

# DRO

Deakin University's Research Repository

## This is the published version

Hanna, L. and Bhopal, R. 2004, Assessing cultural and linguistic appropriateness of the Rose Angina questionnaire in three ethnic groups, in Migrant health in Europe : International conference on differences in health and health care provision, Taylor & Francis, [Rotterdam, The Netherlands], pp. S12-S13.

## Available from Deakin Research Online

<http://hdl.handle.net/10536/DRO/DU:30023685>

Reproduced with the kind permission of the copyright owner

**Copyright:** 2004, Taylor & Francis

This article was downloaded by: [Deakin University]

On: 27 August 2010

Access details: Access Details: [subscription number 907464590]

Publisher Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## Ethnicity & Health

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713421971>

**Wednesday 23 June 2004: 15.45-17.15**

**To cite this Article** (2004) 'Wednesday 23 June 2004: 15.45-17.15', *Ethnicity & Health*, 9: 3, S6 — S21

**To link to this Article:** DOI: 10.1080/1355785042000228387

**URL:** <http://dx.doi.org/10.1080/1355785042000228387>

## PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

**Wednesday  
23 June 2004**

15.45-17.15

## Health care utilisation

### Contact pattern with general practice and emergency rooms by immigrants and non-immigrants in Copenhagen

Dyhr L, Andersen JS, Engholm G

Central Research unit of General Practice and Department of General Practice, Institute of Public Health, University of Copenhagen

*Correspondence address:* Lise Dyhr, Central Research unit of General Practice Panum Institute, 3 Blegdamsvej, DK-2200 Copenhagen N, Denmark. E-mail: L.Dyhr@gpract.ku.dk

**Introduction.** *In Copenhagen the immigrants share of the population are 11%. Many immigrants are not used to the Danish primary health care system, have other health beliefs and probably different health problems. Little is known about the contact rates of immigrants to general practice and emergency rooms in Denmark.*

**Methods.** *Contacts by all 447,573 inhabitants living in Copenhagen throughout 1998: 2,1 million daytime contacts in general practice, 210,680 out of hours services and 118,250 attendances to emergency rooms recorded in The Health Insurance- and The National Register of Patients was merged with information about citizenship and place of birth in The National Register. Immigrants were defined as persons with more than 3 months residence permit, foreign citizenship and/or place of birth outside Denmark. Immigrants were categorized into four subgroups (refugees: Iran/Iraq, Somalia, Palestine, The Balkans; questworkers: Turkey, Morocco, Pakistan and ex-Yugoslavia; western and other countries). Main outcome measures: Contact rate ratios (all services, telephone consultations, clinic consultations). The differences were quantified using Poisson regression.*

**Results.** *Immigrants and non-immigrants showed nearly the same contact pattern in relation to sex and age, but the level for immigrants was 13% lower. Compared to non-immigrants children of immigrants had lower contact rates, male refugees aged*

20-59 years higher contact rates, guest workers and refugees > 60 years old much lower contact rates. The contact rates with the acute services were lower for all groups of immigrant children. For persons aged 19-59 the contact rates for out-of-hours service and emergency rooms were higher for guest workers and refugees. The share of telephone consultations in the daytime and the out-of-hours service was lower for guest workers and refugees.

**Conclusion.** Significant differences were found for immigrants compared to non-immigrants. Further research into immigrants' needs for health care is recommended to see whether equity is achieved.

### More hospital admissions in migrant than in autochthonous groups in the Netherlands

Verweij G, de Bruin A  
Statistics Netherlands

*Correspondence address:* Statistics Netherlands, Department of Personal Data Registers, P.O. Box 4000, 2270 JM Voorburg, the Netherlands; e-mail: gvry@cbs.nl, abun@cbs.nl.

**Introduction.** New data have come available on migrant health in the Netherlands through record linkage of the Hospital Discharge Register (HDR) of Prismant with the Population Register (PR) by Statistics Netherlands. With the information in the PR, data on ethnic origin of the patient could be added to the information on hospital admissions from the HDR.

