

Migrants' access to healthcare

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INTRODUCTION

Throughout history migration has existed as a way for individuals to improve their lives. People have moved periodically following hunting or gathering cycles. Migration has moreover been prompted by wars and fear of ethnic, political or religious persecution. Indeed, the story of Moses leading his people from Egypt into Sinai is one of ethnic and religious exodus. Striking examples of modern European exoduses include the emigration of more than 50 million Europeans to the Americas from 1820 – 1920, and the 30 million refugees in Europe by the end of World War II. Alan Dowty (1) elegantly demonstrates the worldwide importance of migration by asking us to imagine the world's map only a thousand years ago: "There were no Germans in Berlin, no Russians in Moscow, and few Turks in what is now Turkey. Spain was mostly Moslem, the southern Ukraine was inhabited by Turkish tribes, and most Bulgarians lived in Central Asia... Most strikingly, of course, the New World was inhabited only by native American Indians". Thus, migration almost appears to be an existential condition for the evolution of humanity.

Between 1990 and 2005 Europe's migrant stock rose by 14.7 million to 64.1 million (2). This rise represents a challenge to the member states of the European Union (EU), which have generally responded by introducing increasingly restrictive policies on immigration. These policies have further been encouraged by xenophobic sentiments and the war on terror as well as a wish to better integrate migrants who already reside in Europe. However, in the light of the falling birth rates in Europe, it has paradoxically been recognised that migrants are needed to secure our high living standards in the future. In 2006, these conflicting tendencies prompted United Nations' then Secretary-General Kofi Annan to state: "One of the biggest tests for the enlarged European Union, in the years and decades to come, will be how it manages the challenge of immigration. If European societies rise to this challenge, immigration will enrich and strengthen them. If they fail to do so, the result may be declining living standards and social division" (3).

One of the great challenges of migration is to manage migrants' health needs well. Migrants represent a potentially vulnerable population health-wise, because they are exposed to a number of health risks before, during and after migration. Secondly, migrants may have different disease profiles from the population in receiving countries. Thirdly, barriers to health services in receiving countries may hamper migrants' access to care. Concerns for migrants' health have fostered an emerging new health discipline and a corresponding research field, which overall comprises two aspects: a) migrants' state of health and its determinants; and b) access to healthcare for migrants in receiving countries. The subject of this PhD thesis is access to healthcare for migrants in receiving countries. I argue this is an important problem to address for several reasons: Firstly, more knowledge is called for by clinicians, health administrators and politicians who work with migrants' health and access to healthcare. Moreover, there are strong pragmatic and moral reasons for receiving societies to address access to healthcare for migrants. In terms of pragmatic reasoning: receiving societies have an interest in sustaining migrants' health, because ill-health hinders the ability to in-

tegrate and thus to participate in and contribute to the receiving society. In terms of moral reasoning: the right to the highest attainable health is a fundamental human right; and receiving societies are therefore obliged to provide accessible, appropriate and effective services to all inhabitants including migrants.

The underlying assumption behind the studies of this PhD thesis is that factors related to migration and ethnicity may influence migrants' access to healthcare. This abstract perspective is investigated through four studies, which encircle the problem from different approaches. The first two studies serve to exemplify disparities in migrants' healthcare access compared to non-migrants whereas the two later studies explore why possible differences in healthcare access exist between migrants and non-migrants. Three studies are based on a Danish context and a fourth provides a comparison of Danish healthcare policies with that of other EU countries.

1.1 ABOUT MIGRANTS

1.1.1 *International migrants*

Migration has been facilitated by globalisation. In 2005 migrants numbered 191 million, which is equivalent to 3% of the world's population. This is an increase of 121 million in 45 years (4). In 1995 the number of international migrants in developed countries exceeded that in developing countries for the first time and by 2005, 60% (115 million) of the world's migrants lived in developed countries (5). Europe had the largest number (64 million), which accounted for nearly 9% of the total population (6). International migrants imply migrants who move across international borders. According to the various reasons and ways of migrating, international migrants can overall be categorised into: 1) labour or student migrants; 2) family reunification migrants; 3) forced migrants (including refugees and asylum seekers); and 4) irregular migrants (who enter a country – usually to work – without necessary permits) (7).

The focus of this PhD thesis is on labour migrants, family reunification migrants and forced migrants: The *labour* migrants concerned are individuals who entered Denmark and other Western countries in the 1960s and 1970s as guest workers. *Family reunification migrants* were the most predominant group to come to Western countries in the 1980s and 1990s. *Forced migrants* have been more prevalent over the past 20 years as a result of many conflicts worldwide. In 2005, the estimated number of refugees was 13.5 million, which accounted for 7% of the world's migrant stock (6). From 1994 to 2004, 6.1 million asylum applications were filed worldwide of which 79% were in Europe; and from 1994 to 2003, 28% of the claims resulted in refugee status or permission to remain temporarily (8). According to the Universal Declaration of Human Rights: "Everyone has the right to seek and to enjoy in other countries asylum from persecution" (9). Asylum seekers can obtain refugee status if they fulfil the 1951 United Nations Refugee Convention as someone who has well-founded fear of persecution "for reasons of race, religion, nationality, membership of a particular social group or political opinion" (10). Additionally, other complementary forms of protection resulting in refugee status can be granted under international and national law (11).

1.1.2 Migrants in Denmark

In the late 1960s the populations whom we generally speak of today as migrants began to arrive. Due to the economic boom in this period 'guest workers' were invited to Denmark, especially from: Turkey, Pakistan, Morocco and Ex-Yugoslavia. In 1973, the authorities put a stop to labour migration due to rising economic problems resulting in increased unemployment rates (12). Since then it has only been possible to enter Denmark as: a refugee, a temporary student, a worker with special skills, or through family reunification. Hence, in the 1980s and 1990s the majority of migrants entering Denmark were refugees from: Iran, Afghanistan, Ex-Yugoslavia, Somalia and Iraq, as well as family reunifications with refugees and labour migrants (12). The latest restrictions in the Alien Act came in 2002 (13). This resulted in a dramatic decrease in the number of novel residence permits for family reunification and asylum and an increase in the number of residence permits for study and special skilled workers. Consequently, 89% of residence permits in 2006 were given to work/study. Only 9% were given to family reunification and 2% to asylum (14). The total number of persons granted family reunification in Denmark in 2006 was 4,198, which was down to one third of the level of 2001 (14). In 2006 the top five application countries were: Turkey, Thailand, Philippines, China and Iraq (15). The total number of persons granted asylum in 2006 was 1,095 persons, which was less than one fifth of the level in 2001 (14). In 2006 the top five application countries for asylum were: Iraq, Serbia-Montenegro, Afghanistan, Iran and India (16). The following categories of persons can obtain asylum in Denmark: a) *Convention refugees* (who fulfil the UN Refugee Convention); b) *B-status* (persons who have well-founded fear of atrocities other than stated in the UN Refugee Convention); c) *Humanitarian grounds* (i.e. persons with serious illness or handicaps who cannot return); d) *Quota refugees* (arriving due to an agreement between the United Nations High Commissioner for Refugees (UNHCR) and the Danish State obliging Denmark to take a yearly quota of about 500 refugees). Appendix I shows the development in residence permits among family reunification migrants and asylum seekers from 1993-2006.

In total, migrants (6.6%) and second-generation (2.2%) descendants constituted 8.8% (477,700) of the population on January 1 2007 (17). This PhD thesis uses the definition of Statistics Denmark, which defines first-generation migrants as persons born abroad whose parents were both born abroad; and descendants as persons born in Denmark whose parents were both born abroad (17). The majority (6.1%) of migrants and descendants are from non-Western countries and this figure is expected to rise to 9.1% in 2050 (18). In 2006, the most frequent non-Western countries of origin were: Turkey, Iraq, Bosnia-Herzegovina, Lebanon, Iran and Ex-Yugoslavia (17). This PhD thesis predominantly concerns first-generation migrants from non-Western countries, because the effect of migration and ethnicity is presumably more distinct for these groups, and because they form the majority of migrants in Denmark.

1.1.3 Terminology

The terminology regarding migrants in the literature is ambiguous.

Several terms have been and are employed in the public and scientific debate including: guest workers, migrants, immigrants, refugees, ethnic groups, ethnic minorities and racial groups. Which terms are applied when and why to a certain extent reflects the socio-political history of migration in different countries. Also, it reflects the inherent difficulties in distinguishing between persons who migrate because of political persecution, conflict, economic problems or environmental degradation. On a scientific level, the ambiguous terminology in the medical literature is also a sign of an ongoing discussion on how to agree on a general terminology within this research field, which involves a debate on the most valid ways of measuring migration and ethnicity. This PhD thesis mainly concerns first-generation migrants in Denmark and views the migration process as a catalyst of events that may influence access to healthcare. Consequently, I chose to employ the overall term 'migrant' as "a person moving from one country to another with the intention or possibility of staying for some time, often a year or more" (19). More specifically, the term 'migrant' is frequently applied when the decision to migrate is taken freely. In contrast, refugees are forced migrants who are protected by international humanitarian law. To recognise this important distinction the traditional Danish terminology often refers to "immigrants and refugees" when referring to international migrants. However, I prefer to employ 'migrant' as an umbrella term unless more specific distinctions are relevant in which case I will refer to the specified groups. The terminology for other inhabitants in the receiving countries is also somewhat unclear. I decided on the term *non-migrant* throughout this text. These decisions on terminology are the outcome of a dynamic process involving many reflections and discussions, which have not always been consistent and clear over time. This is also mirrored in the somewhat different terminology that has been employed in the articles of the substudies that constitute this PhD thesis.

1.1.4 Migrants' access to healthcare in Denmark

Family reunification migrants hold residence permit when they register with The National Register (Folkeregisteret) in their local municipality. This implies that they are included under the Danish National Health Insurance and therefore have the same rights to healthcare as Danish citizens. Apart from a quarantine period of 6 weeks this implies free access to healthcare. As of December 2007 there were no available guidelines from the National Board of Health concerning the reception of newly arrived family reunification migrants including medical screening. Consequently, children and adults are not systematically screened for disease upon arrival or updated according to the Danish vaccination programme. Nor are they introduced to the Danish healthcare system, but have to rely on their relatives and language schools for this.

Danish Red Cross is responsible for *asylum seekers* healthcare in cooperation with the Danish Immigration Service, who has drawn a set of instructions (20;21), which outline asylum seekers' medical rights. Adult and children asylum seekers are not included under the Danish National Health Insurance System, and therefore do not have the same right to healthcare as Danish citizens. In case of acute

treatment asylum seekers may use the emergency room or a general practitioner at one of Red Cross' asylum centres. In case of non-acute treatment asylum seekers may contact a general practitioner at an asylum centre. However, if specialist treatment is needed at a hospital or specialist clinic, a doctor from the Red Cross has to apply the Danish Immigration Service to get treatment costs paid. The application is then subject to an administrative evaluation, which is effectuated by a non-medical case worker, who may, if needed, discuss the case with a medical consultant. Costs will be granted if treatment is considered: "necessary, urgent and pain-relieving" (20). Thus, asylum seekers do not have the same legal rights to medical care as Danish citizens in case of non-acute disease; however, in practice their access is less limited. Concerning medical screening, Red Cross offers voluntary physical and mental screening of all newly arrived asylum seekers.

Like family migrants, *quota refugees* hold a residence permit when they arrive in Denmark and therefore are included under the Danish National Health Insurance in the same way as Danish citizens. Quota refugees come directly from refugee camps and are dispersed in municipalities all over Denmark, where they are assigned housing and a general practitioner. It is entirely up to the local municipality or individual general practitioners to initiate medical screening and an introduction to health services. As of December 2007 there were no official guidelines from the National Board of Health as to medical screening of newly arrived quota refugees in Denmark. But, from 2005 all quota refugees have been medically screened in refugee camps abroad before they are offered residence permit (22). It is uncertain how the results will be used by the Danish Immigration Service and if the results will be conveyed to relevant health authorities in Denmark.

1.2 THE CONCEPTS OF MIGRATION AND ETHNICITY

How can researchers attempt to explain differences in health and access to healthcare between migrants and non-migrants? I argue that, although migrants are constituted by heterogeneous groups, it is possible to define some common denominators using the concepts of migration and ethnicity. These concepts represent equally important but different approaches to exploring 'the effect on health' of being a migrant. Unfortunately, they are often treated separately and rarely described as interconnected processes. The underlying idea behind this PhD thesis is to investigate how selected dimensions of migration and ethnicity may affect access to healthcare. Thus, the four substudies attempt to encapsulate dimensions of these abstract concepts to investigate their effect on access. Below, the concepts of migration and ethnicity are presented including their linkage to health – and interrelated.

1.2.1 Migration

The word migration derives from the Latin word 'migrare', which means to move. Migration is intrinsically linked to the development of both sending and receiving countries. Thus, the nature and size of migration is determined by a complex interplay between *push-factors* such as war, poverty, human rights abuses and hunger; and *pull-*

factors such as job possibilities and human rights protection. Migration may simply be defined as: "The movement of a person or group of persons from one geographical unit to another across an administrative or political border, with the intention of settling indefinitely or temporarily in a place other than their place of origin" (23). This definition does, however, not take into account that migration implies a sociodynamic process. Syed & Vangen (24) account for this in their definition of migration as: "...a process of social change, whereby an individual moves from one cultural setting to another for the purpose of settling down in the new environment either permanently or for a prolonged period". This definition refers to a process that encompasses environmental, biological, economic, social and cultural aspects related to up-rooting, travelling and restabilising. Although, there are no exact definitions of when the migration process stops, migration is mostly applied as an analytical framework in the context of first-generation migrants. Migration history varies according to receiving countries. In some European states ex-colonial migration has been known for decades whereas other countries like Denmark are relatively new migrant countries. I argue that in countries with a continuous influx of new migrants, migration is equally important as ethnicity to take into consideration as determinant of migrants' health.

The literature on why and how to measure migration status within epidemiological research is scarce. Depending on the problem the following measures have been suggested including: native versus non-native, residence status, years since immigration, and language skills. (25). Besides catching whether a person is a migrant or not, these measures also attempt to capture either legal migration status or degree of integration. Many aspects of the effect of migration have not been studied, and migration status as an epidemiological variable needs to be explored. To date, this has not been the case because 'migration data' are not easily available to researchers, and because migration has not received weighty interest from researchers as a conceptual determinant of migrants' health and access to care.

The interaction between migration and health is a multifaceted and dynamic one, which encompasses migrants' genetic, socio-economic and cultural characteristics as well as their previous health history, conditions of resettlement and access to healthcare (26;27). Factors associated with migration may have both positive and negative effects on health. It has been shown that migrants are healthier upon arrival in relation to chronic disease compared to non-migrants ('the healthy migrant effect'), although this effect may diminish over time. Conditions related to the migration process may, however, also increase vulnerability to ill health. This link between migration and health especially arises because the process of migration is associated with a number of risk factors for ill health (27-32). These risk factors may be divided according to the different stages of the migration process: *Pre-migration risk factors* include events in the country of origin such as: conflicts, torture, being detained, living in refugee camps, violence and poverty. Also, access to healthcare services may have been difficult due to conflict or poverty. Migrants may also have experienced *risk factors for ill-health during the jour-*

ney itself including: insecurity and lack of access to food, water and medical assistance. In particular, human trafficking may imply serious health hazards. *Post-migration risk factors* are associated with living conditions in the receiving country, and include diverse risk factors such as: legal restrictions on access to healthcare, long lasting asylum procedures resulting in prolonged existential uncertainty, language difficulties, social isolation, discrimination and unemployment. Additionally, migrants are 'new' to the healthcare system in receiving countries and may receive limited introduction to this topic.

1.2.2 Ethnicity

The word ethnicity derives from the Greek word *ethnos* meaning people or a nation. It has been elaborated on especially since the late 1960s within the discipline of social anthropology where it took over what was before subsumed under "culture" or "tribe". I have chosen not to define the complex concept of culture in this text, but rather focus on ethnicity. The evolution of the notion of ethnicity is strongly linked to the Norwegian anthropologist Frederik Barth's text on: "Ethnic Groups and Boundaries". Barth opposed the idea that we live in a world of separate peoples, where each group has developed "...its cultural and social form in relative isolation...", and which therefore "...can legitimately be isolated for description as an island to itself" (33). This implied a shift from a static concept of ethnicity to an interactional approach, and from ethnicity as a concept solely concerned with culture to one that also concerns social organisation. Barth's thinking is recaptured by Jenkins: "Shared culture...is best understood as generated in and by processes of ethnic boundary maintenance, rather than the other way round: the production and reproduction of difference *vis-à-vis* external others is what creates the image of similarity internally *vis-à-vis* each other" (34). I argue that this Barthian viewpoint elegantly fits into the framework of migration, in that ethnicity can be seen as resulting from the novel boundaries that migration entails. Wallmann explores Barth's viewpoint further: "...ethnicity is the process by which 'their' difference is used to enhance the sense of 'us' for purposes of organisation or identification...Because it takes two, ethnicity can only happen at the boundary of 'us, in contact or confrontation or by contrast with 'them. And as the sense of 'us' changes, so the boundary between 'us' and 'them' shifts. Not only does the boundary shift, but the criteria which mark it change" (35). Thus, the aforementioned migration process shapes cultural identity and gives rise to 'situational' ethnicity, which should be viewed as a heterogeneous and dynamic concept.

This is in contrast to the picture of ethnicity as a 'primordial' and static concept of inherent individual characteristics. Ethnicity is often seen as an attribute of minority groups but majority populations also have ethnic identities. Lack of recognition hereof by majority populations may result in a perception of 'ethnic minorities' as particularly troublesome to society (including the healthcare system). The creation of ethnic minorities implies some degree of marginalisation or exclusion, which may lead to situations of potential or actual conflict with the majority. According to Castles & Miller (36):

"...ethnicity leads to identification with a specific group, but its visible markers – phenotype, language, culture, customs, religion, behaviour – may also be used as criteria for exclusion by other groups". This may enhance a tendency to focus on differences rather than on similarities for example among health personnel. Based on Barth, an up-to-date social anthropological definition of ethnicity includes four dimensions: 1) ethnicity is about cultural differentiation; 2) ethnicity is centrally concerned with culture – shared meaning – but is also rooted in, and to a considerable extent the outcome of, social interaction; 3) ethnicity is no more fixed or unchanging than the culture of which it is a component or the situation in which it is produced and reproduced; 4) ethnicity as a social identity is collective and individual, externalised in social interaction and internalised in personal identification (37).

In the epidemiological literature the concept of ethnicity has been much debated (38-45). The importance of having a sound conceptual basis is recognised, but there is not always consensus on the terms. To meet this need Bhopal has suggested the following internationally applicable definition: "Ethnicity is the social group a person belongs to, and either identifies with or is identified with by others, as a result of a mix of cultural and other factors including language, diet, religion, ancestry, and physical features traditionally associated with race" (46). This definition omits the Barthian genesis of ethnicity as the result of new boundaries and the relative and dynamic aspects of the concept. However, I chose to use ethnicity according to Bhopal's definition in this PhD thesis because it is more operational in this context.

A great challenge for researchers working with epidemiology lies in how to measure ethnicity. Our indicators are often unsatisfactory because we try to condense ethnicity into measurable entities, which will always be shorthand for potentially important information. Overall, the literature classifies individuals according to ethnicity based on either objective or subjective criteria. Objective criteria include: country of birth, language and name analysis. Objective criteria are often used because they are easier to operationalise and more readily available in registers and databases. Objective definitions, however, do not recognise that ethnicity is a dynamic concept that may vary depending on time and place and which also concerns self-identification. Therefore, subjective ethnicity is increasingly considered the gold standard.

According to the above ethnicity encapsulates cultural norms and values as well as behavioural characteristics. Consequently, ethnicity may affect health and access to healthcare for migrants (47). For example, perceptions of disease and risk factors may vary according to cultural and religious beliefs (48;49). Ethnicity may be related to certain expectations of and attitudes towards the relationship between the patient and the doctor roles and the functioning of the healthcare system as such (50-52). All these factors may be aggravated by language barriers and in the end influence health in a negative way, which potentially results in increased morbidity and mortality among migrants. Also, the fact that more migrants have low socioeconomic status and live in deprived communities adds to their health problems. In addition, migrants may experience social

isolation, discrimination and being rootless. All these points affect health negatively.

1.3 WHY IS MIGRANTS' ACCESS TO HEALTHCARE AN AREA OF CONCERN?

The setting of this thesis is *public health*, which concerns community health and especially primary prevention. Public health has been defined as "...the efforts organised by society to protect, promote and restore people's health" (53). I argue that migrants' access to healthcare is an overall area of concern to public health professionals for pragmatic and human-rights-based reasons: *The pragmatic argument* has been outlined by Ingleby et al. (54). It entails migrants with health problems being hampered in the task of integration into receiving societies. In this process illness exacerbates marginalisation and conversely marginalisation exacerbates illness. In contrast, migrants in good health will be more receptive to education and employment and as such feel more empowered when coping with the challenges arising in a new sociocultural context. Simultaneously, integration is a precondition for effective healthcare delivery. Integration is applied here in the sense of a mutual process which ensures that migrants and non-migrants adapt to one another. In conclusion to the pragmatic argument, public health authorities should work to protect, promote and restore migrants' health to prevent marginalisation and facilitate integration. *The human-rights-based argument* builds on the notion of *the right to health*. It is explored below because, I find, it provides an innovative and interesting framework for studying migrants' access to healthcare.

1.3.1 *The right to healthcare*

The right to the highest attainable standard of health was first reflected in the World Health Organisation Constitution of 1946 (55) and then reiterated in the 1978 Alma Ata Declaration (56) and in the World Health Declaration of 1998 (57). Numerous international human rights documents also recognise the right to health. Thus, the Universal Declaration of Human Rights (UDHR) states: "Everyone has the right to a standard of living adequate for the health and well-being of himself and of her/his family, including food, clothing, housing and medical care..." (58). Also, the International Covenant on Economic, Social and Cultural Rights (ICESCR) affirms: "...the right of everyone to the enjoyment of the highest attainable standard of physical and mental health" (59). Declarations like the UDHR are non-binding, whereas treaties like the ICESCR are binding on governments that ratify them, such as the Danish government.

The notion of *the right to health* is grounded in the field of *health and human rights*. In particular, it has been promoted by Harvard professor Jonathan Mann. Together with colleagues he advocated that human rights provide a framework to promote health and prevent disease (60) and that the UDHR should be used as a powerful public health document in line with the Hippocratic Oath of clinical medicine (61). But what are the linkages between health and human rights? Three main areas are agreed on (62;63): 1) Public health policies and programmes can promote or violate human rights in the ways they are designed or implemented; 2) Violations of

human rights can have serious consequences for physical and mental health; 3) Vulnerability and the impact of ill health can be reduced by strengthening human rights.

The right to health may sound strange. Superficially, it seems to presume the absurd assumption that governments or international organizations must guarantee persons good health. In this sense critics have argued that the phrase *a right to health* is conceptually misleading, and that "...a more correct phraseology would be *a right to health protection* including two components, a *right to healthcare* and a *right to healthy conditions*" (64). This is also in line with WHO's 2002 interpretation of: "... the right to health as an inclusive right extending not only to timely and appropriate healthcare but also to the underlying determinants" (65).

Thus, a *right to healthcare* can be seen as part of the right to health. Mary Robinson, the former United Nations High Commissioner of Human Rights, articulated this association: "The right to health does not mean the right to be healthy...But it does require governments and public authorities to put in place policies and action plans which will lead to available and accessible healthcare for all in the shortest possible time" (62).

