialiseerdere zorg. Een analyse van afzonderlijk zorggebruik verschaft hier geen inzicht in, aangezien het dan niet mogelijk is om te onderscheiden of mensen alleen contact hebben gehad met hun huisarts of dat zij daarnaast ook gebruik maken van andere voorzieningen. In dit onderzoek wordt dit onderscheid wel gemaakt door in hoofdstuk vijf patronen van zorggebruik in kaart te brengen in aanvulling op afzonderlijk zorggebruik. Deze patronen hebben betrekking op het gebruik van verschillende voorzieningen gedurende een gegeven periode. Na correctie voor sociaaldemografische variabelen, urbanisatiegraad en gezondheidstoestand bleken verschillen in patronen van zorggebruik met name te bestaan voor mensen met een Marokkaanse, Turkse en Antilliaanse achtergrond. Marokkanen bleken minder gebruik te maken van combinaties van zorgvoorzieningen dan de andere allochtone groepen. Het algemene beeld dat naar voren komt uit onze studie suggereert dat behalve onder Surinamers, de kans op contact met een gezondheidszorgvoorziening gelijk is onder zowel allochtonen als autochtonen. In vergelijking met de andere allochtone groepen bleken Surinamers minder contact te hebben gehad met een zorgvoorziening. De analyse van patronen van zorggebruik geeft dus geen aanleiding te

veronderstellen dat de poortwachterfunctie van de huisarts in Nederland minder effectief functioneert onder zowel de allochtone als onder de autochtone bevolking.

Culturele determinanten

Zoals al eerder genoemd is, kunnen etnische verschillen in zorggebruik maar ten dele verklaard worden door verschillen in gezondheidstoestand en sociaaldemografische variabelen. De overgebleven variatie wordt vaak toegeschreven aan de invloed van culturele factoren. In hoofdstuk zeven van dit proefschrift wordt aan dit onderwerp aandacht besteed. De relatie tussen cultuurgebonden factoren en contact met de huisarts, medisch specialist en het gebruik van voorgeschreven medicatie staat hierbij centraal. Wanneer culturele factoren in gezondheidszorgonderzoek worden meegenomen is de aandacht meestal gericht op acculturatie. Acculturatie verwijst naar het socialisatieproces van een minderheidsgroep ten aanzien van het omgaan met een nieuwe cultuur qua taal, gedrag waarden en normen. In hoofdstuk 5 verwijst acculturatie naar de culturele afstand tussen allochtonen en autochtonen. De primaire hypothese is de verwachting dat naarmate allochtonen meer geaccultureerd zijn, het zorggebruik meer gaat lijken op dat van de autochtone bevolking. Doordat we vier verschillende allochtone groepen geïnccludeerd hebben in ons onderzoek, was het ook mogelijk om te bestuderen of de samenhang tussen zorggebruik en acculturatie tussen de afzonderlijk groepen homogeen is.

Om recht te doen aan het multi-dimensionele karakter van acculturatie zijn uiteenlopende indicatoren van acculturatie meegenomen. In aanvulling op proxie-indicatoren zoals lengte van verblijf en het behoren tot de eerste of de tweede generatie, zijn ook waarden en normen, informele sociale contacten met de autochtone bevolking, gebruik en beheersing van de Nederlandse taal en etnische identificatie in de analyses betrokken. Opvallend was dat etnische verschillen in zorggebruik blijven bestaan, zelfs nadat rekening was gehouden met acculturatie. Generatie was de belangrijkste indicator van acculturatie in het verklaren van etnische verschillen in zorggebruik. Geen steun werd gevonden voor de verwachting dat naarmate mensen langer in Nederland wonen verschillen in zorggebruik tussen allochtonen en de autochtone bevolking verdwijnen.

Studiekenmerken

Om meer zicht te krijgen op de mate waarin etnische verschillen in zorggebruik bestaan in westerse landen wordt in hoofdstuk 2 een systematisch overzicht gegeven van de internationale literatuur over verschillen in eerstelijns zorggebruik. Deze verschillen worden vervolgens gerelateerd aan de methodologische kwaliteit en kenmerken van de betrokken studies zoals steekproefgrootte en correctie voor confounders. De resultaten laten zien dat naarmate studies een betere methodologische kwaliteit hadden de kans op rapportage van significante verschillen toenam. Daarentegen waren de correctie voor confounders (met name gezondheid) en het in acht nemen van culturele verschillen en taalproblemen negatief gerelateerd aan de rapportage van significante verschillen. Deze resultaten benadrukken het belang van een zorgvuldige uitvoering van studies naar etnische verschillen in zorggebruik.