**Methods.** The HDR 1995-2001 was linked to the PR 1995-2001 on the basis of date of birth, sex and postal code of the patient. This resulted in 87.6% unique links, 8.7% multiple links and 3.6% not-linked records. Data on ethnic origin from the PR were added to the uniquely linked HDR-records. In order to let these uniquely linked records stand for the total population of HDR-records a weighting procedure was applied. In this procedure among others the different linkage probabilities of population groups by country of birth, year of birth, age and sex were taken into account. Admission data of different ethnic groups were compared by means of direct standardisation by age and sex and the population studied was limited to 0-50 years.

**Results.** The average age and sex adjusted number of hospital admissions in 1995-2001 was somewhat higher in population groups of Turkish, Moroccan and Surinamese origin than in autochthonous groups. Inpatient admissions as well as day treatments were highest among the Turks. The average admission duration decreased in the period 1995-2001 for all population groups, but was highest among the Surinamese people. Further results of differences according to diagnoses and type of hospital care will be presented on the conference.

**Conclusion.** *By means of linkage of national medical registers to the PR important additional information can be obtained on health of migrant population groups.*

### **Ethnic differences in the use of health care services**

Lanting LC, Bootsma AH, Lamberts SWJ, Mackenbach JP, Joung IMA  
Department of Public Health, Erasmus MC, Rotterdam

*Correspondence address:* L.C. Lanting, Department of Public Health, P.O. Box 1738 DR Rotterdam, The Netherlands, email: l.lanting@erasmusmc.nl

**Introduction.** *Ethnic differences in the use of health services have been described for other countries; however, for the Netherlands detailed data of these differences are missing. In our research ethnic differences in the use of outpatients' care are studied. In a second part of the study ethnic differences in reason for referrals and diagnosis are examined.*

**Methods.** *For one year (March 2002-March 2003) ethnicity, sex, age, referral reasons, diagnosis and living area of all new patients that visits the outpatient clinic of the Erasmus Medical Center in Rotterdam have been registered. Ethnicity is based on countries of birth of the patient and the patient's parents. Referrals are coded according to the International Classification of Primary Care (ICPC) and diagnosis according to the Diagnosis Treatment Combination (DCT). In the analysis Poisson regression was used.*

**Results.** *Turkish and Moroccan immigrants, living in the neighborhood of the Erasmus MC, make significantly more use of the outpatient clinic than native Dutch people (relative risk vs. native Dutch people resp. 1.70, 1.51). By increasing the living area to Rotterdam city and the Netherlands as a whole, these differences diminish and become non-significant.*

*Differences for other ethnic groups living in the neighborhood of the Erasmus MC, were non-significant. For two ethnic groups, Surinamese and Antillian/Aruban immigrants, differences become significant only after increasing the living area to the Netherlands. In three ethnic groups (Surinamese, Turkish and Moroccans) women make significantly more use of the health care services than the native Dutch women, while men—compared to native Dutch men—do not. In general the ethnic differences for first generation immigrants are larger than for the second-generation immigrants. For the second part of the project, the assessment of differences in referral and diagnosis, the data collection is almost completed. Results will be presented at the conference.*

**Conclusions.** *Especially female and first generation migrants from Turkey and Morocco make significantly more use of the outpatients' care. By examining the reasons of referrals and diagnosis we expect to shed more light on these differences.*

## Differences in health care use between elderly immigrants and indigenous elderly

Denktaş S, Foets M

Erasmus Medical Center Rotterdam, Department of Health Policy and Management

*Correspondence address:* Erasmus Medical Center Rotterdam, Department of Health Policy and Management, P.O. Box 3000 DR Rotterdam the Netherlands, denk-tas@bmg.eur.nl