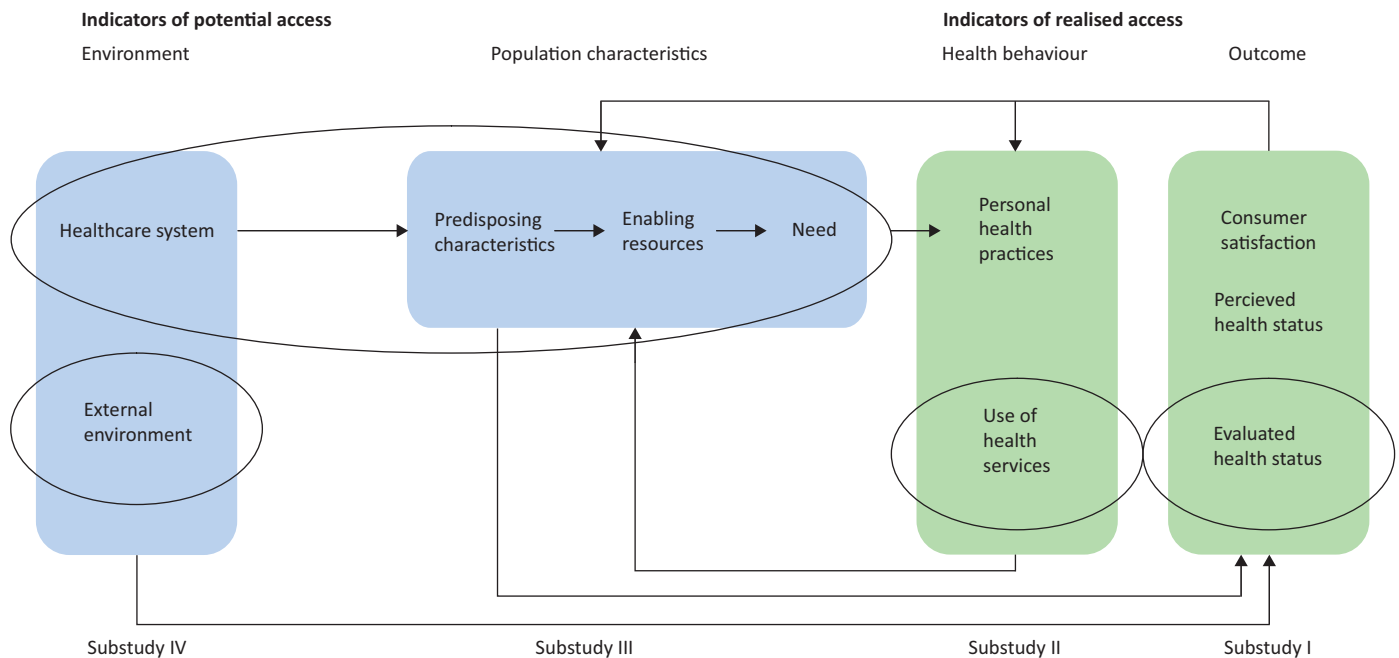
The field of *health and human rights* is still in its infancy within public health. Not least as a framework for the study of migrants' health and access to healthcare. Overall, human rights may benefit work in the area of public health by providing a framework for studying health developments among (vulnerable) populations, especially in relation to the human rights implications of health policies, programmes and legislations. To date, this approach has especially been developed in relation to the poor and sick in developing countries (66). However, I argue that this framework is also relevant when considering vulnerable populations in developed countries. Indeed, some of the most vulnerable groups in our societies are refugees and other migrant groups. Their vulnerability is related to several things including risk factors related to: the process of migration, ethnicity, communication, low socioeconomic status, marginalisation and the fact that their legal rights to healthcare may be infringed. I argue that a human-rights-based perspective represent a relevant but somewhat unexplored approach to migrants' access to healthcare.

1.3.2 *Equity in healthcare*

The concept of health and human rights is closely linked to a more familiar public health concept namely *equity in health*, which consequently deserves mentioning in this context. According to Whitehead (67) "equity in health implies that ideally everyone should have a fair opportunity to attain their full health potential and, more pragmatically, that no one should be disadvantaged...". Braveman & Gruskin (68) have elaborated on his definition to make it more operational for policymakers and researchers: "Equity in health can be defined as the absence of systematic disparities in health between groups with different levels of underlying social advantage/disadvantage". Equity concerns fairness whereas equality concerns differences in a mathematical sense. *Equitable healthcare* requires that resource allocation and access to healthcare are determined by health

FIGURE 1

Andersen's model of access to medical care (colours, italics and circles are added). Source: Andersen, RM. Revisiting the behavioural model and access to medical care: does it matter? *J Health Soc Behav* 1995;36:1-10.



need. Thus, equity in access to healthcare is seen when need determines the allocation of resources irrespective of irrelevant factors such as ethnicity or migration status. Horizontal equity implies equal treatment when equal needs and vertical equity implies different treatment for different needs (69). Tailoring interventions to migrants' needs therefore often concerns vertical equity.

1.4 WHAT DOES ACCESS TO HEALTHCARE MEAN?

In the above I have outlined a contextual background for addressing migrants' access to healthcare. I will now proceed to try to define what access to healthcare means and to delineate an analytical framework for studying migrants' access to healthcare.

1.4.1 The concept of access

Overall, the aim of facilitating access to healthcare is to help people to appropriate healthcare services to optimise health. The idea being that improved access to healthcare can reduce disparities in health – hence the linkage to health and human rights and equity in health. Despite a vast literature on access, there is currently no generally accepted definition hereof (69). On a general level access has been described as the 'fit' between patients and the healthcare system (70). More concretely, Rogers et al. (71) defined optimal access as "providing the right service at the right time in the right place". Gulliford et al. (72) describe access as a multidimensional concept which firstly depends on the *availability* of services. However, facilities may be available without people using them. Consequently the next step is to ensure that people use services when needed.

Utilisation may be influenced by *need* as well as *acceptability*, *affordability* and physical *accessibility* of services. Thus, the probability of utilising services again depends on the balance between individual's perception of their needs, attitudes, beliefs and previous experiences (72).

1.4.2 An analytical framework

Over several decades, Andersen has evolved a model (fig. 1) of access to healthcare (73). *The environment* includes the healthcare system and the external environment. *The healthcare system* encompasses policies, resources and organization. *The external environment* concerns general legal and political frameworks of society. *Population characteristics* cover predisposing characteristics, enabling resources and need. *Predisposing characteristics* are socio-demographic factors (also ethnicity and migration status), health beliefs and genetic factors. *Enabling resources* focuses on financial means and insurance status.

Finally, there must be a perceived *need* reflecting that the problem is judged of sufficient importance to seek professional help. *The environment and population characteristics* are seen as determinants of *health behaviour*, which includes *personal health practices* (e.g. diet, exercise and self-care) and *use of health services* (e.g. type, site, purpose, time interval). These health behaviours may again result in *subjective and objective health outcomes* and *consumer satisfaction*. Andersen's model has been criticised for not including provider characteristics. In a multicultural setting the providers' communication skills and cultural competences are naturally of para-

mount importance. When using Andersen's model, I therefore chose to perceive provider characteristics as belonging to the *healthcare system*.

Access concerns both the potential and the realised entry of a given population group into the healthcare system. Indicators of *potential access* concern characteristics of the healthcare system and the population (74). Explanations of disparities in access to healthcare between migrants and non-migrants concern potential indicators and fall into two main groups (blue areas in fig.1). The first group is linked to *formal barriers* or organisational factors associated with the organisation of the healthcare system. The second group is linked to *informal barriers* or personal factors, which in the case of migrants especially concern cultural differences, language, socio-economic status and 'newness'. These indicators of potential access determine the realised access. *Realised access* is the actual use of services. Indicators of realised access concern utilisation and health behaviour or indicators of satisfaction and subjective and objective health outcomes (green areas in fig.1).

In this thesis I use Andersen's model as an analytical framework to study various dimensions of access to healthcare. I argue there are two overall study questions within research on migrants' access to healthcare. They may simplistically be phrased: a) *Are there differences in migrants' access to healthcare compared to non-migrants?* and b) *Why do possible differences in access to healthcare exist between migrants and non-migrants?* To study the first problem one must address indicators of realised access related to the green areas in figure 1, which is what study I and II of the thesis do. To study the second problem one must address indicators of potential access related to the blue areas in figure 1, which is what study III and IV of the thesis do. I find the use of Andersen's model helpful, because it provides a whole system approach to analysing migrants' access to healthcare including both indicators of potential and realised access. This is useful in this PhD thesis as very different problems in relation to migrants' access are addressed.

2 LITERATURE REVIEW

This review aims to give an overview of the literature about migrants' access to healthcare. Articles were obtained via the PubMed database. The final search was conducted in December 2007. The search was based on two combinations: 1) '(immigrants OR migrants) AND access' (502 hits); and 2) '(immigrants OR migrants) AND (utilisation OR utilization)' (531 hits). Only articles in English were included.

After reading the abstracts only European, Australian and Canadian studies were included as migrants and healthcare services are relatively similar across these countries. Only studies that dealt with elements from Andersen's model (fig.1) were included. This amounted to 45 articles from the original search. Additional searches were conducted via the bibliography of selected articles, including articles in Scandinavian languages.

Also, relevant articles that I learned about otherwise are included. The review is structured in line with the two overall study questions.

2.1. ARE THERE DIFFERENCES IN MIGRANTS' ACCESS TO HEALTHCARE?

2.1.1 Health behaviour and utilisation

The bulk of literature on migrants' healthcare access compared to that of non-migrants concerns utilisation patterns. Regarding *preventive services*, studies focus on uptake of cancer *screening* programmes and prenatal/maternity services. In several countries low attendance and referral rates to mammography (75-78) are shown for various groups of migrant women compared to non-migrants.

Also, lower uptake of cervical screening is shown for migrant women compared to non-migrants (78-81). Higher rates of unintended pregnancies for irregular migrants (82) and higher rates of induced abortions for non-Western migrants (83) indicate difficulties in accessing preventive measures related to reproductive health. Disparities in utilisation are also identified for *prenatal care* (84-86): migrant women of various geographical origins have less contact with maternity care compared to non-migrants. Also, more newborns of migrant women are transferred to neonatal care units (87). Additionally, a Spanish study (88) showed lower vaccination coverage of migrant children compared to non-migrant children.

Several European studies show overall higher *general practise* (GP) use among migrants compared to non-migrants (89-94), although, differences are seen in relation to country of origin, age and sex. However, legal status (refugee versus asylum seeker) among migrants does not seem to influence self-reported GP use (95). A Canadian study showed that GP use increase over time as migrants change from using ad hoc emergency services to a regular source of care (96). Generally studies of *emergency room* (ER) use also show higher utilisation rates among migrants compared to non-migrants (97-99). Underutilisation is, however, shown among migrants in Spain using psychiatric ER services in comparison to non-migrants (100). High rates of ER use among migrants have been related to inadequate access to other services. However, a German study (101) did not find that migrant status was a predictor of inappropriate ER use. Regarding *hospitalisation* the literature shows contrasting results. Several studies show equal utilisation rates by country of origin (94;102-105). However, a recent Swedish study (106) of migrant women found that only non-European refugees had higher admission rates compared to non-migrants. In contrast other British (90;92) and Italian (107) studies document overall lower admission rates for both adults and children with migrant background compared to non-migrant.

However, results vary with diagnosis (107). Concerning length of hospitalisation to somatic wards, a Danish study shows no overall differences between migrants and non-migrants (108). Findings for psychiatric admissions generally show lower admission rates for migrants compared to non-migrants (109-111). However, hospitalisation rates for migrants vary markedly with sex and country of origin (111). Studies of *specialist or outpatient care* show a general tendency towards underutilisation by migrant populations of all ages (90; 92;93;103), apart from a few studies (94;112) which show no differences.

2.1.2 Outcomes

Objective outcomes include disease severity at presentation and mortality. They are much less frequently used as measures of access compared to utilisation. Regarding *disease severity* at diagnosis, studies (113-115) of mental healthcare show higher compulsory admission rates for migrants, indicating more severe disease. The authors argue that this could be explained by decreased access for migrants until diagnosis compared to non-migrants. Cancer stage at presentation has also been used as a proxy of access to healthcare showing longer referral delays (116) and late stage diagnosis among migrants with cancer compared to non-migrants (117;118). Other studies have used alternative clinical indicators of delay in access including: diabetic complications (119) as well as clinical indicators of a broad range of infectious diseases (120-123).

Another objective measure is *mortality*. Studies of overall mortality (124;125) generally show lower rates for migrants compared to non-migrants. This has been attributed to the 'healthy migrant effect', which implies that only the healthiest individuals migrate (126;127). Perinatal mortality is increased among infants of some migrant women (128;129), most likely due to suboptimal perinatal care (130). *Subjective outcomes* of access to healthcare include self-reported health and satisfaction. Studies generally show a tendency towards poorer *self-reported health* among migrants compared to non-migrants (131-133). Few studies concern *satisfaction* and these show contrasting findings (134;135).

2.2 WHY ARE THERE DIFFERENCES IN MIGRANTS' ACCESS TO HEALTHCARE?

Formal barriers include legal restrictions on access. Legal restrictions on access to care exist for asylum seekers (136-138) and irregular migrants (139-142), which may result in lower use of services. In contrast, free access for irregular migrants improves access (143). Formal barriers also include: organisational barriers (144), lack of information about available offers (145;146), lack of referral between services and lack of specific services for migrants (75;145; 147). Also, healthcare personnel may have different attitudes towards migrant patients compared to non-migrant patients, considering migrants to be more demanding (148).

Informal barriers to healthcare access can be divided into questions of language, communication, socio-cultural factors and 'newness'. Access will often be affected by a complex interaction between all these factors. *Language* barriers include lack of comprehensible information about service offers (146;149) and difficulties in making appointments with GPs (150;151). Regarding interpreters, several studies show a need for skilled interpreters among migrants in relation to a number of services (152-156). Unfortunately, lack of skilled interpreters results in poor communication and identification of health problems (157). Barriers to use of interpreters include lack of identified need and staff's preference for ad hoc or none (156). Communication goes beyond language. A Dutch study (158) showed that general practitioners communicate differently with migrants compared to non-migrants in that consultations with migrants were shorter, the general practitioners were more verbally dominant and

migrants less demanding compared with non-migrants. In a Danish PhD thesis (51) on Turkish migrant women's encounters with general practitioners, patients identified stigmatisation, language barriers and doctors' passive bio-psycho-social approach as barriers. Another Danish PhD thesis (52) identified similar communication problems when migrant women with chronic pain disease encountered hospital staff. International studies confirm these results (159;160). Unfortunately, less effective communication in relation to migrant patients may lead to misunderstandings and non-compliance (161; 162). *Socio-cultural* differences in health beliefs and behaviours affect service in relation to: mental health (48;159;163;164), chronic diseases (49;165-167), pain treatment (168) and perinatal care (169). "Newness" or user ignorance may affect recently arrived migrants' access to care or that of migrants who have received no introduction to the healthcare system. It was shown that migrants tend to use ad hoc emergency services upon arrival, but over time adopt to regular sources of care (96;104;170).

3 STUDY AIMS

The intention of this thesis is to increase the understanding of migrants' access to healthcare. It is based on four studies that investigate the following two study aims using different methods:

1. Are there differences in migrants' access to healthcare compared to that of non-migrants? (substudy I and II)
2. Why are there possible differences in migrants' access to healthcare compared to that of non-migrants? (substudy III and IV)

4 MATERIALS AND METHODS

Below the population and methods of the four studies are described and discussed in short. Please see the articles (appendix X) for more detailed information on material and methods.

4.1 SUBSTUDY I: A RETROSPECTIVE REGISTER BASED COHORT STUDY
Aim: To investigate differences in disease stage at diagnosis among migrant women with cancer compared to non-migrant women with cancer in Denmark.

Design: A retrospective register-based cohort study.

Population: A cohort of all migrants (n=84,379) obtaining residence permit as refugees or through family reunification in Denmark from 1.1.1993-31.12.1999 was identified through the Danish Immigration Service (see appendix II). We excluded individuals <18 years and those who did not have civil registration numbers or had more than one. This resulted in a study population of 62,476 individuals. A comparison group of non-migrants was identified through Statistics Denmark. A control group was formed by matching 1:4 on an individual level on age and sex through a random sampling procedure. Migrants without data on nationality and their controls were excluded. In addition one migrant had died before study start. Our final population amounted to 62,461 cases and 249,839 controls (see appendix III). Next, migrant women from East Europe (including Balkan) and Middle East (including North Africa) were identified as

they formed the largest groups and thus allowed for more substantial analysis. This study cohort included 123,670 women of whom 24,734 were migrant women (refugees=12,483; family reunification migrants=12,251).

Data collection: Civil registration numbers were linked to The Danish Cancer Registry, obtaining data on: diagnosis, time of diagnosis and disease stage at diagnosis. All migrant women (n=269) and non-migrant women (n=1,608) diagnosed with cancer 1.1.1993-31.12.2002 were identified (see appendix IV). Only first diagnosis cancers (excluding skin cancer) were included and only cancer types that could be categorised according to stage.

Analysis: We analysed the following two binary outcomes: 1) local versus non-local stage, and 2) unknown versus known (local or non-local) stage. We analysed breast cancer and gynaecological cancers separately and all first diagnosed cancers combined ('all sites'). The latter was done to identify an overall effect on cancer stage distribution. Odds and 95% confidence intervals of local versus nonlocal stages and known versus unknown were estimated by logistic regression. Migrants were subdivided into: 1) refugees from East Europe; 2) family reunited from East Europe; 3) refugees from the Middle East and 4) family reunited from the Middle East.

Strengths and weaknesses: Substudy I highlights some of the advantages and limitations of making register-based cohort studies on migrants in Denmark. Firstly, the design enabled us to identify accurately all refugees and family reunited individuals who entered Denmark over a 7-year period and to follow them for a total of 10 years using register data of high quality. But because the overall incidence of cancer is likely to be lower among migrants and as Denmark is a small country, we identified relatively few migrant women with cancer. Moreover, cancer is less prevalent in the countries of origin of the cohort, and the cohort is relatively young. The small numbers make it more difficult to detect significant associations from our data. Secondly, migrant studies generally use country of birth as a bio-socio-cultural proxy. Data additionally allowed us to use residence status, which is also important as a proxy for pre- and post-migration circumstances. Thus, migrants are introduced differently to the Danish healthcare system depending on residence status. Thirdly, we did not control for socioeconomic status, because the available register data on this are inconsistent and of low validity for first generation migrants. But previous studies have not shown any associations between socioeconomic status and cancer stage at diagnosis in the general population (171;172). Lastly, time since residence allowance was included in our initial analyses, but due to low cell counts this was not possible to include in the final analyses.

4.2 SUBSTUDY II: A CROSS-SECTIONAL REGISTER-BASED STUDY

Aim: To investigate differences in emergency room (ER) use between migrants and non-migrants.

Design: A cross-sectional register-based study.

Population: The study population was identified through the Statistical Office of the Municipality of Copenhagen. It consisted of all residents in the catchment area of Bispebjerg Hospital on 1.1.1998 amounting to 183,478 residents. Individuals aged < 20 years were

excluded. This resulted in 152,253 remaining individuals (see appendix V).

Data collection: Data concerning contacts were also provided by the Statistical Office of the Municipality of Copenhagen. "Contacts" included all visits made to the ER at Bispebjerg Hospital during 1997 by the study population. This amounted to 22,026 ER contacts. Contacts of individuals aged < 20 years were excluded. This resulted in 18,183 remaining contacts (see appendix V).

Analysis: Based on the largest groups of migrants in Denmark, we used the following nine subgroups according to country of birth: Ex-Yugoslavia, Iraq, Nordic countries/EC/North America, Pakistan, Somalia, Turkey, Rest of Europe and Other. Data were analysed by Poisson regression comparing rate ratios of emergency room contacts across migrant groups. In the final analysis we controlled for age, sex, income and the interaction between age and sex. We excluded 433 individuals and 388 contacts without known income (see appendix V).

Strengths and weaknesses: Firstly, we related the population residing in the catchment area of Bispebjerg Hospital on a fixed date, 1 January 1998, to all ER contacts to the hospital within 1997. However, our background data showed an increase in the population from 182,024 as of 1 January, 1997, to 183,478 by 1 January 1998. This represented a rise in the resident population of 0.8% within 1997. We do not know how this increase is distributed by country of origin. But we do not consider this a major bias, if anything it may lead to an underestimation of the utilisation rates of the groups characterised by growth in number during 1997. Secondly, income was used to control for socioeconomic status, as other socioeconomic measures such as education and occupation were less valid and often lacking among migrants. Individuals and 'contacts' without income were excluded from the analysis. These were either individuals or contacts of individuals who had died or moved during 1997 and consequently did not have any information on income on 31.12.1997. However, the estimates did not change considerably when including a level on 'missing information' in the analysis, which encompassed persons with no income.

4.3 SUBSTUDY III: A QUESTIONNAIRE SURVEY

Aim: To investigate if migrants and non-migrants differed in their motivation for using the ER and to find out if they differed in the relevance of their ER claims.

Design: A questionnaire survey.

Participants: The study took place at the ER of all four hospitals with open ER access in the Copenhagen Hospital Cooperation. The questionnaire was given to walk-in patients in all age groups when registering in the ER. Patients were asked to fill it out before treatment. The questionnaire was collected in sealed boxes. The secretary provided caregivers with a questionnaire corresponding to the same patient. To identify corresponding questionnaires, they were pre-marked with an identical serial number. We received responses from 3,809 (54%) walk-in patients out of 7,109 ambulatory patients. A total of 3905 (55%) caregivers responded. We used questionnaires where both patient and caregiver had responded. This amounted to

3,585 responses. Additionally, 159 patient questionnaires missing information on country of birth were excluded. Our final analysis was therefore based on a total of 3,426 questionnaires (see appendix VI).

Data collection: The patient questionnaire concerned patient-identified reasons for using the ER. The caregivers were asked if the complaint was relevant in an ER and whether the patient was hospitalised. The patient questionnaire was available in nine languages: Danish, English, French, Arabic, Farsi, Serbo-Croatian, Turkish, Somalia and Urdu. It was developed in Danish, subsequently translated by one translator, and then translated back to Danish by a different translator to ensure validity. Inconsistencies were cleared in dialogue with both translators. The survey was distributed during all shifts over 3 weeks. Appendix VII shows the English version of the questionnaire for patients and appendix VIII shows the questionnaire for caregivers (only in Danish).

Analysis: Both first- and second-generation migrants were included and analysed according to region of origin: Danish, Western, Middle East and other non-Western. We analysed for bivariate associations in stratified tables, and tested for independence using the Chi-square test.

Strengths and weaknesses: Firstly, our results showed very similar outcomes for all migrant groups compared to non-migrants. This may be because we did not refine our categories into more precise geographical regions, which was not possible due to the low number of migrant participants. Secondly, we decided to include both first- and second-generation migrants into one group in our analyses. As a result, we may be missing important differences between these groups. However, as many second-generation migrants were minors in many cases their questionnaire was completed by their accompanying parent. Thirdly, we included only data from ERs in central Copenhagen, where relative ER proximity is high compared to the rest of the country. This might influence the choice of ER as the primary choice in case of emergency; however, it is unclear whether the effect of distance would differ between migrants and non-migrants. Fourthly, the response rate was relatively low for ER patients (54%). The dropout may be due to different reasons. Being an ER patient is not the most optimal situation for responding to a questionnaire survey: patients may be interrupted, they may be in pain or worried.

This may mean that those who answered the survey were more likely to have minor complaints, which could be defined as irrelevant by caregivers. There is, however, no reason to believe that this would differ between non-migrants and migrants. Moreover, it is possible that those migrants who were better integrated were more likely to answer the questionnaire. This might underestimate the true magnitude of the communication problems that are identified in this study. Finally, it would have been relevant to include questions about the length of time that migrants had lived in Denmark, as this could have bearing on migrants' degree of integration into the Danish society, including communication skills. However, this was not included in order to reduce the complexity and length of the questionnaire.

4.4 SUBSTUDY IV: A HEALTHCARE POLICY SURVEY

Aim: To investigate access to medical screening and national health services for asylum seekers in the 25 European Union (EU) countries.

Design: A questionnaire-based survey.

Participants: Respondents were NGOs and authorities in the then 25 EU countries. We included both NGOs and national authorities as respondents to assure nuanced and valid results. We contacted refugee-assisting NGOs in the EU using an extensive list made available by the European Council for Refugees in Exile (ECRE) (173). In addition, the authorities responsible for asylum seekers' health were contacted for each country. The ministries were contacted by telephone to obtain e-mail addresses of relevant contact persons where possible. In total 104 NGOs and 25 ministries received the questionnaire by e-mail; 8 e-mails to NGOs were returned due to errors in the e-mail address. Thus 121 e-mails were presumably received by respondents.

The questionnaire (see appendix IX) was divided into two parts: the first part concerned access to general healthcare for asylum seekers and the second part concerned access to medical screening programmes upon arrival for asylum seekers. The questionnaire referred to how conditions were on 1 April 2004. The questionnaire survey was sent by e-mail on 19 April 2004. We allowed a response time of 4 weeks. A reminder was sent on June 3 2004, likewise allowing a response time of 4 weeks. Respondents answered by e-mail or regular post. We had a response rate of 30% (36/121), divided into: ministries 60% (15/25) and NGOs 20% (21/104). In total we received responses from 24 out of 25 countries (from either one or more NGOs and/or a ministry). Portugal was the only country from which we did not receive a response.

Strengths and weaknesses: The study has several methodological restrictions. The response rate was especially low for NGOs, which is probably related to the fact that far from all of the NGOs on ECRE's list worked with health issues. The overall response rate may also have been affected if a recipient was not able to complete the questionnaire due to language barriers and did not pass it on. To increase the response rate, we wrote to respondents in person when possible. We had, however, more difficulties finding key persons in NGOs than in ministries. This also relates to the validity of the results. One must expect that respondents varied in their depth of knowledge about the topic. This may have resulted in lack of responses or incorrect answers as well as conflicting answers from the same countries. In case of conflicting answers from two or more respondents from the same country, we decided to exclude those responses from our analysis. Finally, we tried to ascertain the validity of our answers by sending our preliminary results to all the respondents. Accordingly, minor corrections were made in the case of four countries.

5 RESULTS

5.1 ARE THERE DIFFERENCES IN MIGRANTS' ACCESS TO HEALTHCARE? : MAIN RESULTS OF SUBSTUDIES I AND II

Substudies I and II of this thesis examine whether disparities in access to healthcare exist for migrants compared to non-migrants.

The studies explore this theme using two very different indicators of access to care. Thus, study I explores disease severity at diagnosis, which is a less conventional outcome of realised access in the literature. Substudy II investigates differences in utilisation of services as an indicator of access. As mentioned above utilisation is the most widely used indicator of realised access to care in the literature. Substudy I combines region of birth and migrant status as determinants; substudy II uses only country of birth. In conclusion, the two studies show that migrants' access to healthcare overall differs from that of non-migrants.