Studies uitgevoerd in de Verenigde Staten (VS) bleken vaker significante verschillen in zorggebruik tussen allochtonen en de autochtone bevolking te rapporteren dan studies uitgevoerd in andere landen. Dit suggereert dat resultaten van studies over etnische verschillen in zorggebruik uitgevoerd in de VS geen betrouwbare predictoren voor de Europese en de Canadese situatie zijn. Gegeven het relatieve zwakke eerstelijns zorgsysteem in de VS in vergelijking met de andere landen suggereren onze resultaten een associatie tussen etnische verschillen in zorggebruik en de mate van oriëntatie van een land richting de eerstelijns zorg. Mogelijk draagt een sterke positionering van de eerstelijns zorg in positieve zin bij aan de toegankelijkheid van de zorg voor potentieel kwetsbare groepen van de bevolking. Dit onderwerp dient in toekomstig onderzoek aandacht te krijgen aangezien ander onderzoek suggereert dat psychologische, culturele en sociaal-economische variabelen belangrijker zijn in de verklaring van etnische verschillen in zorggebruik dan kenmerken van het gezondheidszorgsysteem.

Aangezien ons onderzoek laat zien dat etnische verschillen in zorggebruik gerelateerd zijn aan kenmerken van studies, is in hoofdstuk acht van dit proefschrift de invloed van methode van dataverzameling nader onderzocht. Data die op verschillende manieren verkregen zijn, komen vaak niet overeen. In de literatuur wordt dit veelal gezien als een algemeen validiteitsprobleem en in geval van onderzoek onder etnische minderheden meer specifiek als een cross-cultureel validiteitsprobleem. In hoofdstuk acht

is onderzocht in hoeverre etnische verschillen in zorggebruik gebaseerd op zelfgerapporteerde data, overeenkomen met verschillen gebaseerd op het elektronische registratiesysteem van de huisarts. Hierbij staat voorgeschreven medicatie centraal. De resultaten lieten zien dat etnische verschillen in ontvangst en gebruik van voorgeschreven medicijnen afhankelijk waren van de dataverzamelmethode. Het relatief hoge percentage voorgeschreven medicijnen onder met name Turken en Marokkanen was niet terug te vinden in het zelfgerapporteerde gebruik. Dit lijkt niet alleen terug te voeren op een cross-cultureel validiteitsprobleem, maar suggereert ook dat onder Turken en Marokkanen de therapietrouw ten aanzien van door de huisarts voorgeschreven medicijnen niet optimaal is.

Kwaliteit van zorg

Hoewel onze resultaten suggereren dat het feitelijk toegang verkrijgen tot de huisarts voor allochtonen niet problematisch is, kan dit niet automatisch doorgetrokken worden naar de kwaliteit van zorg die allochtonen ontvangen. Daarom wordt in hoofdstuk zeven van dit proefschrift aandacht besteed aan etnische verschillen in de ervaren kwaliteit van zorg. Uit de resultaten komt naar voren dat allochtonen niet verschillen van de autochtonen in de beoordeling van de kwaliteit van de geleverde zorg door de huisarts. Onderzocht is de samenhang tussen ervaren kwaliteit van zorg en het aantal allochtone patiënten in een huisartspraktijk. Hieruit kwam naar voren dat er geen indicaties zijn dat huisartsen die meer gewend zijn om om te gaan met een multiculturele patiëntengroep een betere kwaliteit van zorg leveren. Aspecten waar door alle groepen veel belang aan wordt gehecht zijn attitude-gerelateerd. Met name het belang van serieus genomen worden komt duidelijk naar voren. Belangrijke aspecten voor kwaliteitsverbetering binnen de allochtone groepen blijken de erkenning dat problemen in bepaalde allochtone groepen anders zijn, en interesse in de culturele achtergrond. Aandachtspunten voor verbetering van zorg die te maken hebben met de structurele aspecten zijn de wachttijd voor een afspraak met de huisarts of specialistische zorg en de gehorigheid van wachtkamers. Onder Marokkanen en Turken bleek met name dat meer aandacht voor taal-gerelateerde aspecten belangrijke handvatten voor kwaliteitsverbetering zijn. Informatiebrochures in de eigen taal en gebruik van een tolk zijn hier voorbeelden van, hoewel men kan discussiëren over de