**Introduction.** *In the past decades, many Western countries became multiethnic societies. The number of elderly among immigrant groups is rapidly increasing. It is often suggested that they make less use of health care services than indigenous elderly. Aim: to review in a systematic way the literature on differences in health care use between elderly immigrants and indigenous people.*

**Methods.** *In order to identify differences in healthcare use between ethnic groups, we conducted a literature study for the years 1985-mid 2003, starting with search procedures in Medline, Psycinfo and Sociological Abstracts. We selected articles based on criteria related to the study participants and to the outcome measures.*

**Results.** *Studies on health care use among elderly immigrants are scarce. Regarding preventive services, in general use is lower among elderly immigrants. Regarding hospital admission there are different results: some studies found no differences between ethnic groups while other studies showed lower rates for some groups of immigrants. Consultations with medical specialists lower among some but not all immigrant groups as compared to indigenous elderly.*

**Conclusion.** *The general picture does not point clearly into the direction of lower or higher use, since it varies depending on health care types and immigrant groups under study. In addition, there may be methodological reasons for some of the differences we found. In the first place, there are differences in research methodology. In Europe, these studies are part of more general studies where elderly are only a part of the study population. On the contrary, in the United States separate studies on elderly have been found. A reason for this difference between European and American studies may be that the U.S. has been an immigrant society for a much longer time than European countries: in the latter the ethnic minority population does not yet include many elderly. Finally, differences in the organization of health care may also contribute to this indefinite picture.*

## Methodological problems (validation)

### Utilisation of prescription drugs among ethnic minorities: self-report versus registration data

Uiters E<sup>1</sup>, van Dijk L<sup>1</sup>, Devillé W<sup>1</sup>, Groenewegen PP<sup>1</sup>, Foets M<sup>2</sup>

<sup>1</sup>NIVEL, Utrecht, <sup>2</sup>iBMG, Erasmus MC, Rotterdam

Correspondence address: E. Uiters, Postbus 1568, 3500 BN Utrecht, The Netherlands, e.uiters@nivel.nl

**Introduction.** High utilisation of prescribed drugs among migrant groups living in the Netherlands have been reported in several studies. However, other studies reported that drug utilisation rates among ethnic minorities differ little, or are even lower, than in the indigenous population, especially after adjustment for SES or age. Contradictions between the results of the different studies might be related to the different data sources used in the various studies. Aim of our study was to examine to which extent differences in self reported drugs use between ethnic minorities and indigenous population concord with GP's prescription data.

**Methods.** Self-reported use of prescription drugs was assessed by means of face-to-face interviews. 1339 migrants from Turkey, Morocco, Surinam and the Netherlands Antilles and 12.699 respondents from the indigenous population were interviewed.

104 general practices registered every prescription of the GP to the interviewed patients during twelve months.

Multilevel analyses were applied to assess concordance between self-reports and GP's registration data.

**Results.** Registration data: Starting from the age of 25 years significantly more drugs are prescribed to Turkish, Surinam and Moroccan people than to the indigenous population. These differences are not related to type of insurance.

Self-report: Turkish, Antillean and Moroccan people report a lower use of prescriptions compared to the indigenous population. Utilization rate of Surinamese people was consistent with that from indigenous population.

**Conclusions** Utilization patterns based on GP's registration are not reflected in self-reported use patterns. Our results emphasise that ethnic differences in the use of prescription drugs cannot be interpreted without taking the data-collection method into consideration. A possible explanation for the differences between registration data and self-report data is a lower compliance level among the ethnic minority groups studied. However, further research on this topic remains necessary.