The aim of study I was to investigate a population-based cohort of migrant women with cancer to compare differences in cancer stage at diagnosis from that of non-migrant women with cancer. Disease stage at diagnosis was used as a clinical indicator of access to healthcare until the point of diagnosis. We analysed breast cancer, gynaecological cancers and all cancers combined. Our descriptive results showed that percentage-wise, fewer migrant women were diagnosed with local disease and more migrant women had unknown stage for all the mentioned cancer categories compared to non-migrant women. Further analyses of breast cancer and gynaecological cancer showed the overall tendency that migrant women seemed to have decreased odds ratios of being diagnosed in local stage and increased odds ratios of having unknown stage compared to non-migrant women. Based on these results we chose to pool and analyse 'all cancer sites' which could be distributed according to stage. For 'all cancer sites', migrant subgroups were less likely to be diagnosed with local stage compared to non-migrant women except for family reunited women from East Europe. Moreover, all migrant subgroups were more likely to have unknown stage compared to non-migrant women – except for family reunited women from the Middle East, who did not differ. When analysing 'all cancer sites' for all migrant women we found that they were less likely to be diagnosed in a local stage compared to non-migrant women. This result was borderline significant (OR=0.77; 95%CI=0.57;1.04). Moreover, migrant women were significantly more often found to have unknown stage compared to non-migrant women (OR=1.59; 95%CI = 1.07;2.36).

The aim of study II was to explore differences in ER utilisation between migrants and non-migrants. Initially, we analysed a crude utilisation rate/1,000 years at risk for each country of birth. The results showed that among the study population persons originating from Somalia, Turkey and Ex-Yugoslavia had the highest rates of ER contacts, and those born in the Nordic countries, EU and North America had the lowest. Next, we performed Poisson regression analysis adjusting for age, sex, income and the interaction between age and sex. Non-migrants formed the reference group. We found that persons born in Somalia (RR=1.46;95%CI=1.17;1.80), Turkey (RR=1.36;95%CI=1.20;1.53) and Ex-Yugoslavia (RR=1.23;95%CI=1.11;1.35) had the highest utilisation rates whereas persons born in the Nordic countries, EU and North America had a lower utilisation rate (RR=0.81; 95%CI=0.74;0.88). Persons born in other countries, Iraq and Pakistan had utilisation rates similar to non-migrants. A highly significant association was also found between income and utilisation showing that

utilisation rates decrease dramatically with increasing income. Thus, the utilisation rate of the highest income groups was about one third of that of the lowest. Moreover, we found that the utilisation rates increase with age for both men and women.

5.2 WHY ARE THERE DIFFERENCES IN MIGRANTS' ACCESS TO HEALTHCARE?: MAIN RESULTS OF SUBSTUDIES III AND IV

Substudies III and IV of this thesis investigate possible determinants of disparities in access to healthcare for migrants compared with that of non-migrants. The studies explore very different potential barriers to access. In summary the two studies identified formal and informal barriers to access to care for migrants compared to non-migrants. Especially, communicative and language barriers constitute informal barriers to care (substudy III); whereas lack of entitlements constitute formal barriers to care (substudy IV).

Study III explored migrants' motivations for seeking ER care compared with those of non-migrants. Our initial descriptive results showed that more patients in all migrant groups had considered contacting their general practitioner or the emergency treatment service before visiting the ER compared to non-migrants. Consequently, we analysed patients' primary reason for using the ER. Patient responses were distributed by geographical origin and stratified for socioeconomic status. Among all respondents, 13% used the ER because they were unable to contact a general practitioner; 62% because it was most relevant to their need; and 25% because they had been referred by a primary caretaker. When looking at the groups of origin, our results showed that migrant ER visits were more often precipitated by an inability to contact a general practitioner. In contrast, more non-migrants indicated that the ER was most appropriate to their needs, compared to all migrant groups. There were virtually no differences between the patients concerning how many had been referred to the ER by a primary caretaker. We stratified our results by socioeconomic position using number of school years, post college education and income as proxies, which did not affect the results. Thirdly, patient respondents were asked if there were any additional reasons why they visited the ER. This was a supplementary question and only about 50% of respondents answered. One of these questions showed that among these respondents, 17% of non-migrants, 26% of patients of Western origin, 44% of patients of Middle East origin and 39% of patients of other non-Western origin had difficulties explaining their problem over the telephone and therefore went to the ER. The results were stratified by education, which did not affect the distribution. Caregivers reported that a total of 21% of patients' visits were not relevant in the ER. One-third of these did not warrant medical attention at all, while two-thirds were not relevant in an ER context. Significant differences according to patients' geographical origins were found: 19% of visits of by non-migrants were deemed not relevant – compared to 30% by migrant patients of Western origin, 33% by patients of Middle East origin and 40% by patients of other non-Western origin. This result was stratified by reason for using the ER, which showed that the relevance of the ER visit was correlated with region of origin for all reasons for visiting the ER. The results also showed that most visits

were considered irrelevant among those who could not contact their primary caretaker.

Substudies I-III concern migrants who in general will have received citizenship or migrant status. In Denmark this implies that their legal entitlements to healthcare equal that of native Danes. In contrast, substudy IV concerns asylum seekers, who constitute a very different group of migrants in Denmark and other countries because their situation often encompasses different legal entitlements – also to healthcare. Substudy IV concerns healthcare policies and explores differences in entitlements to medical care between migrants and non-migrants. The study investigated asylum seekers' access to national health services upon arrival as well as access to medical screening programmes in Denmark and other EU countries compared with that of non-migrants. Access to healthcare differ sometimes for children and pregnant women compared to other migrants, because they are considered more vulnerable. We therefore asked respondents about access for each group. In total there were legal restrictions to access to healthcare for pregnant asylum seekers compared with citizens in 5/21 (24%) of the countries. Legal restrictions for children and adults in general were found in respectively 7/23 (30%) and 10/23 (43%) countries. In total, legal restrictions to access were found for one or more of these groups in 10/23 (43%) of the countries. These countries were Austria, Denmark, Estonia, Finland, Germany, Hungary, Luxembourg, Malta, Spain and Sweden. In all countries, except Austria, legal restrictions were because asylum seekers were entitled only to emergency care. In Austria the legal restriction was explained by the fact that asylum seekers were entitled only to emergency care, if they left the reception centre before they were assigned residence in a federal state. In addition, respondents identified a number of practical barriers that could overall be divided into: 'newness' to available healthcare services as well as language, cultural and structural barriers. Respondent were also asked if access to specialised treatment for traumatised persons existed in their country. This was the case in all but three countries, although the extent of the care differed.

Medical screening of newly arrived asylum seekers existed in all the responding EU countries except Greece. Differences were, however, found in the way that screening was carried out. In some countries, for example Denmark, medical screening was systematically offered to all new asylum seekers whereas in other countries it was carried out only among those registered in reception centres. Differences were also found in the content of the medical screening programmes. Some programmes included both HIV and tuberculosis screening as well as physical- and mental examinations, whereas others included only some of these components. In some countries certain screening components such as tuberculosis test were compulsory whereas in others they were voluntary.

6. DISCUSSION

6.1 DISCUSSION OF METHODS

The thesis makes use of different methodological approaches:

substudy I is a register-based retrospective cohort study; study II is a cross-sectional register-based study; substudy III is a cross-sectional

survey and study IV is a survey-based health policy analysis. The different designs were chosen because they were each considered appropriate for trying to answer the study questions. The strength of this heterogeneous approach to the topic is that it may simultaneously serve as a platform to compare and discuss the use of various methods aiming to investigate migrants' access to healthcare. Below, methodological characteristics as well as strengths and limitations of the studies are further discussed. First, the two register based studies (substudies I and II) are addressed; second the two survey studies (substudies III and IV). Finally, I discuss the challenges of measuring migration and ethnicity.

Overall, quantitative studies appear useful to investigate whether disparities in healthcare access exist, whereas both quantitative and qualitative studies can explain why disparities exist. The literature review showed that quantitative studies are more ample than qualitative studies within this research field. However, qualitative studies are needed to explain differences and to help deconstruct the variables of ethnicity and migration status by identifying the phenomena that determine the effect on health and access to healthcare of these variables.

6.1.1 Discussion of the two register-based studies

One may simply describe the two register-based studies as being concerned with statistical associations between ethnicity and/or migrant status and measures of realised access. More conventionally speaking, the register-based retrospective cohort substudy (substudy I) is analytic in nature, whereas the register-based cross-sectional substudy (substudy II) is more descriptive. To date, descriptive epidemiological studies dominate research on migrant health, whereas analytic studies are still scarce. This may be a natural consequence of migration health still being in its infancy in many countries, which makes descriptive studies a natural first step at this point in time.

The cross-sectional substudy (substudy II) provides a snapshot in time of differences in ER use between migrants and non-migrants. Time is, however, a valuable variable in migrant studies as an indicator of integration. A limitation of cross-sectional migrant studies is therefore that they do not offer information on changes over time. This may be remedied if the study is repeated over time in a homogeneous population. Alternatively, a time variable such as time since arrival can be included in the cross-sectional dataset. General advantages of the cross-sectional design are that it is inexpensive and feasible. Moreover, cross-sectional studies provide a good foundation for hypothesis building. Thus, the hypotheses of substudy III was derived from the results of substudy II. The retrospective cohort design (substudy I) implies that the investigator looks into the exposure records of individuals to form a historic cohort population. The occurrence of outcomes in the population is then investigated based on existing information, thus eliminating the necessity of a follow-up period, which is required for a prospective cohort study. Cohort studies are ideal in order to take time dimensions into account. It enables the researcher to follow events over time and therefore tends to be more oriented towards identifying causal mechanisms than cross-sectional studies. I tried to use this advantage of the

cohort design by exploring the effect of time of residence on tumor stage at diagnosis. The hypothesis was that there would be a time response curve implying that migrants initially would be diagnosed with more advanced diseases compared to later. Unfortunately, it was not possible to control for time trends in the final model of the study due to too small numbers. But in a series of subsequent studies on this cohort the intention is to try to explore the time dimensions when possible.

Initially, the wish was to design a prospective cohort study of migrants instead of a retrospective study. The idea was to include new migrants arriving in Denmark prospectively into the study cohort. But at this point in time the number of migrants entering Denmark yearly diminished dramatically and it would therefore be very time consuming to include sufficient individuals in the cohort necessary for statistical analyses. Sufficient numbers were, not least, needed, because migrants had to be subdivided into meaningful categories based on migrant status and ethnicity. Instead, I decided on a retrospective cohort design, which appeared better suited and feasible for the purpose. Sufficient individuals for analysis were obtained by including all refugees and family reunited individuals who obtained residence permit in Denmark from 1.1.1993-31.12.1999. The design implies that individuals have a different follow-up time, which makes analysis hereof somewhat more complex. Moreover, the seven-year inclusion period weakens the design because immigration policies may change over time. However, there is no reason to believe that this has affected the cohort at large as the recent restrictions on entry of migrants did not take effect until 2001.

The retrospective cohort study was time consuming to establish because of the two subsequent matching procedures. Moreover, data were obtained from six registers. It took time to obtain permission from the involved registers. Also, some dataset were incorrect when delivered and had missing variables so new outputs had to be obtained from these registers and rechecked. Additionally, new variables of interest had been identified during the work and were applied for. These procedures ended up taking much more time than intended and left only little time for analysis within the three-year timeframe of the PhD thesis. However, the cohort dataset can be used in its current form or with alterations for many years to come and for multiple purposes.

Register-based migrant studies have two fundamental methodological problems in common. Firstly, register-based studies depend on the availability of data. Registers and patient files on health and healthcare use in Denmark rarely include data on ethnicity and migration status. Registration is traditionally considered discriminatory and appears to be scarce or unsystematic in many European countries. An exception is Britain's National Health Service (NHS), which has systematically registered self-defined ethnicity since 1995. Consequently, Danish migrant researchers working with register data have to go through Statistics Denmark to obtain their migrant population, and then link their civil registration numbers to health registers of interest. Statistics Denmark is the main source of national population data for researchers, municipalities and other authorities in Denmark. They have data on country of birth of self as well as par-

ents, dates of emigration and immigration. Additionally, data on residence status (i.e. refugees versus family reunification etc.) became available in 2006. When the cross-sectional survey was designed we considered including country of origin only as a proxy of ethnicity. Since then, migration status has appeared increasingly important to include in migrant studies. Therefore we decided to include this variable in 2004 when the retrospective cohort was established. Data on migrant status was then registered only by the Danish Immigration Service. Uniquely, we obtained permission to use their internal statistical database to identify the cohort. The Danish Immigration Service had valid register data only from 1993 and onwards, which explains the start date of the cohort. Data include: residence status, country of birth of self as well as parents, entry dates (for asylum seekers) and date of residence permission.

In addition to lack of registration, there may be problems of differences in classification systems within a country and between countries resulting in difficulties when carrying out national as well as international comparisons. Also, lack of consistency in registration practices over time may impede comparisons.

Secondly, there are general problems in conducting epidemiological studies with migrants in small countries such as Denmark with relatively small migrant populations. Even for widespread chronic diseases, numbers are often small, which makes it difficult to detect significant associations from data. For example, the retrospective cohort with approximately 65,000 migrants resulted in 'only' 269 cancer cases which was insufficient to carry out more complex analysis using various confounding variables.

6.1.2 Discussion of the two survey-based studies

Substudies I and II are based on register data, whereas substudies III and IV are based on survey data. Substudy III is based on migrants' self-report of their reasons for visiting the ER. An advantage of self-report is that researchers are not dependent on available register data, but may define ethnicity and migrant status themselves as well as other variables of interest to migration and health. There are, however, several obstacles when surveying migrant populations in comparison with non-migrants. Firstly, there are problems of the cross-cultural validity. Cross-cultural validity implies that the questionnaire has to be understood by different cultural groups according to the intention of the researcher (174-176). Migrants have to be able to read the questionnaire and to understand its context and underlying concepts. Reading has to do with linguistic competences, which may especially be a problem of recent and older migrants, who may have little language proficiency apart from their mother tongue. Direct translation of questionnaires is, however, not sufficient in itself as this implies that questions appropriate for Danish speakers are applicable to other linguistic and sociocultural groups. Contextual matters are also of importance. They include among other things the organisation of the healthcare system. This kind of knowledge may explicitly or implicitly be included in questionnaires. Especially recent migrants may have a very different framework in mind for the delivery of healthcare services that refers to their country of origin. Conceptual matters also imply cultural bearing and the subtle connotation of

words and phrases. Thus, Hunt & Bhopal (174) report that: “The term ‘feeling blue’ used in the SF-36 has different connotations in different language; and the terms ‘check up’ and ‘pap smear’ do not exist in any Chinese languages”. In study III, we used one translation service to translate the questionnaire from Danish into the relevant languages and another to translate them back into Danish again. Moreover, we had opportunity to discuss the translations with both translators. Finally, it may be problematic to ensure a representative participation of migrants in self-report surveys (177). Low response rates may reflect different attitudes towards surveys among migrants. It is also likely that only the most well integrated migrants will participate. We were not able to study differences in response rates for migrants compared to non-migrants, because data were not available on ethnicity in the hospital register. However, underrepresentation of migrant populations has been observed in other studies (177), which may reduce the representativity of the studies. Response rates may be improved by keeping questionnaires short and linguistically simple.

Substudy IV is based on a questionnaire survey focusing on both formal and informal barriers to asylum seekers’ access to healthcare. Formal barriers refer to legal restrictions, information on which could possibly also have been obtained through an analysis of policy documents from the countries. However, policy documents are often not in English and it would have required a multitude of translators if the same number of countries had to be compared. Additionally, this approach would not have allowed us to study informal barriers simultaneously. However, using the survey method for this kind of information is also not ideal. The response rate and validity of the questionnaire may be affected by language barriers as the questionnaire was available only in English. In our analysis we decided to exclude countries with inconsistent answers regarding questions on formal barriers. Alternatively, one could have followed up with more specific questions to these respondents to understand inconsistencies better.

6.1.3 Challenges of measuring migration and ethnicity

A mutual problem of surveys and register-based studies within migration health is how migration and ethnicity should be measured. The concept of migration has, to date, only received scarce methodological consideration as an epidemiological variable. This is probably because migration appears as a more straightforward concept than ethnicity, but also because it has not been given the

same importance. The literature employs a number of different measures of migration, however, only Schenk et al. (25) have conceptually and practically developed a set of migration indicators. Besides catching whether a person is native or not the employed indicators generally attempt to capture either legal migration status or the adaptation process in the receiving country. Table 1 shows selected indicators of migration and ethnicity used in the literature. These measures overlap to a certain extent but are interpreted differently. Thus, in a migration perspective ‘country of birth’ defines whether one is a migrant or not, but in an ethnic perspective it concerns identity.

In contrast to migration the methodological challenges of measuring ethnicity have been intensely debated (38-45). I will mention two dimensions of this discussion below. Firstly, Bhopal (178) states that a problem of ethnicity in epidemiology is that the populations identified by current measures are often too heterogeneous to provide useful information. Bhopal (178) and others (40;43) therefore recommend that researchers should try to describe and categorise migrants in as much detail as possible to provide more profound insights. Moreover, data on age, sex and socioeconomic status should be included. However, broad categories containing heterogeneous populations often reflect pragmatic reasons. This was my experience working with the study populations from substudies I and III. Initially, I wished to differentiate into as many migrant groups as possible but unwillingly had to reduce them into broader categories to make

 TABLE 1

Selected measures of migration and ethnicity in the literature.

Indicators of migration	Indicators of ethnicity
Country of birth (1 st generation migrant)	Country of birth
Mother’s country of birth (2 nd generation migrant)	Mother’s country of birth
Father’s country of birth (2 nd generation migrant)	Father’s country of birth
Mother tongue	Mother tongue
Main language spoken at home	Main language spoken at home
Host language skills	Host language skills
Years since migration	Last name
Reason for obtaining residence status (Refugee; work; family reunification etc.)	Skin colour
Nature of residence status (Citizenship; irregular; temporary residence)	Self defined ethnicity

 TABLE 2

Indicators	Substudy I	Substudy II	Substudy III	Substudy IV	Measures of migration and ethnicity used in the PhD thesis.
Migration					
<i>Country of birth</i>	1 st generation migrants	1 st generation migrants	1 st and 2 nd generation migrants	–	
<i>Residence status</i>	Family reunification migrants; refugees	–	–	Asylum seekers	
Ethnicity					
<i>Country of birth</i>	Denmark; Middle East (incl. North Africa) and East Europe (incl. the Balkan)	Denmark; Turkey; Somalia; Iraq; Pakistan; Ex-Yugoslavia; Western; Rest of Europe; Other countries	Denmark; Western; Middle East; Other non-Western countries	–	

sound statistical analysis. This pragmatic reasoning has to be weighed carefully against the possibility of losing potentially important information and the risk of stereotyping migrants. Table 2 shows the migration and ethnicity categories used in this PhD thesis.

A second problem of measuring ethnicity is that of validity. As mentioned, voluntary self-definition is considered the gold standard today. However, this measure also implies problems.

Ideally, respondents categorise themselves freely; however, this would give rise to a myriad of small categories that would be of no practical use for researchers. Therefore self-definition is often based on a limited number of possible categories. Critics therefore claim that self-definition is also unreliable. In Denmark and most other European countries census data are still based on country of birth, which limits the use of self-definition in register studies. We tried to use self-definition of ethnicity in the pilot test of the survey of sub-study III but were interestingly limited by another reason. Ethnic Danes were confused because they did not perceive themselves as belonging to an ethnic category and consequently did not feel able to answer this question. Therefore, we used country of birth of respondents and parents.

6.2 DISCUSSION OF RESULTS

Substudy I and II identified disparities in realised access (see fig.1) between migrants and non-migrants. Disparities concerned differences in utilisation patterns and clinical outcomes. Substudy III and IV identified differences in potential access (see fig.1) between migrants and non-migrants. These reasons were related to informal and formal barriers to access.

6.2.1 Are there differences in migrants' access to healthcare compared to that of non-migrants?

Substudy I showed a tendency towards more advanced stage at diagnosis or unknown stage among migrant women with a history of cancer compared to that of non-migrant women. The results are supported by a previous Danish (117) and a Canadian study (118). Cancer stage is used as clinical indicator of access to services until the time of diagnosis. Severe disease at diagnosis is therefore interpreted as a result of a delay in access to care or as a result of access to inappropriate care. The use of clinical indicators is a relatively new way of approaching access problems. To date, the following clinical indicators have been used in relation to migrants: cancer stage at diagnosis (117;118;179-181), diabetic complications (119) and appendicitis rupture (182) as well as severity of infectious disease (120;123;183) and severity of mental disease on admission (113;114).

More severe stage of cancer disease at diagnosis may be explained in several ways. Differences in tumour biology between migrants and non-migrants could explain our results. Alternatively, late stage diagnosis among migrants could be caused by barriers in access to healthcare. The Danish healthcare system is a free-access system. Nevertheless, the literature documents that migrants' access may be affected by: language barriers (146;149;151;184), different cultural notions and practices regarding health (49;51;

52;165;166) and 'newness' (96). Poor use of preventive services have been shown for screening for breast- and cervical cancer (75-77;79;185;186), which may result in more advanced disease at diagnosis and consequent higher mortality. Other studies (187-189) have identified reasons behind lower screening uptake among migrants including: lack of comprehension of the concept of screening; organisational problems; inability to read the letter of invitation; resettlement rather than health promotion activities being a priority upon arrival; due to low incidences of cancer in native countries migrant women do not see themselves as susceptible to breast cancer. Similar reasons could explain our results.

We also analysed unknown versus known cancer stage upon finding a high number of unknown stages among migrants in our initial analysis. This problem does not seem to have been previously explored. Our results showed more unknown stage cancers among migrant women than among non-migrant women. Unknown stage is a combination of truly unknown stage cancers and staged cancers that are not reported to the Danish Cancer Registry. The distribution of these two categories among unknown stages in our material has not been explored. But it is likely that migrants have more truly unknown stages, because there is no reason to believe that missing reports on stage vary between migrants and non-migrants. We suggest three different explanations why truly unknown stages may be more prevalent among migrants. Firstly, we speculate that this may be the case if some late stage cancer patients are so ill upon diagnosis at an internal medical or surgical ward that they die before receiving proper work up at a specialised oncology ward. This interpretation implies that access to primary care has often not been optimal. Secondly, the higher number of unknown stages among migrants may be due to a quality of care problem in the clinical encounter between migrant patients and physicians, resulting in a decreased work up for migrant patients. This may again be due to linguistic and socio-cultural barriers on both sides. Thirdly, migrants may choose to return to their country of origin when receiving a diagnosis of cancer and therefore do not receive full work up. The first and second explanations imply that migrants have had suboptimal access to health services until diagnosis. This is related to the problem of differences in utilisation patterns, which is the theme of sub-study II.

Substudy II showed that some migrants (those born in Somalia, Turkey and Ex-Yugoslavia) used ER services more frequently compared to non-migrants whereas other migrants have the same or lower utilisation levels. Thus, the study highlights the importance of looking at each migrant group individually instead of gathering them into one heterogeneous group. Overutilisation of ER services by migrants has also been shown in other studies (97;98;190). Migrants, who used the ER more in our study constituted heterogeneous groups who differed geographically and culturally from one another. Also, they arrived in Denmark on various backgrounds and at very different points in time. Therefore 'newness' does not explain our results and as such it is difficult to point towards any common denominators for these groups related to the overuse of ER services. What may then explain our results? Firstly, unequal utilisation of services may be due to differences in morbidity between migrants

and non-migrants. Unfortunately, we could not control directly for health status because data were not available. However, by controlling for age, sex and income in the analyses we tried to take into account possible related variations in health. Secondly, overutilisation of ER services may be due to barriers in accessing primary care services for some migrants. Access barriers when seeking primary care include: language and communication problems with primary care providers (51;150;191) as well as 'newness'. To clarify reasons behind ER use, substudy III was undertaken, which supports the hypothesis that more migrants than non-migrants have communication and language problems in accessing primary care and therefore turn to the ER.

6.2.2. Why are there differences in migrants' access to healthcare compared to non-migrants?

Substudy III showed that more migrants had considered contacting a primary caregiver before visiting the ER than had non-migrants and that more migrants came to the ER because they could not get in contact with a primary caregiver. Also, mainly migrants had difficulties explaining their problem over the telephone to a primary caregiver. As a result of substudy II we anticipated differences between various migrant groups in their motivation for visiting the ER. In contrast, our findings were overall identical across regions of origin for migrants compared to non-migrants. Thus, migrants' motivation for seeking ER therefore seems to be related to migrant status rather than ethnicity as defined by region of origin as shown previously (98). Having Andersen's model (fig.1) in mind, these barriers may be related to the healthcare system or to population characteristics. Access will often be affected by a complex interaction between all these factors. Studies have already shown that language problems including lack of interpreters and communication barriers impede access to primary care as well as newness to the healthcare system (51;97;150). As mentioned in the introduction, asylum seekers use a parallel system of primary care services attached to the centres. Asylum seekers who obtain a residence permit, quota refugees and family reunification migrants are assigned a general practitioner when they register with the local municipalities upon receiving a residence permit, but there is no introduction by health authorities to (primary) healthcare services associated with this. Consequently, migrants have to rely on language schools, friends and families for this. Additionally, the National Board of Health has not provided general practitioners with guidelines on screening and the management of new arrivals, although it has been called for (192). Actually, little is known about the approach taken by primary caregivers towards new migrant patients.