vraag of dit de aangewezen middelen zijn om taal- en cultuurbarrières in de zorg te verminderen. Het inzetten van vertaalde brochures en tolken zou mogelijk isolatie van allochtone groepen in de hand kunnen werken en de prikkel tot integreren wegnemen. Echter, indien dit op correcte wijze en bij de juiste doelgroep gebruikt wordt, lijkt in de praktijk gezondheidsvoorlichting in de eigen taal juist in belangrijke mate bij te dragen aan de gezondheid, en daardoor aan het verminderen van isolement, en vergemakkelijkt de participatie in de samenleving. Het feit dat uit ons onderzoek blijkt dat allochtonen de huisarts vaker bezoeken, en met name degenen die een goede gezondheid ervaren, duidt mogelijk ook op een behoefte aan cultuurspecifieke voorlichting. Meer voorlichting over bijvoorbeeld zelfzorg zou in deze context nuttig kunnen zijn.

De resultaten in het hoofdstuk over kwaliteit van zorg onderstrepen het belang van aandacht voor communicatie en het opbouwen van een relatie met allochtone patiënten. Bewustwording van verschillen in gezondheidsrisico's en culturele beleving van ziekte en gezondheid zijn hierbij essentieel. De beleving van ziekte is in allochtone groepen soms ingebed in een complexe culturele, familiale en sociale context. De gedachte over gezondheid is bij allochtone patiënten soms wezenlijk anders dan die van de huisarts, hetgeen de kans op miscommunicatie groot maakt. Aandacht voor culturele verschillen zal een positief effect hebben op de therapietrouw en tevredenheid met de zorgverlening. Dit onderwerp verdient ook aandacht in het medisch onderwijs, iets wat in de praktijk nauwelijks het geval is, zowel in Nederland als in andere landen.

Discussie

Onze studie bevestigt het bestaan van etnische verschillen in zorggebruik. Deze verschillen hangen sterk samen met het type voorziening en de verschillen per etnische groep. Ons onderzoek geeft geen indicatie in hoeverre deze etnische verschillen in zorggebruik een onwenselijke situatie vertegenwoordigen. Met name de vraag in hoeverre etnische verschillen in zorggebruik allochtonen in een risicosituatie plaatsen voor een slechtere gezondheidstoestand moet in vervolgonderzoek aandacht krijgen. Aangezien een slechte gezondheidstoestand participatie in de samenleving belemmert is dit een belangrijk onderwerp. Door verschillen in gezond-

heidstoestand waar mogelijk te reduceren, kan de gezondheidszorg bijdragen aan de integratie van minderheden in Nederland. Gegeven het feit dat 60% van de kinderen die geboren worden in de grote steden momenteel een allochtone achtergrond heeft, is het belangrijk om aandacht blijven besteden aan etnische verschillen in zorggebruik. Het idee dat etnische verschillen in zorggebruik zullen verdwijnen doordat de tweede of derde generatie qua gezondheidstoestand en gezondheidsgedrag meer zal gaan lijken op de autochtone bevolking, lijkt op de korte termijn niet aannemelijk. In 2015 zal immers tweederde van de allochtonen nog steeds tot de eerste generatie behoren.