## Effect of data collection mode and ethnicity of interviewer on response rates and self-reported alcohol use among Turks and Moroccans in the Netherlands: an experimental study

Dotinga A<sup>1</sup>, van den Eijnden RJJM<sup>1</sup> Bosveld W<sup>2</sup>, Garretsen HFL<sup>1</sup>

<sup>1</sup>Addiction Research Institute Rotterdam (IVO) Rotterdam <sup>2</sup>The Amsterdam Bureau for Research and Statistics (O + S) Amsterdam

Correspondence address: Addiction Research Institute Rotterdam (IVO), Heemraadssingel 194, 3021 DM Rotterdam, dotinga@ivo.nl,

**Introduction.** *Methodological problems accompany alcohol research among Turks and Moroccans in the Netherlands. Therefore, the validity of conclusions drawn from alcohol studies among these groups has been questioned. The aim of the present study was to gain more insight into the reliability and validity of results from different data collection modes. More specifically, the effect of data collection mode (i.e. face-to-face interview vs. mailed survey) and ethnicity of interviewers (i.e. Dutch vs. Turkish/Moroccan) on response rates and alcohol reports was tested among second-generation Turks and Moroccans in Rotterdam.*

**Methods.** *An experimental study was performed in which 269 Turks (n = 744) and 271 Moroccans (n = 753) were interviewed face-to-face, of which half was ethnically matched to the interviewer and the other half was allocated to a Dutch interviewer. The remainder of both samples received a mailed questionnaire.*

**Results.** *Moroccans more often responded to a face-to-face interview than to a mailed questionnaire whereas no effect of method on response rates was found among Turks. Furthermore, no effect of ethnicity of interviewer on response rates was demonstrated. With regard to effects on alcohol reports, Moroccans reported higher alcohol use in the mailed survey compared to the face-to-face interview, whereas no effect of method on alcohol reports was found among Turks. However, among Turks a higher prevalence of alcohol use during the past six months was reported when interviewed by a Dutch interviewer compared to an ethnically matched interviewer. Among Moroccans, no effect of the ethnicity of the interviewer on alcohol reports was found.*

**Conclusions.** *Among second-generation Moroccans, mail surveys seem most suitable to measure alcohol use. However, among second-generation Turks, interviews held by Dutch interviewers seem to be the most appropriate method to study the prevalence of alcohol use.*

## The use of tobacco and related substances in ethnic minorities: The development of a culturally valid measure

Hunt S, Hanna L, Bhopal R, Amos A  
Public Health Sciences, University of Edinburgh

*Address for correspondence:* Lisa Hanna, Public Health Sciences, University of Edinburgh, Medical School, Teviot Place, EH8 9AG, E-mail: Lisa.Hanna@ed.ac.uk

**Introduction.** *Internationally, there is a drive for equality in health care for all ethnic and migrant groups. To achieve this, good quality data are essential. When data collection instruments designed for speakers of one language are simply translated into other, ethnic minority languages, measurement error can result from inadequate translation procedures, inappropriate content, insensitivity of items and the failure of researchers to familiarise themselves with cultural norms and beliefs. This was recently demonstrated by us for tobacco and alcohol surveys in the UK. We have also discussed guidelines on maximising cross-cultural comparability. When data are used to make comparisons, the questions asked must be conceptually equivalent and appropriate for all groups compared. This paper will report on ongoing research to improve national questionnaires on self-reported use of tobacco and related substances. Objectives: to ascertain which are the key questions in existing survey instruments; to assess cultural acceptability and sensitivity of the questions; to test the conceptual equivalence of the questions in each of four languages.*

**Methods.** *Project workers who are bi-lingual in English and Cantonese, Bengali/Sylheti, Punjabi or Urdu have been recruited to interview 10 representatives of each language group. Participants are encouraged to comment upon the linguistic and cultural appropriateness of the translated questionnaire items. The 40 people being recruited will form panels to be consulted throughout the project.*

**Results.** *A translated tobacco-related questionnaire has been developed. Early results indicate challenging methodological issues to be addressed in working through bi-lingual workers without direct control of the process by the researchers. Both translation problems and cultural insensitivities have been uncovered. The process of cross-cultural adaptation is extremely difficult.*