Access to primary care could be facilitated if all newcomers were systematically introduced to the functions of the healthcare system in receiving countries. Substudy III also showed that caregivers evaluated more claims among migrants as irrelevant compared to those among non-migrants. The results contrast with a German study showing no differences in relevance of ER visits by migrant status (101). We attribute the higher percentage of irrelevant visits among migrants in our study to the fact that they experience more

barriers to access to primary care. To avoid irrelevant ER visits among migrants access to primary care should be facilitated as mentioned above. Another possible improvement could include more open hours in general practice to bypass the problems of telephone bookings or to make economic incentives for GPs to make more use of interpreters. A more radical reform would be to establish special primary care clinics open for direct access in the daytime in communities characterised by many migrants. Alternatively, primary care physicians could be employed in the ER.

Substudy IV addresses formal and informal barriers to access and screening. Legislative barriers are related to the environment in Andersen's model (fig.1.). According to the national legislation in the EU countries asylum seekers are entitled only to emergency care in 10 out of 24 countries. Access to care for failed asylum seekers was even more limited in some countries. But, why should asylum seekers have other rights to healthcare than other transients, for example tourists? I argue that asylum seekers form a more vulnerable population health-wise – a population that international societies have an obligation to protect. Secondly, asylum seekers are increasingly caught up in long asylum procedures under stressful living conditions, which additionally may result in increased risk of disease and consequent need of services. Thirdly, asylum seekers do not have other ways of obtaining access, such as insurance schemes. Therefore, one may argue that ensuring access to healthcare is especially important for this group compared to other transients, who may return to home countries for services. Based on the same arguments one may further reason that asylum seekers access should be similar to that of the general population if they stay in receiving countries for years.

On an EU level a 2003 directive to standardise the reception of asylum seekers affirms that member states, as a minimum, must offer emergency care to asylum seekers and treatment of essential illnesses. This may serve to heighten access in some countries, but may, conversely, lower access to healthcare for asylum seekers in others. Our results do not show if countries that offered access to only ER care also allowed for alternative measures in case of chronic illness.

This is the case in Denmark where migrants' access to healthcare in practice is broader than ER care. Red Cross doctors may apply to the Danish Immigration Services to get costs for treatment of chronic disease funded; and 83% of all applications regarding social- and healthcare were accepted in 2005 (193). Refusals mainly concern adult asylum seekers. Substudy IV also identified a number of practical barriers in accessing healthcare which are in accordance with the informal barriers discussed in more in detail in relation to substudies I-III.

The study, moreover, showed that most countries provide some sort of screening programmes to new arrivals. However, it is often only asylum seekers living in reception centres, who receive screening offers.

Additionally, the content of screening programmes for new arrivals varies between and within countries. The aims of screening programmes should be to assess health problems and promote mi-

grants' health. Moreover, they form a vital platform to ensure their access to preventive health services and to inform them about the healthcare services available to them.

6.3 GENERAL POLITICAL AND PRACTICAL IMPLICATIONS OF THE STUDY RESULTS

The introduction described the importance of migrants' access to healthcare from a moral and a pragmatic perspective. The findings of this thesis, however, suggest that even in countries such as Denmark with universal right to healthcare migrants fare less well than non-migrants in accessing health services. This conclusion represents a great challenge to policy makers and practitioners. To improve access to healthcare several dimensions consequently need to be addressed including: 1) entitlements, 2) health policies, 3) structure and organisations of services, and 4) the clinical encounter between healthcare professionals and migrants. Firstly, Denmark and all other European countries have signed international human rights documents that recognise the right for everyone to enjoy the highest attainable standard of health. Consequently, national law should ensure health as a human right to every member of society. Special attention should be taken to guarantee the entitlements of vulnerable migrants such as asylum seekers and irregular migrants, who do not have any legal status in most EU countries. The second step towards improving migrants' access to healthcare concerns health policy documents. Migrants' health and access to healthcare should be explicitly incorporated into health policy papers on regional, national and international/EU level including guidelines on how to overcome financial, geographical, language and cultural barriers in relation to migrants' access to healthcare. This is not always the case. For example, the Danish government's national health plan (194) for 2002-2010 includes only a few lines on 'ethnic minorities'; and neither problems of entitlements or access are mentioned in relation to migrants. From a public health perspective this is alarming. Thirdly, the structures of the healthcare system also have great implications for migrants' possibilities of accessing care. It must be considered whether established ways of delivering services meet the needs of the changing demographics in our societies. Healy & McKee (195) have outlined several delivery models in response to population diversity. These models may be divided into two overall approaches: 1) mainstream services for all or 2) separate services for mi-grants. Separate services imply a higher political profile, empowerment and more targeted services. In contrast the arguments for collective provision are that they are non-discriminatory and strengthen social solidarity in a society; and that alternative services will undermine the national healthcare system. According to McKee (196) the question of mainstream or specific services depends on the context. To date, the Danish healthcare system encourages migrants' integration into existing healthcare structures, while the focus on separate services has been downplayed. Furthermore, services need to be geographically accessible and sufficient in numbers. Increasing knowledge-related access is also important including systematic introduction to healthcare services. Linguistic-access can be promoted by ensuring an adequate number of professional interpreters and

bilingual staff, and that health education material and awareness campaigns are developed for specific ethnic and linguistic groups. Finally, it is important to optimise the clinical encounter between healthcare personnel and migrant patients. The literature shows that misunderstandings and unsatisfactory communication is prevalent and this hampers health outcomes. Healthcare staff may have strong stereotypical views, lack cultural awareness and ability, or generally manage patient from diverse background in an unsuitable manner, which can create barriers and generate resentment. This may be due to insecurity on the side of the healthcare staff. More consideration should therefore be given to developing cultural competence among health professionals through including a diversity focus in the curriculum of health education on various levels. Also, the number of multicultural staff should be increased by securing that migrants get access to healthcare education and professions, and by intensifying approval and/or up-qualification of migrants with health training from their home countries.

7 CONCLUSIONS

The thesis aimed to explore if there are differences in migrants' access to healthcare compared to non-migrants and why disparities may exist. Differences in utilisation and clinical outcome were identified between migrants and non-migrants. Reasons why disparities exist were also identified on policy level and in relation to characteristics of migrants and the healthcare system. The thesis shows that various perspectives and scientific problems are needed to get a full understanding of the process of access to healthcare for different migrant groups. Moreover, various methodological approaches are needed and may complement each other when studying problems of migrants' access to healthcare.

Research on migrants' health is still in its infancy. Indeed, there is yet no generally applied definition of this research field and the contents and ways of addressing problems vary with different country's migration history. To date, the focus has been on the role of ethnicity whereas migration as a determinant yet has to unfold itself. The framework for studying migrants' health has also been heterogeneous and often reflected the interest of individuals or groups. The main rooting has been within public health, social medicine and infectious diseases. It is hoped the future will envisage more structured, interdisciplinary research environments at hospitals and universities solely devoted to this area.

Future research need to focus on methodological developments. Among other things, researchers need to make useful and international standardised categories relating to ethnicity and migration. Moreover, data collection by register and survey need to include data on ethnicity and migration status. Research is still relevant within all areas of Andersen's model of access to healthcare and should focus both on basic research and applied research. However, this thesis highlights that special focus should be devoted to the entitlements of vulnerable migrants and to subjective and objective outcomes of realised access, which to date has been less explored compared to utilisation patterns. An innovative way of approaching migrants' health could be a whole system approach, which – in accordance

with Andersen's model – examines both indicators of potential and realised access in relation to well-defined groups of migrants or/and a well-defined disease category. This would render a fuller picture of how different factors related to access work together in determining migrants' access to healthcare.

8 SUMMARY

There are strong pragmatic and moral reasons for receiving societies to address access to healthcare for migrants. Receiving societies have a pragmatic interest in sustaining migrants' health to facilitate integration; they also have a moral obligation to ensure migrants' access to healthcare according to international human rights principles.

The intention of this thesis is to increase the understanding of migrants' access to healthcare by exploring two study aims: 1) Are there differences in migrants' access to healthcare compared to that of non-migrants? (substudy I and II); and 2) Why are there possible differences in migrants' access to healthcare compared to that of non-migrants? (substudy III and IV).

The thesis builds on different methodological approaches using both register-based retrospective cohort design, cross-sectional design and survey methods. Two different measures of access were used to explore differences: 1) cancer stage at diagnosis as a clinical outcome and 2) emergency room (ER) contacts as a utilisation measure. Both informal and formal barriers to access were studied to explore why possible differences existed including: 1) motivation for using ER; and 2) asylum seekers' healthcare entitlements. Different definitions of migration and ethnicity were investigated including: country of birth and residence status.

Substudy I showed a tendency towards more advanced stage at diagnosis or unknown stage among most subgroups of migrant women with a history of cancer compared to non-migrant women. Substudy II found that some migrants (those born in Somalia, Turkey and Ex-Yugoslavia) use ER services more frequently than do non-migrants whereas others have the same or lower utilisation levels. As a consequence, substudy III was undertaken, which documented that more migrant within all subgroups had considered contacting a primary caregiver before visiting the ER compared to non-migrants, but that migrants experienced communication problems herein. Additionally, more migrants had irrelevant ER visits as evaluated by caregivers. Substudy IV addressed formal and informal barriers to access and screening. According to the law asylum seekers are entitled to emergency care only in 10 out of 24 countries. Medical screening was carried out in all but one of the 24 EU countries; however, the content and extent of screening programmes vary.

The thesis aimed to explore if there are differences in migrants' access to healthcare compared to that of non-migrants. Differences in utilisation and clinical outcome were identified between migrants and non-migrants.

Reasons why disparities exist were also identified in relation to communication with primary care and on policy level. The thesis shows that various perspectives and scientific problems are important to get a full understanding of the process of access to healthcare for different migrant groups. Moreover, various complementary

methodological approaches are needed when studying problems of migrants' access to healthcare.

9 RESUMÉ PÅ DANSK

Migranternes adgang til sundhedsvæsenet er et vigtigt område at belyse ud fra et pragmatisk og et moralsk perspektiv. Pragmatisk set er migranternes sundhed fundamentalt for at fremme integration blandt andet i forhold til uddannelse og arbejde. Fra et moralsk synspunkt har vi som modtagerlande en forpligtelse til at sikre migranternes adgang til sundhedsvæsenet i henhold til internationale humanitære konventioner. Formålet med denne afhandling er at opnå en større forståelse for migranternes adgang til sundhedsvæsenet ved at belyse to grundlæggende spørgsmål: 1) Er der forskel på migranternes adgang til sundhedsvæsenet sammenlignet med resten af befolkningen? (substudie I og II); og 2) Hvorfor er der mulige forskelle på migranternes adgang til sundhedsvæsenet sammenlignet med resten af befolkningen (substudie III og IV)?

Afhandlingen benytter forskellige metoder herunder registerbaseret retrospektivt kohortdesign, tværsnitsdesign samt spørgeskemaer. Der er brugt to forskellige indikatorer til at måle om der var forskelle i adgangen: 1) ved kræftdiagnose som et klinisk mål; og 2) skadestuekontakter som mål for forbrug stadie. Både formelle og uformelle barrierer for adgang blev belyst for at forstå årsager til mulige forskelle i adgangen. Det drejede sig om: 1) årsager til henvendelse i skadestuer; samt 2) asylansøgere's rettigheder på sundhedsområdet. Forskellige mål for migration og etnicitet blev studeret herunder: geografisk oprindelse samt opholdsstatus.

Substudie I viste, at migrantkvinder på tværs af oprindelsesland og opholdsstatus havde tendens til senere kræftstadium ved diagnose eller ukendt stadium i forhold til danskfødte kvinder. Substudie II fandt, at migranter fra Somalia, Tyrkiet og Eks-Jugoslavien brugte skadestuen i højere grad end danskfødte; hvorimod andre migrantgrupper brugte skadestuen i samme eller mindre grad. Som en konsekvens heraf blev substudie III udført. Studiet viste at migranter på tværs af geografisk oprindelse i højere grad forsøgte at kontakte egen læge eller vagtlæge, inden de benyttede skadestuen, men at de oplever kommunikationsproblemer i den forbindelse. Desuden vurderede skadestuepersonalet, at migranter i højere grad kom med klager, der var irrelevante i skadestuer. Substudie IV viste, at asylansøgere er udsat for både formelle og uformelle barrierer i adgangen til generelle sundhedsydelser i mange EU-lande, herunder Danmark. Desuden blev det vist, at medicinsk screening finder sted i de fleste EU-lande, men at indholdet varierer, samt at det fortrinsvis er asylansøgere i modtagelsescentre, der tilbydes screening.

Ud fra afhandlingen kan det konkluderes, at der er forskelle i migranternes adgang til sundhedsydelser. Forskelle blev fundet både i relation til sygdomsgrad ved diagnose og forbrugsmønstre. Forskelle kan opstå på grund af uformelle barrierer i adgangen blandt andet i form af kommunikationsbarrierer samt formelle barrierer i form af begrænsede rettigheder på sundhedsområdet.

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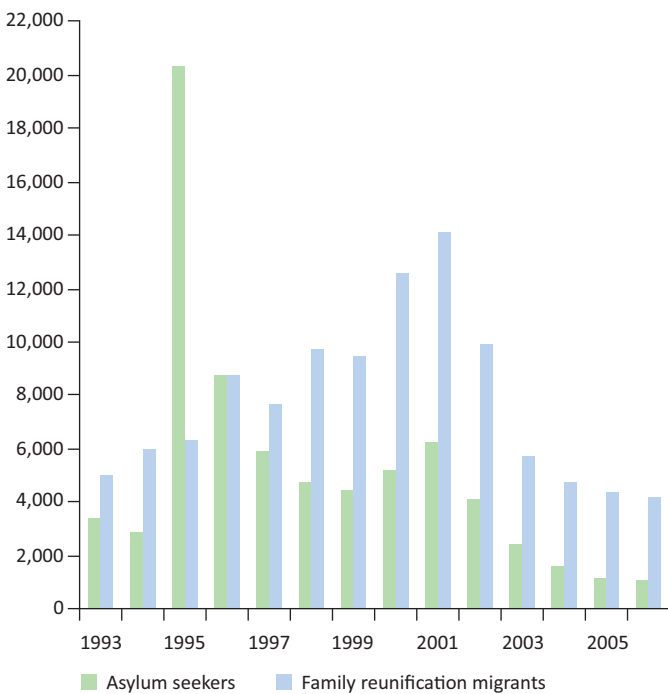
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12 LIST OF APPENDICES

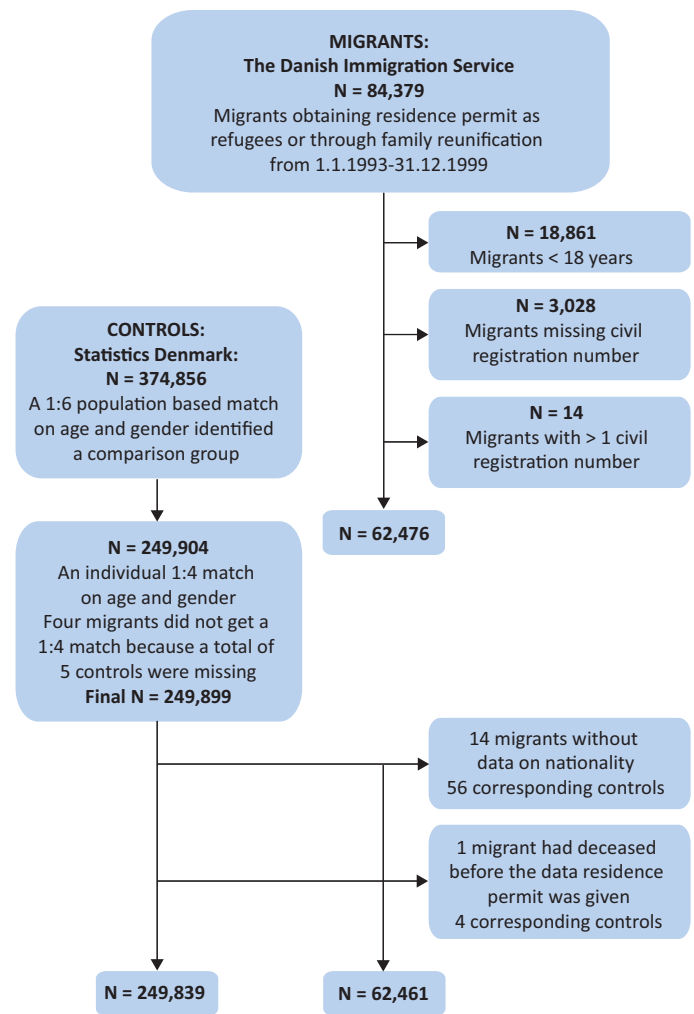
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12.1 APPENDIX I: RECOGNITION RATES FOR RESIDENCE PERMITS AMONG MIGRANTS FROM 1993-2006



12.2 APPENDIX II: SELECTION OF THE COHORT FOR SUBSTUDY I



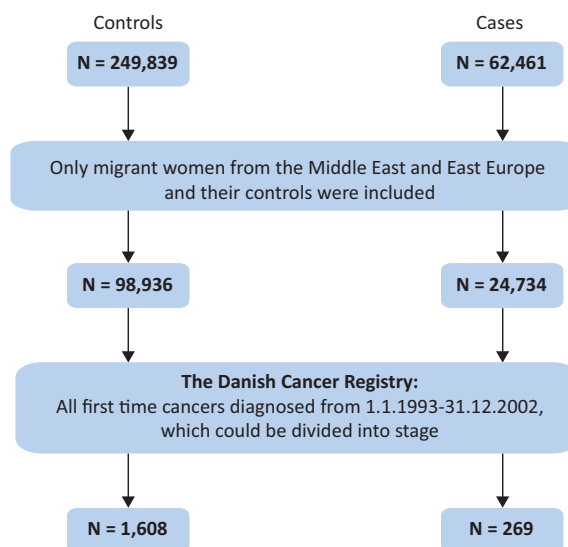


12.3 APPENDIX III: CHARACTERISTICS OF THE COHORT OF SUBSTUDY I

Population characteristics	Refugees N = 29,174		Non-migrants N = 116,696		Family reunited N = 33,287		Non-migrants N = 133,143	
Age in years (mean and quartiles)	32.9 (26.4; 41.7)		32.9 (26.4; 41.7)		27.5 (23.2; 33.7)		27.5 (23.2; 33.7)	
Follow-up (mean and quartiles)	8.0 (6.1; 8.4)		8.1 (6.5; 8.4)		6.1 (4.5; 8.0)		6.5 (5.1; 8.3)	
Sex	%	(n)	%	(n)	%	(n)	%	(n)
Female	44.4	(12,949)	44.4	(51,796)	64.0	(21,294)	64.0	(85,174)
Geographical origin	%	(n)	%	(n)	%	(n)	%	(n)
Denmark			116,696				133,143	
Asia	2.6 (747)	(747)			17.9	(5,951)		
East Europe (excl. Ex-Yugo)	1.9	(555)			10.8	(3,581)		
Ex-Yugoslavia	52.7	(15,369)			5.7	(1,894)		
Iraq	15.8	(4,618)			4.1	(1,365)		
Middle East	10.1	(2,954)			27.7	(9,228)		
North Africa	15.0	(4,366)			9.5	(3,148)		
Sub-Saharan Africa	1.8	(530)			5.9	(1,967)		
Western	0.1	(35)			18.4	(6,153)		
Total	100.0	(29,174)			100.0	(33,287)		
Follow-up events	%	(n)	%	(n)	%	(n)	%	(n)
Deaths	2.6	(761)	3.0	(3,578)	0.8	(270)	1.5	(2,019)
Emigrations	9.6	(2,785)	3.4	(3,933)	18.6	(6,182)	4.4	(5,893)
Population at study closure	87.8	(25,628)	93.6	(109,185)	80.6	(26,835)	94.1	(125,231)
Total	100.0	(29,174)	100.0	(116,696)	100.0	(33,287)	100.0	(133,143)



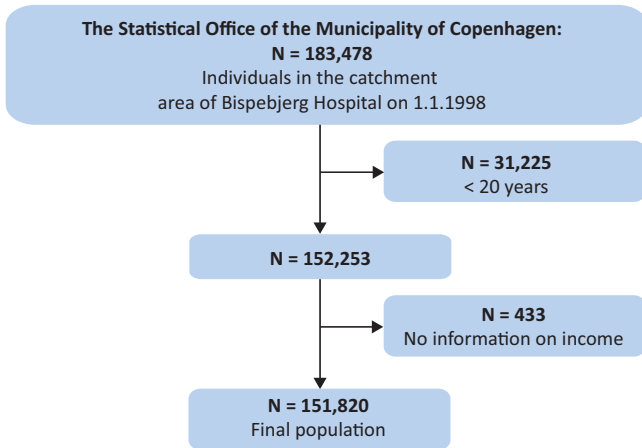
12.4 APPENDIX IV: SELECTION OF CANCER CASES AND CONTROLS FOR SUBSTUDY I



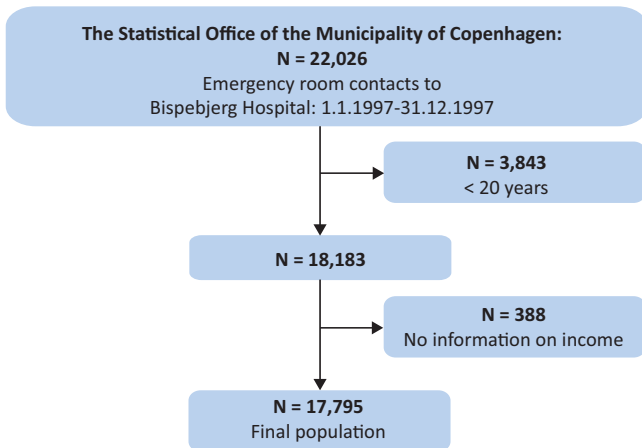


12.5 APPENDIX V: SELECTION OF THE STUDY POPULATION AND CONTACTS FOR SUBSTUDY II

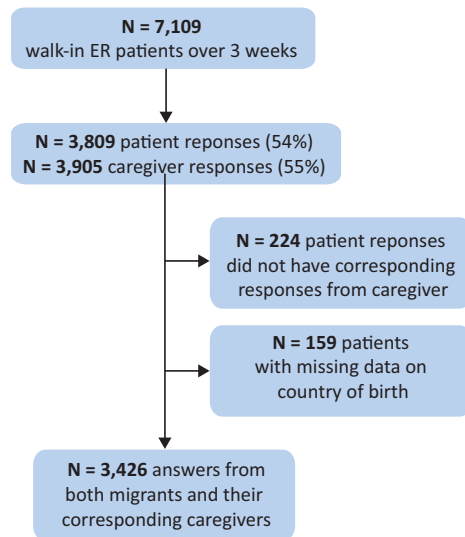
STUDY POPULATION



EMERGENCY ROOM CONTACTS



12.6 APPENDIX VI: RESPONSE RATES IN SUBSTUDY III



20061

**University of Copenhagen
Institute of Public Health**

Engelsk

DEPARTMENT OF HEALTH SERVICES RESEARCH

Parum building 42, Blegdamsvej 3, 2200 Copenhagen N.
Phone: 35 32 79 61. Fax: 35 32 76 29

To be filled in by the University:

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Dear Emergency Room Patient.

The Capital's four emergency rooms are carrying out a survey of the reasons why citizens refer to the emergency room and their experience with the assistance they receive. The survey is carried out in co-operation with the Institute of Public Health at the University of Copenhagen.

We will therefore ask for your help to complete the questionnaire on the following pages.

1. Before your examination, we ask you to complete pages 1, 2, and 3,
2. Just before you leave the emergency room, please complete page 4 (back page) - and
3. Submit the questionnaire to the secretary.

In some cases the patient may not be able to complete the questionnaire him or her self - this for instance applies to small children. In this case the accompanying person may fill out the form on behalf of the patient.

It is voluntary to participate, and you can at any time change your mind. But if you complete the questionnaire, we can gain more knowledge, on how the emergency rooms in Copenhagen function, and their possibilities for improvement. Your participation has no influence on your examination and treatment at the emergency room.

Your answers are anonymous, and further analyses will take place without the identification of individual persons. The project is reported to the Data Inspection, which has stipulated further conditions for the protection of the participants' privacy.

Thank you in advance for your participation.

On behalf of the research team,



Jens Bagger, consultant



Allan Krasnik, professor

To be completed before the examination

1	Sex: <input type="checkbox"/> Female <input type="checkbox"/> Male	Age: <input type="text"/>
2	Country of Birth:	
3	Mother's country of Birth:	
4	Father's country of Birth:	

5	School education (cross one answer)			
	<input type="checkbox"/> 7 years or less	<input type="checkbox"/> 8-9 years	<input type="checkbox"/> 10 years or more	
6	Higher education (cross the highest)			
	<input type="checkbox"/> No higher education	<input type="checkbox"/> Short Education (under 3 years)	<input type="checkbox"/> Medium long education (3-4 years)	<input type="checkbox"/> Long advanced education (more than 4 years)
7	Yearly Gross Income (before tax) (cross where appropriate)			
	<input type="checkbox"/> Less than 100.000 kr.	<input type="checkbox"/> 100.000 – 300.000 kr.	<input type="checkbox"/> More than 300.000 kr.	
8	Time of inquiry (cross the appropriate answer)			
	<input type="checkbox"/> Weekend (Friday after 16:00 to Monday morning 08:00)	<input type="checkbox"/> Weekdays daily hours (from 08:00 to 16.00)	<input type="checkbox"/> Weekdays evening- and night hours (from 16:00 to 08:00 in the morning)	
9	You mean you needed (cross one answer)			
	<input type="checkbox"/> Quick assistance (within 1 hour)	<input type="checkbox"/> Relatively quick assistance (within 1-6 hours)	<input type="checkbox"/> Help within ap. 1 day (6-24 hours)	
10	What is the important reason that you are at the casualty department (cross one answer)			
	<input type="checkbox"/> I could not come in contact with my own doctor/doctor on duty <input type="checkbox"/> Casualty department can best deal with my problem <input type="checkbox"/> My doctor asked me to go to the casualty department <input type="checkbox"/> Doctor on duty asked me to go to the casualty department <input type="checkbox"/> Other health officer (For eg. School doctor) asked me to go to the casualty department.			