Een aantal methodologische kanttekeningen dienen te worden gemaakt. Ten eerste hebben de resultaten alleen betrekking op personen die 18 jaar of ouder zijn. Bovendien is alleen aandacht besteed aan de vier grootste groepen allochtonen die in Nederland woonachtig zijn. Gegeven de variatie in resultaten tussen de verschillende groepen is de generaliseerbaarheid van onze bevindingen naar andere allochtone groepen en naar kinderen onduidelijk. Daarnaast viel het niet binnen de doelstelling van ons onderzoek om de redenen van zorggebruik te bestuderen. Zorggebruik hangt af van de vraag of zorg nodig is voor lichamelijke problemen of geestelijke problemen. Ook de ernst van een aandoening beïnvloedt uiteraard de beslissing of al dan niet professionele hulp wordt gezocht. Het lijkt aannemelijk dat etnische verschillen in zorggebruik voor geestelijke problemen een ander patroon vormen dan voor lichamelijke problemen. Uit eerder onderzoek is gebleken dat sommige allochtone groepen geneigd zijn om geestelijke problemen te somatiseren, hetgeen een mogelijke verklaring kan zijn voor het hebben van meer contact met de huisarts. Door het cross-culturele design van onze studie is het niet mogelijk om uitspraken te doen omtrent de onderliggende mechanismen die de etnische verschillen in zorggebruik kunnen verklaren. Het zou bijvoorbeeld kunnen zijn dat de geneigdheid om een bepaald type zorg te gebruiken afhankelijk is van etniciteit. Dit zou een mogelijke verklaring kunnen zijn voor het feit dat Marokkanen in het algemeen minder gebruik maken van zorgvoorzieningen dan de andere allochtone groepen. Dit vraagt om longitudinaal onderzoek.

Een ander punt van aandacht voor toekomstig onderzoek is de definitie van etniciteit. In ons onderzoek is etniciteit gebaseerd op de CBS-definitie die uitgaat van geboorteland. Deze definitie is breder dan in veel andere landen

gebruikelijk is, resulterend in een relatief grote groep allochtone inwoners in Nederland. De grote internationale variatie in de operationalisatie van etniciteit compliceert de vergelijkbaarheid tussen andere landen. Een ander punt dat uit ons onderzoek duidelijk naar voren komt is het belang van een zorgvuldig design van studies gericht op etnische verschillen in zorggebruik. Aandacht voor mogelijke taalproblemen en culturele verschillen dienen aandacht te krijgen in de voorbereiding van de dataverzameling. Er is een gebrek aan onderzoek dat aandacht besteedt aan het ontwikkelen en verbeteren van cross-culturele vragenlijsten teneinde de validiteit en betrouwbaarheid van onderzoeksresultaten te verhogen. Het ontwerp van de studies heeft ook onontkoombaar effect op de respons. Een lage respons is een bekend probleem onder allochtone groepen. Dit levert het gevaar op van mogelijk selectiviteit in de resultaten en compliceert de interpretatie. Het startpunt voor het ontwikkelen van een benadering die de kans op non-respons en selectiviteit minimaliseert is een zorgvuldige non-respons analyse. In ons onderzoek bleek de bereikbaarheid een belangrijke reden voor non-respons. Het ophogen van de contactfrequentie en het verlengen van de veldwerkperiode lijken veelbelovende middelen om non-respons vanwege deze reden tegen te gaan. Daarnaast bleek etnische matching tussen respondenten en interviewers voor sommige allochtone groepen een positief effect te hebben. Dit was met name het geval voor Marokkanen, terwijl onder Antillianen de respons juist omhoog ging als interviewers met een andere etnische achtergrond ingezet werden.

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Ellen Uiters was born on October 2, 1969 in Veendam, the Netherlands. After secondary education, she completed the school of nursing (HBO-V) in Groningen in 1991. After two years practical experience as a nurse, she studied Health Education at the University Maastricht (UM) from 1993 to 1997. In addition to Health Education, specific research courses were attended, resulting in a registration as Epidemiologist A in 2001. After receiving a Master degree in Health Education, she worked till 2000 as a research assistant at the Centre for Quality of Care Research (WOK) at the Catholic University of Nijmegen (KUN). Subsequently, from 2000 till 2002 she was employed at the Department of Health Promotion and Health Education, University of Maastricht (UM), where she participated as a researcher in a European project aimed at the prevention of smoking among schoolchildren. In 2002 she became a PhD-candidate at the Netherlands institute for health service research (NIVEL) in Utrecht. Since 2005 she is a researcher at the Asylum, Migration and Integration Division from the Research and Documentation Centre (WODC), Ministry of Justice in The Hague.