**Conclusions.** *Implementing guidelines on achieving cross-cultural comparability is essential in public health research, but is surprisingly arduous. Pooling of field experience, expertise and resources is needed to ease the task in Europe.*

### **Assessing cultural and linguistic appropriateness of the Rose Angina questionnaire in three ethnic groups**

Hanna L, Bhopal R  
Public Health Sciences, University of Edinburgh

*Address for correspondence:* Lisa Hanna, Public Health Sciences, University of Edinburgh, Medical School, Teviot Place, Edinburgh, Scotland EH8 9AG, Lisa.Hanna@ed.ac.uk

**Introduction.** *Meeting the needs of migrant groups in Europe requires cross-culturally valid questionnaires, a substantial challenge to researchers. The Rose Angina Questionnaire (RAQ) is an important measure of coronary heart disease prevalence. It consists*

of seven items that collectively yield a diagnosis of angina. It has been shown to perform inconsistently across some ethnic groups in Britain. This study aimed to assess the need for modifying the RAQ for cross-culturally valid use in the three main ethnic groups in Scotland.

**Methods.** Interviews were carried out with Pakistani Punjabi speakers ( $n = 26$ ), Chinese Cantonese speakers ( $n = 29$ ) and European-origin English speakers ( $n = 25$ ). Bilingual project workers interviewed participants and provided translation and commentary to the English-speaking researcher. Participants were asked about general and cardiovascular health beliefs and behaviours, and about attitudes to pain and chest pain. They were also asked to comment on their understanding of an existing version of the RAQ in their language.

**Results.** No dominant themes in the cultural construction of health, pain or cardiovascular knowledge emerged that may significantly influence RAQ response between language groups. Problems were encountered with the Punjabi and Cantonese translations of the RAQ. For example, the translation for "chest" was interpreted by some Pakistani and fewer Chinese women to mean "breasts". "Walking uphill" was translated in Chinese as "walking the hill", without stipulation of the direction, so that some Cantonese speakers interpreted the question as meaning walking downhill. In addition, many Chinese interpreted RAQ items to be referring to breathlessness rather than chest pain due to ambiguous wording.

**Conclusion.** Existing Punjabi and Cantonese versions of the RAQ should be modified before being used in multi-ethnic surveys. Current versions are unlikely to be yielding data that is comparable across groups. Other language versions also require similar investigation to study the cardiovascular health of Europe's migrant groups.

## Mortality (1)

### Ethnic differences in infant mortality in relation to degree of acculturation

Troe JWM<sup>1</sup>, Bos V<sup>1</sup>, Kunst AE<sup>1</sup>, Keij-Deerenberg IM<sup>2</sup>, Mackenbach JP<sup>1</sup>, Joung IMA<sup>1</sup>

<sup>1</sup>Department of Public Health, Erasmus MC, University Medical Centre, Rotterdam

<sup>2</sup>Statistics Netherlands

Correspondence to: J.W.M. Troe, Department of Public Health, Erasmus MC, University Medical Centre Rotterdam, P.O. Box 1738, 3000 DR Rotterdam, The Netherlands, j.troe@erasmusmc.nl.

**Introduction.** In many western countries ethnic differences in infant mortality are seen. In the Netherlands a growing number of parents of infants are from the second

generation (born in the Netherlands). Being born and/or growing up in the Netherlands could have given these groups a more favourable position compared to foreign-born (first generation) minorities. We used generation, duration of stay and age at immigration of the mother as measures of 'degree of acculturation'. We examined whether infant mortality was associated with degree of acculturation.

**Methods.** We analysed data of Statistics Netherlands (CBS) from 1995 until 2000. Age at immigration of mother was divided in: born in Netherlands, 0-16 years and > 16 years. Length of stay of the mother was divided in: born in Netherlands, > 10 years and < 10 years.

We used Cox proportional hazard analysis to study differences in infant mortality. We adjusted for, socio-economic status, parity and age of the mother.