11

Did you consider contacting your own doctor instead of the emergency room?		
<input type="checkbox"/> No	<input type="checkbox"/> Yes	
If yes, why did you choose the emergency room (mark every alternative statement with an X)?		
	It was difficult to get in touch with my doctor	<input type="checkbox"/> yes <input type="checkbox"/> no
	It would take a long time to get an appointment	<input type="checkbox"/> yes <input type="checkbox"/> no
	My doctor's opening hours are not suitable	<input type="checkbox"/> yes <input type="checkbox"/> no
	The emergency room is closer than my doctor	<input type="checkbox"/> yes <input type="checkbox"/> no
	The emergency room can deal with my problem better than my doctor	<input type="checkbox"/> yes <input type="checkbox"/> no

12

Did you consider getting in touch with the emergency call service instead of the emergency room?		
<input type="checkbox"/> No	<input type="checkbox"/> Yes	
If yes, why did you choose the emergency room (mark every alternative statement with an X)?		
	It was difficult to get in touch with the emergency call service	<input type="checkbox"/> yes <input type="checkbox"/> no
	The waiting time at the emergency call service was too long	<input type="checkbox"/> yes <input type="checkbox"/> no
	The emergency room can deal with the problem better than the emergency call service	<input type="checkbox"/> yes <input type="checkbox"/> no

13

Are there other reasons why you referred to the emergency room?		
	I generally prefer the emergency room	<input type="checkbox"/> yes <input type="checkbox"/> no
	It was difficult for me to explain my problem on the telephone	<input type="checkbox"/> yes <input type="checkbox"/> no
	I live outside Copenhagen, but I need help here	<input type="checkbox"/> yes <input type="checkbox"/> no
	The emergency room gives better opportunity for specialist treatment	<input type="checkbox"/> yes <input type="checkbox"/> no
Other reasons, write which:		

To be completed after the examination

		Very good	Good	Inter-mediate	Poor	Very poor
1	All in all, how do you think that the emergency room took care of you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Did the staff understand your problem thoroughly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	How did the staff inform you about your injury/sickness?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	How did the staff explain the examinations that took place?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	How did the staff explain to you the further course after your visit to the emergency room?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6	How long did you have to wait in the emergency room before getting help?	<input type="checkbox"/> Less than half an hour	<input type="checkbox"/> Half an hour to an hour	<input type="checkbox"/> One to two hours	<input type="checkbox"/> Two to three hours	<input type="checkbox"/> More than three hours
7	Do you think, you were sufficiently examined?	<input type="checkbox"/> Yes <input type="checkbox"/> No				
8	Did the staff generally show regard for you as a person?	<input type="checkbox"/> Yes <input type="checkbox"/> No				
9	All in all, what do you think about the contact with the emergency room?	<input type="checkbox"/> Very good	<input type="checkbox"/> Good	<input type="checkbox"/> Intermediate	<input type="checkbox"/> Poor	<input type="checkbox"/> Very poor
10	Did you use a professional translator at the emergency room?	<input type="checkbox"/> Yes <input type="checkbox"/> No				
11	Did you use a family member or a friend as translator at the emergency room?	<input type="checkbox"/> Yes <input type="checkbox"/> No				

Københavns Universitet
Institut for folkesundhedsvidenskab

Afdeling for Sundhedstjenesteforskning

Panum bygning 42, Blegdamsvej 3, 2200 København N.
Telefon 35 32 79 61. Fax 35 32 76 29.

Spørgeskema om relevansen af patienters henvendelsesårsag i skadestuen
Udfyldes af den behandlingsansvarlige efter at patienten er afsluttet

1	Er du (sæt kryds udfor ét svar):				
	<input type="checkbox"/> Turnuslæge	<input type="checkbox"/> Introduktionslæge	<input type="checkbox"/> Kursusreservelæge		
	<input type="checkbox"/> Bloklæge	<input type="checkbox"/> Speciallæge	<input type="checkbox"/> Behandlersygeplejerske		
2	Er du	<input type="checkbox"/> Kvinde	<input type="checkbox"/> Mand	Alder:	____
3	Var henvendelse til sundhedsvæsenet relevant?				
	<input type="checkbox"/> Nej	<input type="checkbox"/> Ja			
	Hvis Ja, var henvendelse i skadestuerégi da relevant?		<input type="checkbox"/> Ja	<input type="checkbox"/> Nej	
	Kunne patienten i stedet have henvendt sig hos:				
	Lægevagten	<input type="checkbox"/> Ja	<input type="checkbox"/> Nej		
	Egen læge	<input type="checkbox"/> Ja	<input type="checkbox"/> Nej		
	Anden behandler (fx tandlæge eller ambulatorium)	<input type="checkbox"/> Ja	<input type="checkbox"/> Nej		
	Hvis Ja, hos hvem:				
4	Hvordan synes du samlet set at kontakten med patienten forløb?				
	<input type="checkbox"/> Virkelig godt	<input type="checkbox"/> Godt	<input type="checkbox"/> Nogenlunde	<input type="checkbox"/> Dårligt	<input type="checkbox"/> Meget dårligt
5	Patienten afsluttes til (sæt kryds udfor ét svar):				
	<input type="checkbox"/> Indlæggelse	<input type="checkbox"/> Anden afdeling/sundhedsfaglig instans (fx ørelægevagt, øjenafdeling)	<input type="checkbox"/> Eget hjem		
6	Hoveddiagnose (ICD-10 Diagnosekode): _____				

<p>3. Does access to health care for asylum seekers change legally over time after the arrival to your country (check X)?</p> <p style="text-align: center;">If <u>YES</u>:</p>	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Pregnant women YES <input type="checkbox"/> NO <input type="checkbox"/></td> <td style="text-align: center;">Children YES <input type="checkbox"/> NO <input type="checkbox"/></td> <td style="text-align: center;">Adults YES <input type="checkbox"/> NO <input type="checkbox"/></td> </tr> </table> <p>When and how does it change (please describe)?</p>	Pregnant women YES <input type="checkbox"/> NO <input type="checkbox"/>	Children YES <input type="checkbox"/> NO <input type="checkbox"/>	Adults YES <input type="checkbox"/> NO <input type="checkbox"/>	
Pregnant women YES <input type="checkbox"/> NO <input type="checkbox"/>	Children YES <input type="checkbox"/> NO <input type="checkbox"/>	Adults YES <input type="checkbox"/> NO <input type="checkbox"/>			
<p>4. Does access to specialised treatment exist for traumatised asylum seekers?</p> <p style="text-align: center;">If <u>YES</u>, who finances it (if relevant, check more than one X)?</p>	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">YES <input type="checkbox"/> NO <input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">NGOs <input type="checkbox"/></td> <td style="text-align: center;">Public Authorities/Government <input type="checkbox"/></td> </tr> </table> </td> </tr> </table>	YES <input type="checkbox"/> NO <input type="checkbox"/>	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">NGOs <input type="checkbox"/></td> <td style="text-align: center;">Public Authorities/Government <input type="checkbox"/></td> </tr> </table>	NGOs <input type="checkbox"/>	Public Authorities/Government <input type="checkbox"/>
YES <input type="checkbox"/> NO <input type="checkbox"/>					
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NGOs <input type="checkbox"/>	Public Authorities/Government <input type="checkbox"/>				

B. The following questions concern national screening programmes for asylum seekers:

<p>5. Do the national authorities in your country provide medical screening of asylum seekers (check X)?</p> <p style="text-align: center;">Tuberculosis</p> <p style="text-align: center;">HIV</p> <p style="text-align: center;">Others</p>	<p style="text-align: center;">YES, voluntary</p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;">- which:</p>	<p style="text-align: center;">YES, compulsory</p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;">- which:</p>	<p style="text-align: center;">NO</p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;">- which:</p>
<p>6. Do the national authorities provide general health exams / interviews of asylum seekers (check X)?</p> <p style="text-align: center;">Physical</p> <p style="text-align: center;">Mental</p>	<p style="text-align: center;">YES, voluntary</p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p>	<p style="text-align: center;">YES, compulsory</p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p>	<p style="text-align: center;">NO</p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p>

<p>7. Are special screening programmes provided for any <u>SELECTED GROUPS</u> of asylum seekers ?</p> <p style="text-align: right;">If <u>YES</u>:</p>	<p>YES <input type="checkbox"/> NO <input type="checkbox"/></p> <p>Please describe:</p>
<p>8. Who finances the medical screenings (if relevant, check more than one X)?</p>	<p style="text-align: center;">NGOs <input type="checkbox"/></p> <p style="text-align: right;">Public Authorities/Government <input type="checkbox"/></p>
<p>9. Who carries out the medical screenings (if relevant, check more than one X)?</p>	<p style="text-align: center;">NGOs <input type="checkbox"/></p> <p style="text-align: right;">Public Authorities/Government <input type="checkbox"/></p>

C. This question concerns possible regional variations in the provision of screening:

<p>10. Are there any regional variations or restrictions in the provision of screening within your country?</p> <p style="text-align: right;">If <u>YES</u>:</p>	<p>YES <input type="checkbox"/> NO <input type="checkbox"/></p> <p>Please describe:</p>
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<p>What is the name of your organisation/institution? _____</p> <p>In which country does your organisation/institution reside? _____</p>
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Thank you for your valuable co-operation! If you have questions or further comments, please feel free to contact project co-ordinator Marie Norredam, e-mail: M.Norredam@pubhealth.ku.dk.

12.10 APPENDIX X: ARTICLES OF SUBSTUDIES I-IV

SUBSTUDY I 36

Norredam M, Krasnik A, Pipper C, Keiding N. Differences in stage of disease between migrant women and native Danish women diagnosed with cancer: results from a population-based cohort study. Accepted for print in July 2007 by the Eur J Cancer Prev.

SUBSTUDY II 42

Norredam M, Krasnik A, Moller Sorensen T, Keiding N, Joost Michaelsen J, Sonne Nielsen A. Emergency room utilization in Copenhagen: a comparison of immigrant groups and Danish-born residents. Scand J Public Health 2004;32(1):53-9.

SUBSTUDY III 49

Norredam M, Mygind A, Sonne Nielsen A, Bagger J, Krasnik A. Motivation and relevance of emergency room visits among immigrants and patients of Danish origin. Eur J Public Health 2007 Oct;17(5):497-502. Epub 2007 Jan 27.

SUBSTUDY IV 55

Norredam M, Mygind A, Krasnik A. Access to health care for asylum seekers in the European Union – a comparative study of country policies. Eur J Public Health 2006 Jun;16(3):285-89. Epub 2005 Oct 17.

Differences in stage of disease between migrant women and native Danish women diagnosed with cancer: results from a population-based cohort study

Marie Norredam, Allan Krasnik, Christian Pippert and Niels Keiding

The aim of the study is to compare differences in cancer stage at diagnosis between migrant women and native Danish women. The stage is used as a clinical indicator of access to healthcare until the point of diagnosis. Refugees and family reunited migrants who received residence permits in Denmark from 1 January 1993 to 31 December 1999 were included and matched 1:4 on age and sex with a Danish-born reference population. Our final female population included 24 734 migrants and 123 670 controls. Civil registration numbers of the cohort were linked to the Danish Cancer Registry whereby cases were identified in the period 1.1.1993–31.12.2002. Only women from Eastern Europe and the Middle East were included. This amounted to 269 migrants and 1608 native Danes. Data from the Danish Cancer Registry included diagnosis, time of diagnosis and disease stage at diagnosis. Our initial analyses of migrant subgroups showed that migrant women had decreased odds ratios of being diagnosed at the local stage and increased odds of having unknown stage, although these tendencies were mainly not statistically significant. A subsequent analysis of an overall migrant effect on all cancer sites emphasized these tendencies. This analysis reached borderline significance

for local versus nonlocal stage and significance for unknown versus known stage. Our results indicate that migrant women may experience barriers in access to healthcare until cancer diagnosis compared with Danish women. More research is, however, needed to confirm our results and to find out if they indicate general problems concerning migrants' access to healthcare in Denmark. *European Journal of Cancer Prevention* 17:185–190 © 2008 Wolters Kluwer Health | Lippincott Williams & Wilkins.

European Journal of Cancer Prevention 2008, 17:185–190

Keywords: access, diagnosis, migrants, neoplasms, prevention, refugees

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Introduction

By 1 January 2006, the number of first generation migrants in Denmark amounted to 353 567 corresponding to 6.5% of the population (Statistics Denmark, 2006). The majority of these migrants were born in non-Western countries, and since the early 1990s they have mainly come to Denmark as asylum seekers, quota refugees or through family reunification. Migrants' health is an emerging field of research in Denmark prompted by clinical and public health needs. Migrants' access to healthcare is an area of special interest, because 'equity in access when equal needs' and 'the minimizing of differences in health' are cornerstones in the free-access Danish healthcare system (Whitehead, 2000). Ensuring these principles for migrants, however, poses new challenges to the Danish healthcare system, and studies are needed to illuminate potential problems. We studied a population-based cohort of migrant women with cancer to compare differences in stage at diagnosis with a matched cohort of native Danish women with cancer. Disease stage at diagnosis was used as a clinical indicator of women's access to healthcare until the point of

diagnosis. Our hypothesis was that migrant women were less frequently diagnosed with local disease compared with native Danish women due to barriers in access to healthcare.

Few data are available about chronic diseases among migrants in Denmark including cancer. Preliminary data among first generation migrants in Denmark indicate that the overall incidence of cancer is lower compared with native Danes (unpublished data). Studies from Britain and the United States have likewise shown lower overall incidence rates among migrants compared with native populations (Winter et al., 1999; Luo et al., 2004; Yavari et al., 2006). The risk of cancer among migrants, however, tends to grow toward the risk of the host population over time (Au et al., 2004; Luo et al., 2004; Yavari et al., 2006). The stage at diagnosis is an important prognostic factor for most cancers. An earlier stage at diagnosis is associated with improved survival. Therefore, it is important to identify factors related to stage at diagnosis. Earlier studies investigating minority populations and cancer stage at diagnosis showed that non-White ethnicity was

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associated with an increased risk of late stage cancer (Wells and Horm, 1992; Hedeem et al., 1999; Oakley-Girvan et al., 2003; Schwartz et al., 2003; Fazio et al., 2005). This was attributed to more barriers in access to healthcare for minorities. Most studies, however, originate from the US where the history and composition of minority groups differ from that of European minority groups and where the healthcare systems differ from that of a free-access setting like the Danish.

Methods

Study cohort

The cohort was established to be able to study disease patterns and access to healthcare among migrants compared with native Danes. The cohort was obtained through the Statistical Department at The Danish Immigration Service. Migrants who obtained residence permit as refugees or through family reunification in Denmark from 1 January 1993 to 31 December 1999 were included. In total 84 379 individuals were identified in this period. Individuals who were less than 18 years of age ($n = 18 861$) when they obtained residence permit were excluded. Another 3042 individuals were excluded owing to missing civil registration number or because their civil registration numbers appeared more than once in the sample. The study population then amounted to 62 476 individuals.

Our reference population was identified through Statistics Denmark (SD). SD performed a 1 : 6 matching on age and sex at population level. Moreover, all controls were Danish-born residents with Danish-born parents to avoid including second-generation migrants. Controls were only used once. Data from SD included: socioeconomic information, date of death and dates of emigrations. We then matched 1 : 4 on an individual level on age and sex through a random sampling procedure. This was done so as to identify which migrant every single control belonged to. In total, we were able to make a 1 : 4 matching except for four migrants, where a total of five controls were missing. The reason why we were not able to identify all controls for these migrants was that possible controls had died within the year, before the migrant got residence permit. This was especially true for elderly controls and for controls whose case received a resident permit at the end of the year. In total, 249 899 controls were identified. During our subsequent analyses of the cohort, we found that 14 migrants had unclear or missing data on nationality. All cases and their corresponding controls were excluded. Additionally, one migrant and the corresponding four controls were excluded, because the date of death was 1 year before the date of residence permit was given. This reduced our final population to 62 461 cases and 249 839 controls.

Cancer cohort

We decided only to present the results of the female cancer cohort, because more cases were available for

female cancer types enabling more substantial analyses of this group. Second, female malignancies like breast cancer and gynaecological cancers have very valid stage divisions. Only women from Eastern Europe (including the Balkans) and Middle East (including North Africa) were included. Our definition of region of origin was based on nationality and defined according to WHO's classification system (WHO, 2003). The study cohort comprised 123 670 women of whom 24 734 were migrants. The civil registration numbers of the study cohort were linked to The Danish Cancer Registry, which was updated until 2002. Thus, all women in the cohort diagnosed with cancer from 1993 to 2002 were identified. Only first diagnosis cancers in Denmark were included and only those cancer types that could be categorized according to stage distribution. The final cancer cohort amounted to 269 cases and 1608 controls. Demographic characteristics of the cohort are shown in Table 1. Data from The Danish Cancer Registry included: diagnosis, time of diagnosis and disease stage at diagnosis.

Cancer stage information

Stage at diagnosis is based on the diagnosis information from the clinical records, which is reported to the Danish Cancer Registry. As described in earlier studies of different cancer types (Oakley-Girvan et al., 2003; Fazio

Table 1 Characteristics of first cancer diagnoses within the female cancer cohort

Patient characteristics	N	%
Country of origin and migrant status		
Denmark	1608	85.7
Refugees		
Eastern Europe including Balkan refugees	167	8.9
Middle East including North Africa family reunited	34	1.8
Eastern Europe including Balkan family reunited	35	1.9
Middle East including North Africa	33	1.8
Total	1877	100.0
Mean age at diagnosis	Years	
Danish-born	54.18	
Migrants	52.43	
Total	53.93	
Time since migration (migrants)		
0 years	43 cases	16.0
1 year	32 cases	11.9
2 years	42 cases	15.6
3 years	36 cases	13.4
4 years	31 cases	11.5
5 years	27 cases	10.0
6 years	30 cases	11.2
Z 7 years	28 cases	10.4
Total	269 cases	100.0
Diagnosis of first cancer		
Buccal cavity and pharynx	24	1.3
Digestive organs and peritoneum	279	14.9
Respiratory system	215	11.5
Female genital organs	312	16.6
Breast	667	35.5
Urinary system	65	3.5
Other specified sites	179	9.5
Lymphatic/haemopoietic tissue	136	7.2
Total	1877	100.0

et al., 2005), we classified tumours as local, nonlocal and unknown. We analysed the following two binary outcomes: (i) local (disease confined to the tissue of the primary site) versus nonlocal (regional or distant extension of malignancy); and (ii) unknown versus known (local or nonlocal) disease at diagnosis. Unknown cases were excluded from the analysis of local versus nonlocal stage, because we did not have any knowledge or indicators of the actual stage distribution among unknown cases. Initially, we analysed breast cancer and gynaecological cancers (c.ovary, c.uteri, c.cervix combined). Finally, we combined all first diagnosed cancers in the cohort with data on disease stage into one group ('all sites'), including: buccal cavity and pharynx, digestive organs and peritoneum, respiratory system, breast, female genital organs, urinary system, lymphatic and haematopoietic tissue and 'other specified sites'. This was done to identify an overall effect on cancer stage distribution (Table 2).

Statistical analyses

The matching procedure enabled us to subdivide matched native Danes according to migrant traits (migration status and region of origin), which were used in the descriptive analyses. This facilitated separate comparisons between well-defined migrant subgroups and their matched native Danes. The same idea was pursued in the final analysis. Migrants were divided into four subgroups: (i) refugees from Eastern Europe; (ii) family reunited from Eastern Europe; (iii) refugees from the Middle East; and (iv) family reunited from the

Middle East. Migrants were analysed according to these four subgroups when possible (Table 3) and collectively in the overall analysis (Table 4). The basic confounder was age. For specific cancers (breast cancer and gynaecological cancers), age was grouped into: less than 50 and \geq 50 years. For 'all sites', we were able to group into five age categories: less than 40; 40–49; 50–59; 60–69 and \geq 70 years. Owing to low cell counts, it was not possible to include the potential risk factor time since immigration at diagnosis in the statistical analyses.

Odds of local versus nonlocal stages and known versus unknown were estimated by logistic regression using PROC GENMOD in SAS version 8 (Stokes et al., 1995). In analyses of the selected specific cancer types, odds ratios for migrant subgroups compared with native Danes were adjusted for the matching procedure and age grouped as above. For first diagnosis of relevant cancers, odds ratios for migrant subgroups compared with native Danes were adjusted for matching procedure, age grouped as above, and cancer type at first diagnosis in accordance with the previous section. Ninety-five percent confidence intervals were calculated using Wald 95% confidence intervals for log (odds ratios). Model reduction was based on Likelihood Ratio tests using a 5% significance level.

Results

Table 2 shows the overall distribution of stage of disease by cancer site for migrants versus native Danes. Percentage-wise, fewer migrant women were diagnosed

Table 2 The overall distribution of stage of disease (local, nonlocal and unknown) by cancer site for migrant women compared with native Danish women

Cancer site	Local		Nonlocal		Unknown		Total	
	Migrants, % (n)	Danish born, % (n)	Migrants, % (n)	Danish born, % (n)	Migrants, % (n)	Danish born, % (n)	Migrants, % (n)	Danish born, % (n)
Breast cancer	36 (28)	46 (271)	53 (42)	47 (283)	11 (9)	7 (42)	100 (79)	100 (596)
Gynaecological cancers ^a	50 (26)	51 (135)	40 (21)	41 (106)	10 (5)	8 (21)	100 (52)	100 (262)
All cancer sites ^b	37 (101)	44 (703)	46 (124)	45 (729)	17 (44)	11 (176)	100 (269)	100 (1608)

^aGynaecological cancers include c.cervix, c.uteri and c.ovaries.

^bAll sites include all cancer sites where information stage was available: buccal cavity and pharynx, digestive organs and peritoneum, respiratory system, breast, female genital organs, urinary system, lymphatic and hematopoietic tissue and other specified sites.

Table 3 Odds ratios for local versus nonlocal stage and unknown versus known for migrant women compared with native Danish women; adjusted for match and age and distributed by cancer sites

Region of origin	Migrant status	Breast cancer		Gynaecological Cancers ^a		All cancer sites ^b	
		OR local vs nonlocal (95% CI)	OR unknown vs known (95% CI)	OR local vs nonlocal (95% CI)	OR unknown vs known (95% CI)	OR local vs nonlocal (95% CI)	OR unknown vs known (95% CI)
Eastern Europe	Refugees	0.54 (0.27–1.11)	1.85 (0.66–5.22)	0.99 (0.42–2.30)	–	0.79 (0.54–1.16)	1.69 (1.01–2.84)
	Family reunited	1.94 (0.52–7.22)	1.58 (0.30–8.34)	0.39 (0.07–2.30)	–	1.54 (0.65–3.67)	1.28 (0.46–3.52)
Middle East	Refugees	0.89 (0.23–3.41)	2.00 (0.21–19.16)	1.79 (0.32–9.99)	–	0.70 (0.29–1.70)	2.22 (0.86–5.73)
	Family reunited	0.50 (0.14–1.78)	1.85 (0.20–17.02)	0.75 (0.09–6.01)	–	0.38 (0.16–0.90)	0.97 (0.28–3.30)

CI, confidence interval; OR, odds ratio.

^aGynaecological cancers include c.cervix, c.uteri and c.ovaries.

^bAll sites include all cancer sites where information stage was available: buccal cavity and pharynx, digestive organs and peritoneum, respiratory system, breast, female genital organs, urinary system, lymphatic and hematopoietic tissue and other specified sites.

Table 4 Overall odds ratios for local versus nonlocal stage and unknown versus known for all migrant women compared with native Danish women; adjusted for match and age and distributed by cancer sites

Cancer site	Migrants	
	OR local vs nonlocal (95% CI)	OR unknown vs known (95% CI)
Breast cancer	0.71 (0.42–1.17)	1.80 (0.83–3.91)
Gynaecological cancers ^a	0.92 (0.48–1.75)	1.27 (0.45–3.57)
All cancer sites ^b	0.77 (0.57–1.04)	1.59 (1.07–2.36)

CI, confidence interval; OR, odds ratio.

^aGynaecological cancers include c.cervix, c.uteri and c.ovaries.

^bAll sites include all cancer sites where information stage was available: buccal cavity and pharynx, digestive organs and peritoneum, respiratory system, breast, female genital organs, urinary system, lymphatic and haematopoietic tissue and other specified sites.

with local disease for all cancer categories compared with native Danish women. Additionally, more migrant women had unknown stage for all cancer categories compared with native Danish women. Table 3 shows odds ratios from the descriptive analyses of being diagnosed in local versus nonlocal stage and unknown versus known stage for migrant women compared with native Danish women. Migrants are subdivided into four categories on the basis of region of origin and migrant status. Table 4 shows the overall odds ratios for migrant women versus native Danish women of being diagnosed with, respectively, local stage and unknown stage.

Initially, we analysed stage distribution among patients with breast cancer and gynaecological cancers as they formed the two major specific cancer sites in the cohort. Among breast cancer patients, Table 3 shows that the odds ratios of being diagnosed in local stage were lower for all migrant subgroups compared with native Danes except for family reunited individuals from Eastern Europe. The odds ratios of having unknown versus known stage among breast cancer patients were consistently higher among all four migrant subgroups compared with native Danes. The results in Table 3 were, however, not statistically significant. Table 4 shows that relatively fewer migrant women were diagnosed with only local breast cancer compared with native Danish women, and more migrant women were likely to have unknown stage compared with native Danes, although these findings did not reach statistical significance.

For gynaecological cancers, the odds ratios shown in Table 3 of being diagnosed in a local versus nonlocal stage of disease differed by migrant subgroups. Refugees from Eastern Europe showed little difference compared with native Danes, but refugees from the Middle East were more often diagnosed with local disease compared with native Danes. Family reunited individuals from both regions were less likely diagnosed with local disease compared with native Danes. The analysis of unknown versus known stage was not possible owing to the few

cases. The overall odds ratios in Table 4 showed that migrant women with gynaecological cancers were almost as likely as native Danish women to be diagnosed with local disease versus nonlocal but more likely to have unknown stage compared with native Danish women. These results were also not statistically significant.

In conclusion, the analyses of breast cancer and gynaecological cancers showed the overall tendency that migrant women seemed to have decreased odds ratios of being diagnosed in local stage and increased odds ratios of having unknown stage. On the basis of these results, we chose to pool and analyse all cancer sites, which could be distributed according to stage. These analyses were adjusted for the specific cancer sites included. For 'all cancer sites', Table 3 shows that all migrant subgroups were less likely to be diagnosed with local stage compared with native Danish women except for family reunited women from Eastern Europe. The result is, however, only statistically significant for family reunited women from the Middle East. Moreover, all migrant subgroups were more likely to have unknown stage compared with native Danish women – except for family reunited women from the Middle East, who did not differ. Table 4 shows that for 'all cancer sites' migrant women in total were less likely to be diagnosed in a local stage compared with native Danish women. This result was borderline significant. Moreover, migrant women were significantly more often likely to have unknown stage compared with native Danish women.

Discussion

Our results showed that migrant women in most cancer subgroups had decreased odds ratios of being diagnosed in a local stage and increased odds ratios of having unknown stage, although these tendencies were mainly not statistically significant. These analyses did not show any consistent difference on migrant subgroup levels (region of birth and migrant status). Besides, an overall analysis adjusting for cancer subgroups showed no difference between migrant subgroups, and thus overall effects were calculated further emphasizing the tendencies. For 'all sites', this analysis reached borderline significance for local versus nonlocal stage and significance for unknown versus staged.

Several limitations must be considered when interpreting the results of the study. First, our study highlights some of the advantages and limitations of making register-based cohort studies on migrants in Denmark. On the positive side, the design enabled us to identify accurately all refugees and family reunited individuals who entered Denmark over a 7-year period and to follow them prospectively for a total of 10 years using register data of high quality. As the overall incidence of cancer is likely to be lower among migrants, and Denmark is a small

country, we identified relatively few migrant women with cancer. Unfortunately, this makes it more difficult to detect significant associations from our data. Second, migrant studies generally use country of birth as a bio-socio-cultural proxy. Additionally, our data allowed us to use migrant status, which we find is equally important in the study as a proxy for premigration and postmigration circumstances. For example, migrants are introduced differently to the Danish healthcare system depending on migrant status. Third, many studies on migrants control for socioeconomic status, because migrants tend to have lower socioeconomic status than the majority population. We did not control for socioeconomic status, because the available register data on this are considered inconsistent and of low validity for first generation migrants. Moreover, earlier studies have not shown any associations between socioeconomic status and cancer stage at diagnosis in the general population (Norredam et al., 1998; Brewster et al., 2001). Finally, we included time since residence allowance in our initial analyses, but owing to low cell counts this was not possible to include in the final analyses.

Our data suggest that migrants are less frequently diagnosed with local disease compared with native Danish women. The relatively high number of unknown cases makes it difficult to interpret this result. It would dilute our results if most unknown cases really belong to local stage, whereas it would strengthen our results if they belong to nonlocal stage. Earlier studies have found that minorities have an increased risk of late stage cancers (Wells and Horm, 1992; Hedeem et al., 1999; Norredam et al., 1999; Oakley-Girvan et al., 2003; Schwartz et al., 2003; Fazio et al., 2005). Differences in tumour biology between migrants and host populations could possibly explain our results. For example, cancer may behave more aggressively among persons of Middle Eastern origin (Gutman et al., 1993; Nissan et al., 2004). Alternatively, late stage diagnosis among migrants is caused by barriers in access to healthcare. Although, the Danish healthcare system is a free-access system, migrants' access to care may be affected by: language, cultural barriers and lack of understanding of the healthcare system of the host country (Naish et al., 1994; Leduc and Proulx, 2004; Szczepura, 2005; Norredam et al., 2007a, b).

Poor screening uptake for breast cancer and cervical cancer may result in a more advanced stage at diagnosis and consequently higher mortality. A Danish study (Holk et al., 2002) on mammography attendance among migrants found noteworthy differences in compliance. Among native Danes, 71% accepted the invitation whereas only 36% of Pakistani, 45% of Yugoslavs and 53% of Turks did so. International studies likewise identify low screening uptake among migrants (Hoare, 1996; Raja-Jones, 1999; Webb et al., 2004). Other studies (Bottorff et al., 1998; Markovic et al., 2002; Kwok et al., 2005) have identified

explanatory factors hereof including lack of comprehension of the concept of screening; organizational problems; inability to read the letter of invitation; resettlement rather than health promotion activities being a priority upon arrival; and owing to low incidences of cancer in native countries, migrant women do not see themselves as susceptible to breast cancer. Similar reasons could possibly explain our results.

We divided information on stage into three categories: local, nonlocal and unknown. Initially, we only wished to study local versus nonlocal disease excluding unknown. Upon finding a high number of unknown among migrants, we, however, included an analysis of the distribution of unknown versus known stage. This problem is interesting and does not seem to have been explored previously. Our results showed a higher number of unknown stages cancers among migrant women compared with native Danish women. According to survival data from the Danish Cancer Registry, unknown staged cancers generally behave like a balanced mix of known staged cancers (Carstensen et al., 1993). Unknown stage, however, is a combination of truly unknown stage cancers and stage cancers that are not reported to the Danish Cancer Registry. We do not know the distribution of these two categories among unknown stages in our material. It is, however, likely that migrants have more truly unknown stages, because there is no reason to believe that missing reports on stage vary between migrants and natives. We suggest three different explanations why truly unknown stages may be more prevalent among migrants. First, this may be the case if some late stage cancer patients are so ill upon diagnosis that they die before receiving proper work up. Second, unknown stages among migrants may be due to a quality of care problem in the clinical encounter resulting in a decreased work up. Third, migrants may choose to return to their country of origin when receiving a terminal diagnosis and thus not receive full work up. These explanations imply that many unknown stages among migrants are actually nonlocal disease.

In conclusion, further research is needed to confirm the tendencies in our results and to find out if they express general problems concerning migrants' access to healthcare. Moreover, it is important to identify specific barriers to be able to plan targeted interventions.

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Emergency room utilization in Copenhagen: a comparison of immigrant groups and Danish-born residents

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Background: The aim of the study was to investigate whether utilization of the emergency room differed between immigrant groups and Danish-born residents in Copenhagen, Denmark. **Methods:** The authors compared the number of emergency room contacts during 1997 among different ethnic groups in the study population. Data were provided by the Statistical Office of the Municipality of Copenhagen. The study population consisted of 183,478 citizens residing in the catchment area of Bispebjerg Hospital in Copenhagen on 1 January 1998. "Contacts" included 22,026 visits made to the emergency room at Bispebjerg Hospital during 1997. Both the study population and "contacts" were characterized by gender, age, income, and country of birth. The immigrants comprised nine ethnic groups according to country of birth. Data were analysed by Poisson regression comparing rate ratios. **Results:** Persons born in Somalia, Turkey, and ex-Yugoslavia had higher utilization rates of emergency room than Danish-born residents. All other non-Western-born residents had utilization rates similar to Danish-born residents. Persons born in other Western and European countries showed a tendency towards less utilization. **Conclusion:** Higher utilization rates among some immigrant groups may be explained by disparities in health or lack of knowledge about the Danish healthcare system as well as barriers to seeking primary care including language, fear of discrimination, and low satisfaction with primary care. The challenge remains to identify these causal relations, and to find out why utilization patterns vary between immigrant groups.

Key words: immigrants, ethnic minorities, emergency room, healthcare utilization, Denmark, equity

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INTRODUCTION

One of the major themes in modern health policy is equity in access to healthcare services. In 1990, the World Health Organization identified three goals in relation to equity: (a) equity in access when equal needs, (b) equity in utilization when equal needs, and (c) equity in quality of treatment when equal needs (1). Our study aims to investigate "equity in utilization when equal needs" in relation to immigrants in Denmark. In this context our study focuses on utilization of healthcare services by comparing emergency room use between different immigrant groups and Danish-born residents in Copenhagen.

In Europe, the discussion on equity in health has most often been focused on socioeconomic differences, but today equity in health for different ethnic

groups is an area of growing interest. Nevertheless, in the WHO's latest publication on European Health Policy, which includes 21 goals for the twenty-first century (2), equity in health for immigrants in European countries is not mentioned under any of the 21 goals, neither those concerning "solidarity" and "equity" nor any of the others. Neither is equity in health for immigrants given special attention in the Danish Government's current Public Health Program for 1999–2008 (3). However, in a recent Public Health Plan for Copenhagen, local authorities have acknowledged that in an area with a foreign-born population of 17% (including offspring), it is important to prioritize "knowledge, preventive measures and public health initiatives concerning ethnic minorities" (4).

The definition of ethnicity and the terminology as such surrounding ethnic minorities is not generally

agreed on nationally in Denmark or internationally (5). For operational purposes, we chose to define immigrants according to Statistics Denmark as "persons born abroad, whose parents are either foreign citizens or born abroad themselves. If information on parenthood is not available and the person is born abroad, he or she is also defined as an immigrant" (6). According to this definition immigrants have formed an increasing part of the population in Denmark throughout the past 20 years. Thus, by 1 January 1980 immigrants numbered 99,796 among the population in Denmark. This number had more than doubled to 258,629 by 1 January 2001, which amounts to about 5% of the total population (6). Individuals from Turkey, ex-Yugoslavia, Iraq, Iran, and Lebanon account for the largest relative increase in the number of immigrants from 1980 to 2002, whereas the relative increase of immigrants from Europe and other Western countries has been much smaller (6). The number of illegal immigrants in Denmark is generally considered to be very small but there are no available estimates. As a consequence of the rising number of immigrants, integration of immigrants into Danish society including the healthcare system is high on the political agenda today. This political debate is likewise taking place in many other countries in Scandinavia and the rest of Europe. Often it appears populist and based on prejudices rather than evidence. Therefore, studies on immigrants' health and their utilization of healthcare services are important contributions in trying to understand the actual state of immigrants' integration into Danish society as well as the way in which Danish society is adapting to its new residents.

Patterns of emergency room utilization

In an American context emergency room care is free as opposed to most other services where insurance is required. An older American study (7) found that while 10% of Hispanics and 16% of Afro-Americans used the emergency room within 1987, only 4% of the majority population used the emergency room. After controlling for health status these disparities remained, and were attributed to the higher number of uninsured among Hispanics and Afro-Americans, leading to more free emergency room visits instead of primary care physician consultations or other services requiring insurance. A more recent study (8) showed no differences in emergency room utilization between Afro-Americans, White Americans and Hispanics after adjustment for age, health insurance coverage, regular source of care and difficulty obtaining transportation to a physician's office. Two other American studies (9, 10) likewise showed that differences in emergency room utilization among Afro-Americans and Hispanics

compared with White Americans decrease when controlling for socioeconomic status or insurance coverage.

A Canadian study (11) has shown that neither the average number of medical services (including emergency room visits) used over a year nor the number of users differed between ethnic groups and the majority of the population when controlling for socioeconomic status and self-reported health. A Swedish study (12) showed a tendency towards higher utilization rates of both primary and secondary health services (including emergency room use) among immigrants compared with Swedish-born residents. However, these differences were explained by less satisfactory self-reported health status among immigrants. Both of the later studies used the same self-reported health status to control for all medical services, and did not look specifically at the self-reported health among emergency room users. A recent Swiss cross-sectional study (13) of emergency room users showed no differences in the distribution of the main ICD-10 coded diagnosis between immigrants and a control group after correction for age. However, this study did not look at specific country of origin. In Denmark, a survey (14) from the period 1994–98 showed that non-Western immigrants used the emergency room more often than Danish-born residents, although this estimate is not controlled for health status or socioeconomic status.

In short, the international literature on immigrants' use of the emergency room that we have studied finds either no differences in utilization after control for socioeconomic status, health insurance coverage and/or health status or it finds a tendency towards higher utilization among immigrants compared with the majority population.

The Danish healthcare system is a "free access" system regarding the primary, secondary, and tertiary health sectors. Private hospitals are not prevalent and the few existing ones do not include emergency room functions. Every person residing in Denmark is assigned a primary care physician. To get an appointment with one's primary care physician one has to make contact by phone. Free non-acute specialist service is available only after referral by a general practitioner, except for ophthalmologist and ear, nose and throat specialists. In this context both language problems and insufficient knowledge about the structure of the Danish healthcare system may present barriers when immigrants seek healthcare.

The aim of our study was to investigate possible differences in utilization of the emergency room among immigrants compared with Danish-born residents in Copenhagen, Denmark. In a public health context this is interesting because for many years the

Scandinavian countries have consisted of overall homogenous populations and national healthcare services that are "free" to all residents. However, since the 1970s the population in the Scandinavian countries has become more heterogeneous as a result of the rising number of immigrants. This represents a challenge, because the demands on the healthcare services have consequently changed. Therefore, it is of interest to study whether the "free access" healthcare systems are able to meet the needs of the immigrant populations according to the pre-existing principles of equality.

In the light of the structure of the Danish health-care system and the documentation presented so far on emergency room use, our hypothesis was that even in a free-care context like the Danish, immigrants use the emergency room more often than Danish-born residents.

MATERIAL AND METHODS

The study investigates differences in emergency room contacts during 1997 between immigrants and Danish-born residents. Data concerning both the study population and emergency room contacts were provided by the Statistical Office of the Municipality of Copenhagen. The study population consists of all citizens residing in the catchment area of Bispebjerg Hospital. This hospital is one of the major hospitals in Copenhagen with a catchment area consisting of 183,478 citizens as at 1 January 1998. We only considered those aged 20

years or more, which amounted to 152,253 (83%). The study population was characterized by gender, age on 1 January 1998, income during 1997 and country of birth. As mentioned earlier, the study population was those registered by 1 January 1998, and serves to give an approximation of the composition of the background population during 1997.

"Contacts" include all visits made to the emergency room at Bispebjerg Hospital during 1997. In total 22,026 emergency room contacts were made within 1997 of which 18,183 (82%) concerned persons aged 20 years or more. Each contact was linked to residence at the time of the contact to make sure that only contacts related to patients from the catchment area were included in the study. Moreover, contacts were characterized by age on 1 January 1998, gender, income during 1997, and country of birth.

The study focuses on first-generation immigrants, i.e. residents who were not born in Denmark. The study population was divided into nine groups according to country of birth (see Table I). We divided them into these groups because individuals from in particular Turkey, ex-Yugoslavia, Pakistan, and Iraq account for the largest relative increase in the number of immigrants in Denmark in the period 1980–2001, whereas the relative increase of immigrants from Europe and other Western countries has been much smaller (6). Asylum seekers are not included in the study population as they live in Red Cross centres in Denmark until they receive asylum, and consequently do not have residence in the catchment area.

Table I. Distribution of income and age within the study population (%)

	Denmark <i>n</i> =127,820	Ex- Yugoslavia <i>n</i> =2,892	Iraq <i>n</i> =1,103	Nordic countries, EC, North America <i>n</i> =6,152	Pakistan <i>n</i> =1,718	Somalia <i>n</i> =590	Turkey <i>n</i> =1,966	Rest of Europe <i>n</i> =1,693	Other countries <i>n</i> =8,319
Age:									
20–29 years	28.2	25.2	25.0	26.5	24.0	39.2	36.6	18.3	27.8
30–39 years	21.0	29.4	43.0	28.1	27.1	43.1	32.9	21.4	41.0
40–49 years	12.8	20.6	23.1	15.2	24.3	8.8	15.0	20.1	17.0
50–59 years	11.4	13.3	4.4	11.5	18.2	4.1	9.4	14.5	8.6
60–69 years	8.2	7.9	2.6	5.8	5.0	3.6	4.8	7.4	3.7
≥ 70 years	18.9	3.6	1.8	12.9	1.4	1.4	1.2	18.3	1.9
Total	100	100	100	100	100	100	100	100	100
Gross income (DKr):									
0–99,999	31.5	38.5	42.3	40.0	42.6	41.0	37.2	49.1	37.5
100,000–299,999	58.3	58.9	56.4	50.8	55.5	58.1	61.1	45.0	59.6
≥ 300,000	9.9	2.6	0.9	8.6	1.8	0.5	1.4	5.7	2.6
Missing	0.3	0.0	0.4	0.6	0.1	0.4	0.3	0.2	0.3
Total	100	100	100	100	100	100	100	100	100
Gender:									
Women	53.6	48.6	37.2	50.2	44.1	50.7	45.9	62.1	46.3
Men	46.4	51.4	62.8	49.8	55.9	49.3	54.1	37.9	53.7
Total	100	100	100	100	100	100	100	100	100

Apart from country of origin our variables included gender, age, and income (see Table I). Concerning age, only adults of ≥ 20 years were included. The population was divided into the following six age categories: 20–29, 30–39, 40–49, 50–59, 60–69 and ≥ 70 years. Income is based on individual gross income, and was divided into the following three categories: 0–99,999, 100,000–299,999 and $\geq 300,000$.

Data were analysed by Poisson regression comparing rate-ratios (RR) of emergency room contacts across country of birth. We assume that there is an intensity of emergency room contacts depending on age, sex, income, and country of birth. Moreover, we assumed that the population at risk on a given day during 1997 was a fixed population, namely the study population as at 1 January 1998.

RESULTS

Table I shows the distribution of age, income and gender within the different ethnic groups of the study population including Danish born residents. The table shows that the foreign-born population is younger than the Danish-born population apart from immigrants from “other Nordic countries”, the EC, North America, and the “Rest of Europe”. Moreover, Table I shows that more among Danish-born residents than among all other nationalities are placed in the highest income category, apart from residents from “other Nordic countries”, the EC, and North America. There is no clear pattern regarding the distribution of gender by country of origin.

Table II shows the distribution of country of birth among emergency room contacts and within the study population, and furthermore the crude utilization rate/1,000 years at risk for each country of birth. Thus, when not adjusting for gender, age, and income, persons originating from ex-Yugoslavia, Turkey, and Somalia give rise to the highest rates of emergency

Table III. Rate ratios (with 95% confidence intervals) of emergency room utilization within the study population by country of origin controlling for age, gender, income, and the interaction between age and gender, obtained from Poisson regression

	Rate ratios	95% CI
Country of birth:		
Denmark	1	
Ex-Yugoslavia	1.229	1.111–1.359
Iraq	0.952	0.792–1.144
Nordic countries, EC, North America	0.813	0.748–0.884
Pakistan	1.007	0.873–1.161
Somalia	1.457	1.175–1.806
Turkey	1.357	1.202–1.531
Rest of Europe	0.873	0.757–1.007
Other countries	0.995	0.927–1.067
Income (DKr):		
0–99,999	1	
100,000–299,999	0.730	0.707–0.754
$\geq 300,000$	0.370	0.343–0.400
Age and gender:		
20–29 years women	0.079	0.074–0.083
30–39 years women	0.105	0.098–0.111
40–49 years women	0.131	0.122–0.140
50–59 years women	0.151	0.141–0.162
60–69 years women	0.148	0.137–0.159
≥ 70 years women	0.253	0.245–0.262
20–29 years men	0.102	0.097–0.108
30–39 years men	0.137	0.130–0.145
40–49 years men	0.182	0.171–0.193
50–59 years men	0.173	0.162–0.185
60–69 years men	0.178	0.165–0.192
≥ 70 years men	0.258	0.246–0.271

room contact and those born in the Nordic countries, the EC, and North America the lowest.

Table III shows the results from the Poisson regression analysis. Danish-born patients are used as the reference group when comparing country of origin whereas “Danish born low income” patients are used as a reference group when comparing income as well

Table II. Emergency room contacts by country of birth – crude utilization rates

Country of birth	Emergency room contacts		Study population		Crude utilization rate per 1,000 person years
	n	%	n	%	
Denmark	15,453	85.0	127,820	84.0	121
Ex-Yugoslavia	396	2.2	2,892	1.9	137
Iraq	116	0.6	1,103	0.7	105
Nordic countries, EC, North America	586	3.2	6,152	4.0	95
Pakistan	196	1.1	1,718	1.1	114
Somalia	87	0.5	590	0.4	147
Turkey	272	1.5	1,966	1.3	138
Rest of Europe	193	1.1	1,693	1.1	114
Other countries	884	4.9	8,319	5.5	106
Total	18,183	100	152,253	100	119

as age and gender interaction. An overall highly significant association was found between rates of emergency room contacts and country of birth ($\chi^2=79.1$, $df=8$, $p<0.0001$). When controlling for age, gender, income, and the interaction between age and gender, persons born in Somalia, Turkey, and ex-Yugoslavia had the highest utilization rates (RR = 1.46, 1.36, and 1.23, respectively) compared with Danish-born residents. Persons born in the four other Nordic countries, the EC and North America had the lowest utilization rates (RR=0.81). Persons born in other countries, Iraq, and Pakistan showed utilization rates similar to Danish-born residents with ratios of respectively 0.99, 0.95 and 1.0.

A highly significant association was found between income and utilization ($\chi^2=868.8$, $df=2$, $p<0.0001$). Table III shows how utilization rates decrease dramatically with increasing income. The utilization rate of the highest income group was around one-third (RR=0.37) of the utilization rate of the lowest income group. Moreover, Table III shows that utilization rates increase with age for both men and women. The rate for different age and gender combinations in the countries studied can be obtained by multiplying the country of birth ratios by the relevant sex/age ratios and then recalculating the rate.

DISCUSSION

Our results show higher utilization of the emergency room among persons born in Somalia, Turkey, and ex-Yugoslavia. All other non-Western-born residents (including persons born in Pakistan and Iraq) had utilization rates similar to Danish-born residents. Only persons born in "other Western" and European countries showed a tendency towards less utilization.

Our study only includes adults ≥ 20 years of age. A practical reason for excluding children and young people from our study was that many lacked information on income. Moreover, other studies on ethnicity and health indicate different age variations in the utilization patterns of different ethnic groups. For example, a British study (15) indicates patterns of lower levels of utilization of emergency room visits among Caribbean, Middle Eastern, and Indian children. This result is different from most research on adults of foreign origin in Britain, which has mainly shown patterns of higher levels of utilization or no gross differences.

The variations found between ethnic groups in our study demonstrate the importance of looking at each minority group on its own instead of gathering them into one heterogeneous group as sometimes done. It is interesting that persons born in countries as diverse as Somalia, Turkey, and ex-Yugoslavia show the same

patterns of higher utilization compared with Danish-born residents. These countries are all characterized by similar religious traditions, but are geographically and otherwise culturally far from each other. Moreover, Turks were some of the first immigrants to come to Denmark in the 1970s as "guest workers" whereas persons born in ex-Yugoslavia and Somalia belong to the most recent groups of mainly refugees. Consequently, duration of residence is very different for all three immigrant groups. As such, it is difficult to point towards any common determinants related to residents born in these three countries. This will require further studies concerning the background of the utilization patterns found for each different minority group.

What may, then, in the light of our present knowledge explain the higher utilization rates of persons born in Somalia, Turkey, and ex-Yugoslavia? First, differences in health status might explain our result. Unfortunately, we could not control for health status directly because we did not have these data available. However, by controlling for age, gender, and income in the analyses we have tried to take account of possible variations in health related to different patterns of age, gender, and income across ethnic groups. As to the general health status of immigrants in Denmark two recent reports (14, 16) on statistics from the period 1994–98 on the integration of immigrants conclude that infectious diseases are more prevalent among immigrants in all ages, whereas traumas and poisonings are more prevalent among Danish-born residents. Moreover, the mortality from accidents in Denmark is higher among Danish-born residents compared with immigrants. Consequently, available data do not indicate that traumas, poisonings, and accidents, which normally lead to acute care via the emergency room, are more prevalent among immigrants.