**Results.** The mortality of Surinamese infants of second generation mothers was comparable to infant mortality of native Dutch mothers, and 50% lower than of first generation mothers. In Antillean/Aruban infants the same trend was seen, but the differences didn't reach significance. No trends were seen with duration of stay or with age at immigration of the mother. For Turkish and Moroccan infants equally increased mortality rates were seen for all groups. Adjustment for legitimacy of the infant, socio-economic status, parity and age of the mother hardly had an effect on the estimated risks.

**Conclusions.** No indications were found that the excess infant mortality rates of migrant mothers in the Netherlands improved with a longer duration of stay or a younger age at immigration of the mother. Only if the mother herself was born in the Netherlands (i.e. 'second generation') more favourable infant mortality rates were found for Surinamese infants, but not for Turkish or Moroccan infants.

## **Perinatal mortality among immigrants from Africa's horn in Sweden**

Essén B

Dept of ObGyn University Hospital MAS

Address for correspondence: Dept of ObGyn University Hospital MAS, SE-205 02 Malmö, Sweden. Birgitta.Essen@obst.mas.lu.se

**Introduction.** Arising the question whether there is a difference in pregnancy outcomes between foreign and Swedish-born women, we explored the effects of maternal country of origin on the risk of perinatal mortality. The results from three different methods and materials will be presented.

### **Methods.**

1. A cohort study of 16,088 of women, originated from 133 countries, delivering in a Swedish hospital, 1990-1995.

2. In searching for the mechanism behind the epidemiological observations, an anthropological in-depth interview of 15 Somali women was undertaken.
3. In order to test the generated hypothesis from the qualitative study, an audit of all perinatal deaths to mothers from Africa's Horn ( $n = 62$ ) was compared to a matched cohort of Swedish women ( $n = 113$ ).

### **Results.**

1. Increased risk of perinatal mortality was found among foreign-born women. After adjustment for risk factors, the finding only held true for women from Africa's Horn.
2. The qualitative study yielding the hypothesis that experiences of childbirth brought from their country of origin resulted in certain beliefs and pregnancy strategies of which Swedish caregivers were unaware. These factors, combined with miscommunication, may have occasioned sub-optimal care and the risk of perinatal mortality.
3. Sub-optimal factors associated with perinatal mortality were noted with significantly greater frequency among the immigrants from Africa's Horn. The audit showed that potentially avoidable deaths could be related to maternal pregnancy strategies (avoiding c-section or not seeking care when needed), deficiencies in medical care (inadequate surveillance), and miscommunication.

**Conclusions.** The higher incidence of perinatal mortality appears to be due to an unfortunate interaction between pregnancy strategies practices by immigrants and the performance of Swedish health care. The pregnancy strategies were related to poor health care experience, and tradition regarding childbirth in their countries of origin. Lack of awareness of these circumstances could be linked to sub-optimal care. A greater familiarity among clinicians in the Swedish health care services with this background may decrease the risk of perinatal mortality among immigrant women.

### **Limitations of using country of birth as a proxy for ethnicity in studies of mortality**

Wild SH

Public Health Sciences, University of Edinburgh

*Address for correspondence:* Dr Sarah Wild, Public Health Sciences, University of Edinburgh, Teviot Place, Edinburgh EH8 9AG

**Introduction.** Routine data sources available to investigate ethnic differences in health are limited. Data on ethnicity were first collected in a UK census in 1991. Only country of birth (and not ethnicity) is recorded on death certificates. Mortality analyses have therefore mostly been restricted to using country of birth as a proxy for ethnicity. The purpose of this study was to undertake some simple sensitivity analyses to investigate the potential limitations of this approach.