Two recent Danish studies (17, 18) concerning patients at Bispebjerg Hospital found only minor diagnostic disparities between immigrants and Danish-born inpatients referred either from the emergency room or from the primary care physician. In one of these studies (17) patients were distributed according to diagnosis on discharge according to the ICD-10 classification system. When looking at ex-Yugoslavs, Turks, and Somalis specifically, these groups suffered more from infectious diseases, gastrointestinal diseases, and unclassifiable diseases whereas Danish-born residents suffered more from pulmonary diseases, diseases of the nervous system, nose, ear and throat diseases, and cardiovascular diseases. Thus, some disease categories appear to be more prevalent among immigrants whereas others are more prevalent among Danish-born residents.

Our data, however, do not provide information about possible ethnic differences regarding the need for acute care as a consequence of different patterns of disease.

Second, higher emergency room use may be due to access barriers when seeking primary care. Potential access barriers to a primary care physician will result in irregular doctor-patient relationships and consequently in more emergency room visits. This causal relation is supported by two American studies (19, 20) showing that absence of a relationship with a regular doctor was correlated with more emergency room visits for selected non-urgent conditions after controlling for important confounders like insurance status. Access barriers when seeking primary care in Denmark may include language problems, fear of discrimination, low satisfaction with primary care, and lack of knowledge about the structure of the Danish healthcare system.

For example, language difficulties when making appointments over the phone with primary care physicians may result in emergency room use as a substitute. A study (21) from the USA highlights the importance of language compared with other access barriers. Parents of Latino origin were asked to name the single greatest barriers to seeking help from a primary care physician for their children. Parents cited language problems (26%), waiting time at physician's office (15%), and no medical insurance (13%) as the greatest barriers.

Fear of discrimination by primary healthcare workers may present another barrier. A Danish thesis (22) on Turkish women's use of primary care physicians documents that healthcare professionals tend to generalize and mythologize some groups of foreign-born patients. For example, Turkish women were conceived as more complaining in general, and as having a lower pain threshold in particular. Also, they were perceived as arriving too late for consultations and wanting more medicine than the physicians were willing to prescribe. The physicians showed a tendency to generalize foreign-born patients, which led to preconceived notions when they meet new patients of foreign origin. This resulted in some patients feeling neglected and ignored. Most probably some of these patients went to seek help elsewhere within the system, for example in emergency rooms or in parallel systems such as traditional medicine. A related barrier is low satisfaction with caregivers among immigrants. A survey from Britain (23) has reported low satisfaction with the outcome of consultations with doctors among immigrants compared with the majority population.

Some immigrants may also use emergency room visits as a substitute for services that are traditionally provided by the primary healthcare sector in Denmark

because of a lack of knowledge about Danish healthcare services. Information on the Danish healthcare system is not provided automatically on arrival in asylum centres or when taking up residence in Denmark. However, recently "The Cooperation of Hospitals in Copenhagen" (HS) has taken up the task of producing information material on the Danish healthcare system in Urdu, Arabic, Serbo-Croatian, Turkish, English, Farsi, and Somali. These brochures are now available at all emergency rooms at hospitals in Copenhagen.

We related the population residing in the catchment area of Bispebjerg Hospital in Copenhagen at a fixed date, that is 1 January 1998, to all emergency room visits made at Bispebjerg Hospital within 1997. Our background data show an increase in the population from 182,024 as at 1 January 1997 to 183,478 by 1 January 1998. This represents a rise in the resident population of 0.8% within 1997. We do not know how this increase is distributed by country of origin. However, we do not consider this a major bias, and if anything this may lead to an underestimate of the utilization rates of the groups characterized by a growth in number during 1997.

Income was used to control for socioeconomic status, as other socioeconomic measures such as education and occupation were less valid and often lacking among immigrant groups. Only 433 adults of the 152,253 in the catchment area on 1 January 1998 had no information on income and were consequently excluded from the analysis. Additionally, 388 of the 18,183 emergency room contacts came from persons without information on income and were consequently also excluded. However, when including a level "Missing information" in the income covariate for persons with no information on income, the estimated rates did not change considerably. The emergency room intensity for "Missing information" was then found to be 6.57 (95% CI: (5.84; 7.39)) times increased compared with the lowest income group. The people with no information are most probably people who died or moved out of Copenhagen within the study period.

CONCLUSION

Our study confirmed our hypothesis to a certain extent in that it showed how some immigrant groups have higher emergency room utilization rates compared with Danish-born residents. This may possibly be due to differences in health status or access barriers to a primary care physician including language problems, fear of discrimination, low satisfaction with primary care, and lack of knowledge about the structure of the Danish healthcare system. Our data

only allow us to document differences in emergency room use, but we have no conclusive evidence as to whether these differences actually reflect inequity in access. So far, equal access to healthcare has been a key issue in Scandinavian healthcare policy. Further research is needed to document how this general public health goal can continue to be achieved with an increasing ethnically heterogeneous population. The challenge remains for future research in this area to understand the basis of the utilization patterns observed and why they are apparent among some but not all immigrant groups. This can be done by both qualitative and quantitative methods of research such as questionnaires and interviews targeting immigrant patients as well as healthcare professionals working with this population.

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Immigrant Health

Motivation and relevance of emergency room visits among immigrants and patients of Danish origin

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Background: We investigated the extent to which immigrants and patients of Danish origin have different motivations for seeking emergency room (ER) treatment, and differences in the relevance of their claims. **Methods:** Data were obtained from a questionnaire survey of walk-in patients and their caregivers at four Copenhagen ERs. The patient survey was available in nine languages, and addressed patient-identified reasons for using the ER. Caregivers were asked if the claim was appropriate to the ER. 3809 patients and 3905 caregivers responded. The response rate among patients was 54%. Only questionnaires in which both patient and caregiver had responded, and in which data on the patient's nationality were available, were included in the analyses ($n = 3426$). The effect of region of origin was examined using bivariate, stratified analyses and tested for independence. **Results:** More among immigrant patients than among patients of Danish origin had considered contacting a primary caregiver before visiting the ER, and more immigrants reported going to the ER because they could not contact a general practitioner, or could not explain their problem on the telephone. Compared to immigrants, more patients of Danish origin explained that the ER was most relevant to their need. A higher proportion of claims among immigrants were seen by caregivers as not being appropriate to the ER. **Conclusion:** Migrants have more irrelevant ER claims, presumably because of barriers in access to primary care. Access to primary care should be facilitated for these groups. Alternatively, ERs could include primary care activities as part of their services.

Keywords: access, emergency, immigrants, primary care

Introduction

UN estimates show an increase in migrants worldwide from 155 million in 1990 to 191 million in 2005.¹ In 2005, roughly 60% of all migrants lived in developed countries, but came from developing countries. Europe hosted 34% of all migrants in 2005. In Denmark, 8.4% of the population currently consists of first- and second-generation immigrants, nearly two-third of whom come from developing countries.²

Equity in access to health care is crucial to ensure that immigrants have the possibility of attaining the same state of mental and physical well-being as host populations. We employ WHO's definition of equity in access to health care as 'equity in access when needs are equal'.³ This definition implies that patients preferably have access to the most relevant services for their specific needs, as this will ensure the most optimal treatment.

Access to health care services has often been investigated by measuring utilization of services. Consequently, studies of immigrants' use of ER services have mainly focused on differences in usage rates compared to host populations. Differences in usage rates of immigrants and ethnic minorities have been reported in the United States^{4–6} as well as in subsidized health care systems such as in Canada and Sweden.^{7,8} Differences in the latter two studies, however, disappeared after controlling

for socioeconomic status and self-perceived health. In a previous study, we found that some immigrant groups in Denmark (those born in Somalia, Turkey and the former Yugoslavia) had 30–50% higher utilization rates of ER services compared to the residents of Danish origin, after controlling for age, gender and income.⁹ Consequently, we wanted to study the factors motivating immigrants' ER visits.

Several predictors of ER usage in the general population have already been identified.^{6,10–13} In addition, immigrants may experience linguistic and cultural barriers to accessing primary care, including uncertainty concerning how to navigate in the health care systems of host countries. This may result in higher ER use for some immigrants.

In the general population, ER usage has been rising in several countries.^{6,14} Simultaneously, several studies have shown that one-third to two-third of ER patients present non-urgent problems that could have been handled appropriately in primary care.^{10,14–16} Non-urgent ER claims are a source of frustration for ER caretakers and administrators because they may lead to higher expenses, crowding and treatment delays. Consequently, there is a wish to identify predictors of ER use of irrelevant claims.

Citizens in Denmark are entitled to free primary care services from their general practitioner who provides free primary care services and serves as their primary caretaker and gatekeeper to secondary health care. In case of an emergency there are three main options for seeking health care: (1) one's own general practitioner (daytime only), (2) an emergency treatment service run by the general practitioners in the area or (3) hospital-based ER services. In central Copenhagen there are four ERs which are all open for direct access on a 24-h basis.

Our hypothesis was that some immigrants would more frequently choose the ER compared to patients of Danish

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origin, due to barriers in access to primary care, and that caregivers would consequently find immigrants' claims less relevant compared to the claims of patients of Danish origin. Our research questions were therefore as follows:

- (1) Do immigrants and patients of Danish origin differ in their motivation for seeking ER treatment?
- (2) Are there any differences between immigrants and patients of Danish origin as to the relevance of their ER claims?

Methods

Design and instruments

The study was based on data from a questionnaire survey of walk-in patients and their caregivers at four ERs. We used one questionnaire for ER patients and one for their ER caregivers. The patient survey was divided into two parts. The first part concerned patient-identified reasons for using the ER instead of other services, including how acutely the patients defined their needs. The second part concerned satisfaction with ER services; the results are not included in this article. Caregivers were asked whether the complaint was relevant in an ER context, and whether the patient was hospitalized.

The patient questionnaire was available in nine languages: Danish, English, French, Arabic, Farsi, Serbo-Croatian, Turkish, Somali and Urdu. It was developed in Danish, subsequently translated into the appropriate language by one translator, and then translated back into Danish by a different translator to ensure validity. Inconsistencies were cleared in dialogue with both translators.

The survey was distributed during three separate weeks: one in September 2004, one in January 2005 and one in May 2005. This was done to take seasonal variations in morbidity patterns into account. The survey was distributed during all shifts throughout those 3 weeks.

Sampling

The study took place at the ERs of all four hospitals with open ER access in the Copenhagen Hospital Cooperation. The questionnaire was answered by 3809 ambulatory patients over three separate weeks; during that period, 7109 ambulatory patients came to the ER, amounting to a response rate of 54%. A total of 3905 responses from caretakers were obtained. In analysing the data, we used only those questionnaires where both patient and caregiver had responded. This amounted to 3585 cases. Questionnaires with missing data on the patient's country of origin were excluded. This was the case for 159 questionnaires. Our final analysis was therefore based on 3426 questionnaires.

Procedure

The questionnaire was given to all walk-in patients by the secretary or nurse who registered them in the ER. Patients were asked to fill out the first part of the questionnaire in the waiting room, prior to treatment, and the second part after treatment, but before leaving the ER. The questionnaire was collected in a sealed box before the patient left the ER. The secretary provided caregivers with a questionnaire corresponding to the same patient. Corresponding questionnaires were identified by matching serial numbers.

Analysis

All data were analysed by SAS. We analysed for bivariate associations in stratified tables, and tested for independence using the chi-square test. Patient respondents were defined as being of non-Danish origin if they themselves, as well as both

parents, were born abroad (first-generation), or if they were born in Denmark to two parents born abroad (second-generation). Patients were divided into groups of origin according to their own country of birth, or—if own country of birth was Denmark—their mother's country of birth. We divided respondents into the following four groups based on region of origin: Danish ($n = 2878$), Western ($n = 119$), Middle Eastern ($n = 289$) and other non-Western ($n = 140$). Western and Middle Eastern categories were defined according to WHO guidelines.¹⁷ We included patients in all age groups. Parents or others accompanying minor patients were asked to answer the questionnaire on behalf of the patient.

Missing observations were analysed for all outcome variables. For most outcome questions, missing observations accounted for 5–20% of all answers. These were evenly distributed among the different groups of foreign origin apart from the Middle Eastern region, which had a slightly elevated number of missing observations for all questions. As this was a general finding for all questions, the higher number of missing observations is most likely not related to problems in interpreting the different questions but, rather, to general problems for this group, including language barriers. The exact amount of missing data for the outcome in question is reported in the tables or the results section.

Results

Table 1 shows the demographic characteristics of the patient respondents, distributed by region of origin. Socioeconomic data are shown only for respondents ≥ 15 years. Caregivers ($n = 3426$) were divided into three groups according to professional background: nurses (5%), interns (43%) and specialized doctors, or residents (37%) (18% lacked information on professional background).

Patient respondents were first asked if they had considered contacting their general practitioner before seeking treatment at the ER. We found 28% of patients of Danish origin, 40% of patients of Western origin, 42% of patients of Middle Eastern origin and 38% of patients of other non-Western origin had considered this ($P < 0.01$). We also asked if patients had considered contacting the emergency treatment service before coming to the ER. We found 14% of patients of Danish origin, 15% of patients of Western origin, 23% of patients of Middle Eastern origin and 18% of patients of other non-Western origin had considered this ($P < 0.01$). Consequently, in all groups of foreign origin, more respondents had considered contacting primary caregivers before going to the ER, compared to the patients of Danish origin.

Secondly, we asked patients about their primary reason for using the ER. The following options were given: (a) 'I could not get in contact with a general practitioner'; (b) 'The ER is most relevant to my need' or (c) 'I was referred by a primary caregiver'. Table 2 shows patient responses distributed by geographical origin, and stratified by socioeconomic position (using education as a proxy hereof). Among all respondents, 13% used the ER because they were unable to contact a general practitioner; 63% visited the ER because it was most relevant to their need, and 24% had been referred by a primary caregiver. When looking at the groups of origin, our figures showed that immigrant ER visits were more often precipitated by an inability to contact a general practitioner. In contrast, more patients of Danish origin indicated that the ER was most appropriate to their needs, compared to all immigrant groups. There were virtually no differences between these patients concerning how many had been referred to the ER by a primary caregiver. We stratified our results by socioeconomic position using number of school years, further education and

Table 1 Demographic characteristics of the patient respondents

	Danish (%)	Western (%)	Middle Eastern (%)	Other non-Western (%)	Total (%)
Sex ^a					
Women	44.2	40.3	38.4	51.7	43.8
Men	55.4	58.8	61.6	49.3	55.8
Missing	0.4	0.9	0.0	0.0	0.4
Age ^a					
0–14 years	18.0	5.0	25.3	13.6	18.0
15–24 years	17.4	23.5	25.6	15.0	18.2
25–34 years	24.2	26.9	19.4	26.4	24.0
35–44 years	14.8	21.0	13.2	22.1	15.2
45+ years	24.1	23.5	10.4	20.0	22.8
Missing	1.4	0.0	6.2	2.9	1.8
Mean age (years)	32.7	35.3	25.3	32.4	32.2
Migrant generation ^b					
First generation	–	89.9	53.0	80.0	67.9
Second generation	–	10.1	47.0	20.0	32.1
Missing ^b	–	–	–	–	–
School ^c					
<8 years	7.0	5.3	18.6	8.6	7.8
8–9 years	18.0	12.4	16.2	17.1	17.6
>9 years	72.5	80.5	56.6	68.4	71.6
Missing	2.5	1.8	8.6	5.9	3.0
Education beyond school ^c					
None or short (<3 years)	35.9	30.9	51.0	41.0	37.0
Medium (3–4 years)	40.4	37.2	23.7	27.4	38.5
Long (>4 years)	19.4	26.6	14.2	21.4	19.4
Missing	4.3	5.3	11.1	10.2	5.1
Income ^c					
<100,000 d.kr	20.2	31.9	36.9	28.2	22.2
100,000–300,000 d.kr	47.4	34.5	34.9	55.6	46.3
>300,000 d.kr	27.4	23.9	11.6	7.7	25.3
Missing	5.0	9.7	16.6	8.5	6.2

a: Data are reported for all respondents, n = 3426 (Danish • 2878; Western • 119, Middle Eastern • 289, other non-Western • 140).

b: There are no missing data in this category because respondents with missing data on country of origin initially were excluded (n = 159).

c: Data are only reported for respondents • 15 years, n = 2746 (Danish • 2318; Western • 113, Middle Eastern • 198, other non-Western • 117).

income as proxies. Table 2 shows that stratifying by further education did not affect the differences in primary reasons for using the ER between patients of foreign and Danish origin. This was also the case when stratifying by number of school years and income (data not shown).

Thirdly, patient respondents were asked if there were any additional reasons why they went to the ER. This was a supplementary question and only about 50% of respondents answered. The following options were given: (1) 'I generally prefer the ER'; (2) 'It was difficult for me to explain my problem on the telephone'; (3) 'I live outside Copenhagen, but I need help here' or (4) 'The ER provides more specialist treatment'. We found 42% of patients of Danish origin, 27% of patients of Western origin, 57% of patients of Middle Eastern origin and 68% of patients of other non-Western origin generally preferred the ER ($P < 0.01$); 17% of patients of Danish origin, 26% of patients of Western origin, 44% of patients of Middle Eastern origin and 39% of patients of other non-Western origin had difficulties explaining their problem by phone and therefore went to the ER ($P < 0.01$); 18% of patients of Danish origin, 31% of patients of Western origin, 22% of patients of Middle Eastern origin and 37% of patients of other non-Western origin answered that they went to the ER because they lived outside Copenhagen and therefore could

not visit their normal primary caregiver ($P < 0.01$). Finally, we found that 73% of patients of Danish origin, 78% of patients of Western origin, 82% of patients of Middle Eastern origin and 92% of patients of other non-Western origin went to the ER to receive specialist treatment ($P < 0.01$). All results were stratified by education. This did not affect the distribution of additional reasons for using the ER between patients of foreign origin and those of Danish origin.

Respondents were also asked how acutely they defined their need for help. More patients from Middle Eastern regions (63%) and of other non-Western origin (52%) responded that they needed acute help (<1 h), compared to patients of Danish (24%) and other Western origin (27%). These differences were significant ($P < 0.01$).

Caregivers reported that 21% of patients' visits were not relevant in the ER. One-third of these did not warrant medical attention at all, while two-thirds were relevant in the health system but not relevant in an ER context. Significant differences according to patients' geographical origins were found: 19% of visits of patients of Danish origin were deemed not relevant—compared to 30% of patients of Western origin, 33% of patients of Middle Eastern origin and 40% of patients of other non-Western origin ($P < 0.01$). As shown in table 3, we stratified this result by primary reason for using the ER. The table shows that the relevance of the ER visit was correlated with region of origin for all reasons for visiting the ER (though not significantly among those who came because they could not contact a general practitioner). The table also shows that most visits were considered irrelevant among those who could not contact their primary caregiver (except 'other non-Western'): 33% versus 18% and 21% in the total ($P < 0.01$).

Discussion

This study has several limitations. First, our results showed relatively identical outcomes for all immigrant groups according to region of origin, compared to the patients of Danish origin. This might have been because we did not refine our categories into more precise geographical regions, which was not possible due to the low number of immigrant participants. Secondly, we decided to include both first- and second-generation immigrants as only one group in our analyses. As a result, we may be missing important differences between first- and second-generation migrants. However, as many second-generation immigrants are minors, in many cases their questionnaire was filled out by their accompanying parent, thus reflecting the attitudes and behaviour of the parent. Thirdly, we included only data from ERs in central Copenhagen, where relative ER proximity is high compared to the rest of the country. This might influence the choice of ER as the primary choice in case of emergency; however, it is unclear whether the effect of distance would differ between patients of Danish origin and immigrants. Fourthly, the response rate was relatively low in the study (54%). The dropout may be due to different reasons. Being an ER patient is not the most optimal situation for responding to a questionnaire survey: patients may be interrupted in the waiting room before they are able to complete the questionnaire; some patients may be in pain or worried about their complaint; accordingly, they may be unable or unwilling to respond. This may mean that those who answered the survey were more likely to have minor complaints, which could be defined as irrelevant by caregivers. There is, however, no reason to believe that this would differ between patients of Danish origin and immigrants. Moreover, it is possible that less integrated immigrants were more unlikely to answer the questionnaire. This might underestimate the true magnitude of

Table 2 Primary reason for using the ER distributed by geographical origin and stratified by education (only respondents • 15 years included, n • 2746)

Length of further education ^a	Primary reason for using the ER ^b	Danish (n • 2069)	Western (n • 100)	Middle Eastern (n • 159)	Other non-Western (n • 90)	Total (n • 2418)
		% (n)	% (n)	% (n)	% (n)	% (n)
None or <3 years (P < 0.01)	'I could not get in contact with a general practitioner'	11 (85)	22 (7)	26 (24)	24 (10)	13 (126)
	'The ER is most relevant to my need'	64 (499)	53 (17)	54 (50)	54 (22)	62 (588)
	'I was referred by a primary caregiver'	25 (196)	25 (8)	20 (18)	22 (9)	25 (231)
3–4 years (P < 0.01)	'I could not get in contact with a general practitioner'	11 (93)	30 (12)	24 (10)	31 (8)	13 (123)
	'The ER is most relevant to my need'	69 (600)	45 (18)	47 (19)	54 (14)	66 (561)
	'I was referred by a primary caregiver'	20 (178)	25 (10)	29 (12)	15 (4)	21 (204)
>4 years (P < 0.01)	'I could not get in contact with a general practitioner'	10 (40)	21 (6)	23 (6)	30 (7)	12 (59)
	'The ER is most relevant to my need'	61 (256)	43 (12)	62 (16)	35 (8)	59 (292)
	'I was referred by a primary caregiver'	29 (122)	36 (10)	15 (4)	35 (8)	29 (144)
Total (P < 0.01)	'I could not get in contact with a general practitioner'	11 (218)	25 (25)	25 (40)	28 (25)	13 (308)
	'The ER is most relevant to my need'	65 (1355)	47 (47)	53 (85)	49 (44)	63 (1531)
	'I was referred by a primary caregiver'	24 (496)	28 (28)	22 (34)	23 (21)	24 (579)

a: Number of respondents missing data on further education: 140 (5%). These were excluded from the table.

b: Number of respondents missing data on primary reason for using the ER: 230 (8%). These were excluded from the table (there were 42 overlaps with missing data on education, resulting in 328 missing respondents in total in this table).

Table 3 Relevance of the patient visit distributed by geographical origin and stratified by primary reason for using the ER

Primary reason for using the ER ^a	Relevant visit in the ER ^b	Geographical origin				
		Danish (n • 2159) % (n)	Western (n • 87) % (n)	Middle Eastern (n • 199) % (n)	Other non-Western (n • 93) % (n)	Total (n • 2538) % (n)
'I could not get in contact with a general practitioner' (P • 0.07)	No	28 (59)	43 (9)	45 (22)	41 (12)	33 (102)
	Yes	72 (150)	57 (12)	55 (27)	59 (17)	67 (206)
'The ER is most relevant to my need' (P < 0.05)	No	17 (244)	25 (11)	25 (27)	30 (13)	18 (295)
	Yes	83 (1164)	75 (33)	75 (80)	70 (31)	82 (1308)
'I was referred by a primary caregiver' (P < 0.01)	No	19 (103)	27 (6)	40 (17)	60 (12)	22 (138)
	Yes	81 (439)	73 (16)	60 (26)	40 (8)	78 (489)
Total (P < 0.01)	No	19 (406)	30 (26)	33 (66)	40 (37)	21 (535)
	Yes	81 (1753)	70 (61)	67 (133)	60 (56)	79 (2003)

a: Number of respondents missing data on primary reason for visiting the ER: 296 (8%). These were excluded from the table.

b: Number of respondents missing data on relevance of visit: 647 (19%). These were excluded from the table (there were 55 overlaps with missing data on most important reason for visiting the ER, resulting in 888 missing respondents in total in this table).

the communication problems that are identified in this study. Finally, it would have been relevant to include questions about the length of time that immigrants had lived in Denmark, as this could have bearing on immigrants' degree of integration in the Danish society and thus on their communication skills. However, this was not included in order to reduce the complexity and length of the questionnaire. The stay in the ER waiting room for a patient may be short and we wished to try to ensure a high response rate by making the questionnaire relatively short and simple to answer for all respondents. It should also be mentioned that ERs are open to all groups of immigrants in Denmark, including asylum seekers and

undocumented immigrants. The majority of asylum seekers, however, live in asylum centres outside the city of Copenhagen and few are therefore likely to use the ERs included in the study. The number of undocumented immigrants is unknown but is often estimated as being relatively low compared to many other European countries.

We hypothesized that immigrants and patients of Danish origin differed in their motivation for seeking ER treatment. Our findings showed that immigrants, in particular, had considered contacting a primary caregiver before visiting the ER, compared to the patients of Danish origin. Also, more immigrants sought treatment at the ER because they could not

contact a general practitioner (including not being able to explain their problem on the telephone), whereas patients of Danish origin more often reported that the ER was most relevant to their need. Other studies of the general population have identified medical necessity as the principal reason for seeking ER treatment.^{10,18}

Interestingly, our findings were identical across regions of origin for immigrants compared to patients of Danish origin. Immigrants' motivation for seeking ER therefore seems to be related to migration status rather than ethnicity as defined by region of origin. Being an immigrant—irrespective of region of origin—may hamper contact with the health care system in several ways. Communication between patients and caregivers may be complicated by linguistic barriers. In an American study of access barriers to primary care for Latino children, parents cited language problems as the single most common barrier.¹⁹ Another American study found that non-English speaking patients with 'only'-English-speaking primary health caregivers were more likely to use the ER.²⁰

Being a newcomer to the Danish society also implies lack of knowledge about the functions of the health care system. Immigrants may come from places with different health care structures or few health care facilities. Immigrants arriving in Denmark are asylum seekers, quota refugees, labour migrants, students or family reunified. Asylum seekers usually live in centres where access to primary care is part of an on-site alternative health care system provided as long as they have not received permission to stay in the country. This means that they do not become acquainted with the Danish health care system before becoming Danish residents served by this system. Immigrants in the latter four groups receive no systematic introduction by authorities, but have to rely on schools, employers, friends and family for an introduction to the Danish health care system. Access to primary care could be facilitated if all newcomers were systematically introduced to the functions of the health care system in Denmark.

We also hypothesized that there were differences between immigrants and patients of Danish origin as to the relevance of their claims as defined by their caregivers. Our findings showed that caregivers evaluated an especially high proportion among the immigrants as being irrelevant (30–40%) compared to the proportion among patients of Danish origin (19%). Predictors of irrelevant ER visits have been investigated in relation to ER overcrowding and capacity discussions. However, to date, studies have not documented migration status as a predictor of irrelevant ER visits. We attribute the higher percentage of irrelevant visits among immigrants to the fact that they experience more barriers to access to primary care. To avoid irrelevant ER visits among immigrants, access to primary care should be facilitated to these groups. One possible improvement could include more open hours in general practice to bypass the problems of telephone bookings. A more radical reform would be to establish special primary care clinics open for direct access in the daytime in communities characterised by many immigrants. Alternatively, ERs could expand their activities to include more primary care services. Indeed, it has been shown that employing general practitioners in ERs to manage patients with primary care needs resulted in reduced rates of investigations, prescriptions and referrals.²¹ Contact problems in primary care are not found to be significant only among immigrants. Other studies have shown that ER visits, in general, are sometimes motivated by dissatisfaction with, or distrust of primary caregivers, including difficulties regarding scheduling appointments and contacting primary caregivers by telephone.^{22,23} Thus, the findings of our study might serve as the basis for general initiatives to improve access to relevant primary health care for the population at large.

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Conflict of interest: None declared.

Key points

- Differences in ER usage patterns between immigrants and host populations are known, but no previous European studies have included immigrants' own perceptions of why they seek ER treatment.
- Immigrants have more irrelevant ER claims because of barriers in access to primary care.
- Policymakers should facilitate access to primary care for immigrants or, alternatively, include primary care activities as part of ER services.

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Ethnic Disparities in Health

Access to health care for asylum seekers in the European Union—a comparative study of country policies

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Background: The aim of our article is to characterise and compare current standards of health care provision for asylum seekers in the 25 European Union (EU) countries in order to identify the needs and potential for improving access to health care for asylum seekers. **Methods:** The study is based on an e-mail survey performed between April and June 2004. The questionnaire was concerned with asylum seekers' access to medical screening upon arrival, and their general access to health care services on April 1, 2004. The questionnaire was sent to ministries and NGOs responsible for asylum seekers' health care in the 25 EU countries. A total of 60% of the ministries and 20% of the NGOs responded. We received answers from 24 out of the 25 countries. **Results:** Medical screening was provided to asylum seekers upon arrival in all EU countries but Greece. The content of screening programs, however, varied as well as whether they were voluntary or not. We found legal restrictions in access to health care in 10 countries. Asylum seekers were only entitled to emergency care in these countries. A number of practical barriers were also identified. Legal access to health care changed during the asylum procedure in some countries. Access to specialised treatment for traumatised asylum seekers existed in most countries. **Conclusion:** Health policies towards asylum seekers differ significantly between the EU countries and may result in the fact that the health needs of asylum seekers are not always adequately met.

Keywords: access, asylum seekers, Europe, medical screening, refugee health

Introduction

By the end of 2004 the United Nations High Commission for Refugees (UNHCR) had 9.7 million refugees under their mandate, most of whom stayed in Asia or Africa, near their home countries.¹ Some refugees, however, manage to travel legally or illegally to the European Union (EU) countries to seek asylum there. The right to seek asylum is embodied in the Universal Declaration of Human Rights, which states 'everyone has the right to seek and to enjoy in other countries asylum from persecution'.² An asylum seeker can obtain asylum if he/she meets the United Nations (UN) Refugee Convention's definition of a refugee, as someone who has a 'well founded fear of persecution on the grounds of race, religion, nationality, membership of a particular social group, or political opinion'.³

Figure 1 shows the number of asylum applications from 2000 to 2004, distributed on 'old' and 'new' EU countries and a total. The EU countries received a total of 282 480 new asylum applications in 2004. This represents a 19% drop in applications to EU countries compared with 2003. The trend is entirely due to a drop in asylum seekers in the 15 'old' countries, whereas the 'new' countries have experienced a slight increase.⁴ Asylum trends are determined by a host of suddenly changing factors, both in the region of origin and of destination. Therefore, the drop in applications to 'old' EU member states may partly be due to a total fall in the world's refugee population in 2004 and partly to more restrictive asylum policies in all the EU countries.¹ The majority of new asylum seekers in the EU in 2004 came from Russia (the majority of whom are Chechens), Serbia and Montenegro and Turkey. Meanwhile, the number of

claimants from Afghanistan and Iraq dropped by more than 80%. France was the main destination country for asylum seekers in the world in 2004. Compared with the national population size, however, Cyprus received the largest number of asylum seekers during 2000–2004, followed by Austria and Sweden.⁴ In addition to new applicants, hundreds of thousands of asylum seekers in the EU are waiting for a decision in their asylum case. At the end of 2003, the highest number of undecided cases among the EU countries was found in Germany (154 000), the Netherlands (45 000), and Sweden (35 000).⁴ Consequently, the total number of new applicants and undecided cases in the EU countries involves a significant number of people.

Knowledge about asylum seekers' health and access to health care services is still limited. We searched the PubMed database on March 21, 2005, using the keyword 'asylum seekers', and found only 310 references since 1986. Asylum seekers, however, constitute a vulnerable population due to a host of pre- and post-migration risk factors. Pre-migration factors include torture and refugee trauma, which may result in mental and physical illness.^{5,6} Moreover, asylum seekers often come from conflict areas, without access to adequate health services. Post-migration factors also play a role for health. They include: detention, length of asylum procedure, language barriers, and lack of knowledge about the new health care system.^{7–9} So far, literature on asylum seekers' health particularly concerns mental health problems and infectious diseases. Burnett & Peel¹⁰ reviewed the literature and found that one in six asylum seekers had severe physical problems and two-thirds had experienced mental problems. Prevalent physical problems included tuberculosis, HIV/AIDS, hepatitis A and B, parasitic diseases, and non-specific body pains. Mental health problems include depression and Post Traumatic Stress Disorder, which are due to traumatic experiences, including torture.^{11,12} In conclusion, asylum seekers are at the risk of having many and severe health problems of a varied nature.

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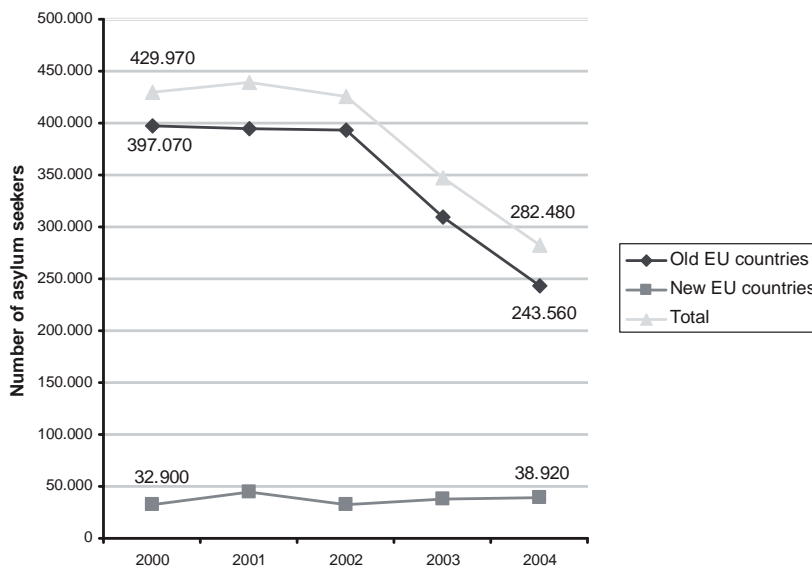


Figure 1 The number of asylum applications submitted in 'old' and 'new' EU countries, 2000–2004. Source: UNHCR. Asylum levels and trends in industrialised countries. Geneva: UNHCR, 2004 (Available at: www.unhcr.ch)

Literature on asylum seekers' use of health care services and the barriers they face when seeking care is even scarcer. Asylum seekers, however, find themselves in a difficult situation as they are residing in a country—sometimes for years while waiting for a decision in their case—without necessarily having the same legal rights as citizens. In the meantime, they may face limitations on access to health care compared with the citizens. One might therefore fear that asylum seekers' already vulnerable health situation combined with possible restrictions on access to care may severely worsen their health. Consequently, we found it important to characterise and compare current standards of access to health care for asylum seekers in the 25 EU countries in order to identify the needs and potential for improving health care services in relation to asylum seekers. Our aim was to answer the following questions: (i) To what extent do medical screening programmes for newly arrived asylum seekers exist and how comprehensive are they? (ii) To what extent do asylum seekers have access to national health services upon arrival compared with the citizens?

Methods

The study is based on a questionnaire, which was sent to relevant ministries and NGOs in the 25 EU countries. We identified the ministry responsible for asylum seekers' health care for each country. Depending on the country, the ministry was related to interior affairs, health, social affairs, immigration, or foreign affairs. The ministries were contacted by phone to obtain e-mail addresses of relevant contact persons if possible. To ensure that relevant NGOs were contacted we used a list of NGOs under the network of the European Council for Refugees in Exile (ECRE). ECRE is an umbrella organization of refugee-assisting agencies in Europe working towards fair and humane policies for the treatment of asylum seekers and refugees.¹³ ECRE's list only provided personal mail addresses for 65 NGOs. In total 25 ministries and 104 NGOs received the questionnaire by e-mail. Respondents answered by e-mail or regular post. The questionnaire was sent on April 19, 2004, allowing a response time of 4 weeks. A reminder was sent out on June 3, 2004. Likewise, allowing a response time of 4 weeks. We received 36 responses, divided on 15 ministry and 21 NGO responses. Eight e-mails were returned because of errors in the address or

by people who did not possess the adequate knowledge to answer the questionnaire. This amounted to a response rate of 30% (36/121) distributed as follows: ministries 60% (15/25) and NGOs 20% (21/104). In total, we received either an answer from a ministry and/or one or more NGOs for 24 out of the 25 countries. Portugal is the only country from which we did not get any responses.

The questionnaire referred to how conditions were on April 1, 2004. It was divided into two parts. The first part was concerned with the access to medical screening programmes for asylum seekers and the second part was concerned with access to general health care for asylum seekers. In case of conflicting answers from two or more respondents from the same country, we decided to exclude those responses from our analysis (as shown in the tables).

Results

Medical screening

Medical screening of newly arrived asylum seekers existed in all the responding EU countries but Greece. But, differences were found in the way medical screening was carried out. In some countries, like the Nordic, medical screening was systematically offered to all new asylum seekers, whereas in other countries, such as Austria, France, Spain, and Britain, it was only carried out in the so-called induction or reception centres. Newly arrived asylum seekers who do not enter these centres access medical screening randomly. In Greece, medical screening was only offered to asylum seekers, who applied for a work permit. According to the respondents, regional variations in the provision of medical screening also existed within countries. This was the case of Italy and Germany. For Italy it was not explained in detail, but for Germany it was related to the federal states, which individually decided if they wished to provide screening or not.

Table 1 shows our results regarding access to specific medical screening programmes, including HIV and tuberculosis (TB) screening as well as physical and mental examinations and other screenings. Table 1, moreover, shows whether these screening programmes were carried out on a compulsory or voluntary basis. Greece was excluded from the table because no screening programmes existed for asylum seekers upon

Table 1 Access to specific medical screening programmes in the 25 EU countries—on compulsory and voluntary basis. (n = 23 in the table as Greece was excluded)

	Screening				No screening	
	Compulsory	Voluntary	Total	%	Total	%
HIV	5	14	19 (23)	83	4 (23)	17
TB	12	10	22 (23)	96	1 (23)	4
Physical ^a	6	11	17 (22)	77	5 (22)	23
Mental ^b	3	8	11 (18)	61	8 (18)	39
Others ^c	4	8	12 (19)	63	7 (19)	37

a: Germany excluded due to ambiguous responses regarding physical health screening

b: Denmark, Estonia, Germany, Hungary, and Luxembourg excluded due to ambiguous responses or no responses regarding mental health screening

c: Estonia, Germany, Hungary, and Slovenia excluded due to ambiguous responses or no responses regarding 'other' screenings

arrival. Table 1 is therefore based on 23 countries. Countries with ambiguous or no responses were excluded, which explains the different number of total countries in the table. HIV screening was carried out in a total of 19/23 (83%) countries. HIV screening was compulsory in 5/19 (26%) countries, and voluntary in 14/19 (74%) countries. It is important to add, however, that in Germany HIV screening was only compulsory in certain states, and in the Czech Republic it was only compulsory for pregnant women and in Spain only in reception centres. As for TB screening, this was carried out in 22/23 (96%) countries. TB screening was carried out on a compulsory basis in 12/22 (55%) countries. Again, in countries such as Austria, Britain, and Spain, TB screening was only compulsory for asylum seekers accommodated in induction or reception centres. In the Netherlands, TB screening was carried out on arrival and again after 6, 12, 18, and 24 months. Only the first of these five screenings was compulsory.

In 17/22 (77%) countries physical examination was part of the screening programme. Mental health was the least frequent screening component, and was only carried out in 11/18 (61%) countries. Screening programmes other than the above mentioned were carried out in 12/19 (63%) countries. According to the respondents, 'other' screening programmes include children's vaccination programmes, stool test for bacteria and parasites, hepatitis B, syphilis, and malaria. In all countries screening was financed by the government. Screening was carried out by the authorities in all countries, but Denmark where Danish Red Cross carried out all screening of asylum seekers.

Access to health care

The second part of the survey was concerned with legal restrictions in access to health care for asylum seekers at the time of their arrival compared with the citizens in the host country. The results are shown in Table 2. The table is based on all 24 responding countries. Again, countries with ambiguous or inadequate responses were excluded, which explains the different number of totals in the table. Access might differ for children and pregnant women compared with adults, because they are considered more vulnerable and thus have more rights. We, therefore, asked the respondents about access for all the three groups. In total there were legal restrictions in access to health care for pregnant asylum seekers compared with citizens in 5/21 (24%) countries. Legal restrictions for children and adults were found in, respectively, 7/23 (30%) and 10/23 (43%) countries. In total, we found legal restrictions in access to health care for one or more of the three groups in 10/23 (43%) countries. These countries were Austria, Denmark, Estonia, Finland, Germany, Hungary, Luxembourg, Malta, Spain, and Sweden. In all countries, except

Table 2 Legal restrictions in access to health care for asylum seekers at the time of their arrival compared with citizens in the host country

	Number of countries				Total N
	Restrictions		No restrictions		
	N	%	N	%	
Pregnant ^a	5	24	16	76	21
Children ^b	7	33	16	67	23
Adults ^c	10	43	13	57	23
Total ^d	10	43	13	57	23

a: Denmark, Germany, and Slovakia excluded due to ambiguous responses regarding access to health care for pregnant women

b: Slovakia excluded due to ambiguous response regarding access to health care for children

c: Slovakia excluded due to ambiguous response regarding access to health care for adults

d: The total shows number of legal restrictions in access to health care for one or more of the three groups. Slovakia excluded due to ambiguous responses for all three groups

Austria, legal restrictions were due to the fact that asylum seekers were only entitled to emergency care. In Austria the legal restriction laid in the fact that asylum seekers were entitled to emergency care only, if they left the reception centre before they were assigned residence in a federal state. Later, if they travelled or moved to other federal states, they could also only receive emergency care.

The absence of legal restrictions to access does not necessarily imply equity in access as practical barriers may hinder this. We identified a number of practical restrictions in access to care. According to our responses, practical restrictions could overall be divided into (i) lack of awareness of available health care services, (ii) language barriers, (iii) cultural barriers, and (iv) structural barriers. Lack of awareness of availability of services was due to insufficient or no information to asylum seekers about the health care system in the host country. Language barriers were especially related to inadequate provision and education of interpreters. Cultural barriers were related to different ways of viewing illness and the role of health care providers versus patients. Two structural barriers were mentioned more than once. Firstly, services dealing with the specific needs of asylum seekers were considered inadequate. This especially was concerned with the access to treatment for traumatised

asylum seekers. Secondly, in Austria and Greece, asylum seekers needed respectively a medical card and an identity card before they had access to health care services. In both countries, however, it could take several months before they received the card, due to bureaucratic delays.

Respondents were also asked whether the legal access to health care for asylum seekers changed over time. This was only the case for Germany, Luxembourg, Spain, and Malta. In Germany asylum seekers got full access to care in the same way as the citizens after 36 months of arrival. In Luxembourg asylum seekers got access to care in the same way as the citizens after 3 months and in Spain as soon as they registered at the Town council, where they lived and applied for a social security card. Malta did not describe the nature of the change in status.

Respondents were further asked whether access to specialised treatment for traumatised asylum seekers existed in their country. In Cyprus, Latvia, and Luxembourg, specialised treatment for traumatised asylum seekers did not exist at all. In the remaining 21 countries some kind of access to specialised treatment for traumatised asylum seekers existed.

Discussion

Our results should be interpreted with caution as they are based on simple comparisons of different, complex health systems. Asylum law, moreover, is multifaceted and continually changing within the EU countries. Consequently, the study only serves to provide a rough picture.

To get a nuanced and more valid representation, we approached both ministries and NGOs as they might have expressed different opinions. But, we found a high degree of agreement between the ministry and NGO responses. Therefore, we instead decided to exclude the few exceptions from our analysis. We received answers from 15 ministries and 21 NGOs, representing 24 out of 25 countries. Our total response rate was 30%, distributed as follows: ministries 60% (15/25) and NGOs 20% (21/104). The low response rate was probably due to several factors. Firstly, the questionnaire may have been sent to a person in a ministry or NGO, who could not answer it, but did not pass it on. We tried to avoid this by identifying relevant persons and organizations on before hand. We had, however, more difficulties identifying key persons in NGOs compared with ministries. This also relates to the validity of the study. One must expect that even for the respondents, who indeed answered the questionnaire, knowledge on the specific topics have most probably been varying, some have had deep knowledge and others more peripheral. This may have resulted in the fact that answers were conflicting for some countries. In that case, we excluded the country from the analysis in question. We finally tried to ascertain the validity of our answers by sending our preliminary results to all the respondents. As a result minor corrections were made in the case of four countries.

Firstly, our findings showed that medical screening was provided upon arrival to asylum seekers in all the 24 included EU countries but Greece. In some countries it was systematically offered to all new asylum seekers, whereas in others it was only provided to asylum seekers living in reception centres. Medical screening may be available for asylum seekers living outside the centres, but using it depends on individual initiative and there might be a number of barriers. Consequently, it is far from all asylum seekers who are medically screened upon arrival in the EU, although the majority of countries offered some kind of medical screening. The extent of medical screening also varied within countries. In Italy and Germany, various regions and federal states had autonomous policies regarding medical screening of asylum seekers.

Secondly, we found that medical screening programmes differed in their content from one EU country to another. For example, TB screening was included in the screening programmes of all countries but one, whereas screening for mental health problems was carried out in less than half the countries. Overall, medical screening programmes appear to have two aims. One is to secure the well being of asylum seekers, and the other to guarantee the safety of the population in the host country. The content of the screening programmes is likely to depend on how the country priorities these aims. For example, screening for infectious diseases seems more related to the safety of the host population and mental health screening more to the well being of asylum seekers.

Regarding access to health care, we firstly found that access was restricted to only emergency care at the time of arrival in 10 countries. The results, however, do not show, if some countries offered alternative measures in case of chronic illness. We know this was the case in Denmark, where immediately necessary or life saving treatment of chronic illnesses may be covered by the Danish Immigration Service.

Restricting access to emergency care is, however, not unproblematic. It may lead to an accumulation of health problems, which—apart from the human costs—may prove expensive for societies if inpatient treatment is required at a later date. Moreover, excluding patients with communicable diseases such as HIV from treatment is against the public health policy of most countries. In Britain an alternative way of restricting access for some asylum seekers was recently introduced by charging services. Charging, however, seems unethical and unrealistic as asylum seekers in many EU countries are prohibited from working. Paradoxically, the health care systems of several of the most restrictive EU countries are built on policies based on equity in access. An important aspect of equity in access is, however, to ensure the medical rights of vulnerable and marginalised groups in our societies.

Secondly, we found that asylum seekers faced a number of practical barriers when seeking health care. Most of the barriers were concerned with immigrant populations in general, and are related to language, culture, and lack of information about the health care system in the host country. But, practical barriers specific for asylum seekers were also identified. The most severe of which include waiting for months or years on paperwork that will ensure access to health care, while only having access to emergency care in the meantime. Additionally, the literature shows that asylum seekers' access to health care may be compounded by other barriers, such as confinement in detention centres,⁹ and dispersal policies leading to disruptive and compromised care.¹⁴ Unfortunately, problems due to legal and practical barriers to access are compounded when the process of acquiring refugee status takes many months, or, in some cases, years.

Thirdly, we found that legal access to health care services changed over time for asylum seekers in three countries. We specifically referred to changes during the asylum seeking procedure itself. But, several respondents spontaneously added that asylum seekers' rights to health care were immediately restricted to emergency care if their application was refused. Failed asylum seekers may likewise be stripped of the other rights in an attempt to force them out of the host country. Ironically, failed asylum seekers include persons who cannot return because their countries are deemed unsafe by UNHCR. Britain is one of the countries using increasingly restrictive measures towards failed asylum seekers. Failed asylum seekers used to have free access to NHS, but since 2004 they cannot obtain free secondary health care, and primary health care may also soon be withdrawn.¹⁵

Finally, we showed that access to specialised treatment for tortured and traumatised asylum seekers exists in all countries but Latvia, Luxembourg, and Cyprus. The study, however, does

not document the quantity and quality of the programmes in each country. What we know is that in some countries, asylum seekers' treatment in rehabilitation centres is not covered by the state, but rather must be paid for through grants and donations. As a result, treatment centres are scarce and have huge waiting lists.¹⁶ In other countries, rehabilitation centres only treat refugees with residence permits for financial and therapeutic reasons, leaving asylum seekers without specialised help.¹⁷

To heighten the standards and minimise the heterogeneity of services across Europe, one might wish for a coordinated effort regarding asylum seekers' access to health care services. In 2003, an EU directive was launched as part of an effort to harmonise the reception of asylum seekers within the EU.¹⁸ All EU countries should have incorporated the articles of the directive into the national law before February 2005. The articles of the directive provide minimum conditions for different aspects of asylum seekers' access to health care. Concerning medical screening it states that 'member states may require medical screening for applicants on public health grounds'. This does not oblige member states to provide medical screening for asylum seekers, neither does it lay out important minimum contents of medical screening. The paragraph therefore seems to be without consequence, and if anything it is more focused on protecting nationals than asylum seekers.

Regarding access to health care, the EU directive states that 'member states shall ensure that applicants receive the necessary health care, which shall include at least emergency care and essential treatment of illness'. It is unclear what is meant by 'essential treatment'. This paragraph may serve to heighten the standard of some countries. On the other hand it allows other countries to lower their provisions of health care to emergency care only. The last paragraph states 'member states shall provide necessary medical or other assistance to applicants who have special needs'. Applicants with special needs include minors, pregnant women, and single parents with minor children, elderly, victims of torture, and other vulnerable people. This will clearly require some countries to enhance their level of health service provision for asylum seekers. The paragraph, however, could have been more explicit in its requirements of what constitutes 'necessary medical or other assistance'.

The directive constitutes an attempt towards the development of a common European asylum system. It does provide asylum seekers with certain minimum reception standards regarding access to health care, which the member states are obliged to fulfil. On the other hand the flexible and general character of the articles allow member states to maintain very different national policies that in some cases may fall short of an adequate standard of health care. The directive, moreover, does not embrace all people in the asylum seeking process, such as failed asylum seekers. Especially, in the light of the falling number of asylum seekers, most governments should be able to devote more attention to improving their asylum systems from the point of view of protecting the refugees.

In conclusion, the provision of health care for asylum seekers in the EU countries appears heterogeneous and often based on minimum standards. The existing EU guideline uses broad terms that essentially are without consequences for most member states. Therefore, it is still mainly up to individual member states to protect asylum seekers and ensure that they are given the same medical rights as we take for granted as citizens.

Key points

- The study investigates standards of health care provision for asylum seekers compared with citizens in the 25 EU countries.
- Medical screening of asylum seekers exists in nearly all EU countries, but the content and comprehensiveness show large variations.
- In almost half of the countries, access to health care for asylum seekers is legally restricted to emergency care only.
- European health policy makers should ensure access to health care for asylum seekers comparable with the medical rights of citizens.

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