**Methods.** 1991 census data for age, sex, country of birth and ethnicity and mortality

data by age, sex, country of birth and cause of death for 1989-1992 were obtained from the Office for National Statistics. Mortality ratios (SMRs) were estimated using indirect standardisation. Sensitivity analyses were undertaken using various assumptions about the mortality experience of groups for which country of birth was not a reliable proxy measure of ethnicity. The example of ischaemic heart disease (IHD) (ICD-9 codes 410-414) mortality among Indian men is shown to illustrate the results.

**Results.** The SMR (95% CI) for IHD for 20-74 year old men born in India was 142 (137-147). If the number of deaths among men under 50 years of age was adjusted by 57% (the proportion of Indian men born outside the UK) the SMR rose to 151 (146-158). If this factor were applied across all age groups the SMR rose to 249 (242-256).

**Conclusion.** SMRs that are estimated by country of birth effectively assume that the mortality experience of second-generation migrants is the same as that of the general population. It is further research is required to investigate the validity of this assumption.

### **Avoidable mortality and ethnic origin in the Netherlands**

Stirbu I, Kunst AE, Bos V, Mackenbach JP  
Department of Public Health, Erasmus MC, Rotterdam

Address for correspondence: Erasmus MC, Department of Public Health, PO Box 1738, 3000 DR, Rotterdam Email: irina\_stirbu@yahoo.com

**Introduction.** Previous studies showed large variations in the mortality rates of ethnic minority groups as compared to the native population of different countries. The healthcare system might play a role by providing unequal access and quality of services to minority groups. That can be examined by exploring the differences in 'avoidable' mortality. Objectives: to investigate the association between the level of mortality from 'avoidable' causes and ethnic origin in the Netherlands and to identify factors that contribute to this association.

**Methods.** Data were obtained from the cause of death registries that comprises all legal residents of the Netherlands in the period 1995-2000. We compared deaths rates for selected avoidable conditions for Turkish, Moroccan, Surinamese and Antillean/Aruban ethnic groups to native Dutch.

**Results.** We found elevated risk in the overall level of 'avoidable' mortality for ethnic minorities (RR = 1.21). However, the risks of death are not equal for different ethnic groups: Surinamese and Antillean/Aruban population are in more disadvantage position (RR = 1.65 and 1.31 respectively) compared to Turkish and Moroccan. Cause-specific

examination shows higher risks of death from almost all infectious (most  $RR > 3.0$ ) and several chronic conditions for ethnic minorities compared to Dutch. Risk of death from asthma, diabetes, cholecystitis/lithiasis and cerebro-vascular disorders remained even after adjustment for socioeconomic factors (most  $RR > 1.7$ ). Ethnic women bear a higher risk of death from maternity-related conditions ( $RR = 3.37$ ). Recent male immigrants have higher risks of death and female lower risk of death from 'avoidable' conditions compared to those who resided longer than 15 years in the Netherlands.

**Conclusion.** Total avoidable mortality for ethnic minorities is higher compared to Dutch population. Surinamese and Antillean population are in more disadvantaged position. Yet the study provides no clear evidence for overall healthcare system inequalities for ethnic minorities. Presented data, nevertheless, introduce opportunities for improvement within specific sectors of the system targeted to disadvantaged groups.

## Diabetes

### The influence of beliefs about health and illness on foot care in diabetic subjects having severe foot lesions: A comparison of foreign- and Swedish-born persons

Hjelm K<sup>1,2</sup>, Nyberg P<sup>3</sup>, Apelqvist J<sup>4</sup>.

<sup>1</sup>Department of Health Science and Social Work, University of Växjö, Sweden.

<sup>2</sup>Department of Health Science and Social Work, University of Växjö, Sweden and Department of Community Medicine, University of Lund, Sweden. <sup>3</sup>Department of Caring Sciences, University of Lund, Sweden. <sup>4</sup>Department of Diabetes and Endocrinology, Malmö University Hospital, Sweden.

**Introduction.** Migration has increased throughout the world, with an increased need for information about the consequences for health problems in chronic disease, such as diabetes mellitus. Almost one fifth of the inhabitants in Sweden have a migrant background, second generation included. The migrant population is a mixture of more than 120 nationalities although dominated by European labour force migrants. Beliefs about health and illness in persons with diabetic foot ulcers in different migrant groups has not been investigated before, despite the fact that subjective beliefs affect self-care, care-seeking behaviour and thus health. The aim of the present study was to explore beliefs about health and illness in foreign-and Swedish-born diabetic men with severe diabetic foot lesions.

**Methods.** A consecutive sampling procedure was used. Focus-group interviews were held (between March 1999 and January 2002) with 11 Swedish-born men and individual interviews with 15 foreign-born men, aged 38-74 years (mainly of European origin) with

present or previous diabetic foot lesions managed at two in-hospital based diabetes clinics, at university hospitals in Sweden.

**Results.** *The study showed that foreign-born men often related the ulcer to work-related accidents outside their own control, perceived the occurrence of an ulcer as a trifle, stated lack of information about foot care and management of diabetes mellitus, showed a passive self-care behaviour and visited health professionals in case of new foot problems. Swedish-born men claimed more foot problems, expressed great fears and anxiety when having an ulcer, had a higher level of knowledge about foot care, showed an active self-care behaviour and tried to prevent foot ulcers. For all respondents, despite origin, foot lesions caused deterioration of perceived health and quality of life due to decreased level and ability to be active.*

**Conclusion.** *Beliefs about health and illness differed between Swedish-and foreign-born men and affected self-care and care seeking behaviour. Individual beliefs need to be considered in prevention and management of the diabetic foot. Many patients, especially foreign-born, have an underutilised potential for self-care measures.*

### **Ethnicity and gender are strong predictors for diabetes in an urban western society– implications for prevention**

Jenum AK<sup>1</sup>, Holme I<sup>2</sup>, Birkeland KI<sup>3</sup>

<sup>1</sup>Norwegian Institute of Public Health <sup>2</sup>Norwegian University of Sport and Physical Education <sup>3</sup>Aker University Hospital, Oslo

*Address for correspondence:* Norwegian Institute of Public Health, P.O. Box 4404 Nydalen, N-0403 Oslo,

**Introduction.** *Ethnic origin may indicate different susceptibilities for disease due to genetic factors or different exposure for environmental risk factors. The aim of this study is to identify subgroups at special risk of developing type 2 diabetes in an urban western society.*

**Methods.** *We performed a population based cross-sectional survey of 31-67 year olds in a multi-ethnic district in Oslo, collecting data from questionnaires, physical examination and serum analyses. Subjects with non-fasting serum glucose (NFSG) (6.1 mmol/l were asked to return for a fasting sample. The prevalence of known diabetes was based on self-reported data. Undiagnosed diabetes was estimated from blood samples. Among 6123 invited, 2933 subjects (48%) attended, of whom 21.4% were immigrants. We now present data from subjects from the Indian subcontinent compared to subjects of Western origin.*

**Results.** *The prevalence of diabetes and several risk factors were significantly higher among subjects from the Indian subcontinent (Table 1). The male/female ratio in total*



**Table 1.**

	Indian subcontinent		Western	
	Men (N = 121)	Women (N = 90)	Men (N = 980)	Women (N = 1322)
Mean age (years)	43,1 §	41,9 §	49,7	48,6
Selfreported diabetes prevalence (%)	8,3	17,8*§	4,7	2,3*
Total diabetes prevalence (%)	14,2	21,1 §	8,8	3,6*
Body mass index (mean)	26,6 §	28,3 §	27,4	26,3
Prevalence of high education # (%)	23,7	20,5	23,7	18,9*
Prevalence of low net income & (%)	24,6 §	63,6*§	17,20	30,2*
No heavy physical activity (%)	50,5 §	64,0*§	35,0	40,7
Full fat milk daily (%)	36,1 §	34,9 §	10,9	10,1
Preference for softdrinks with sugar vs without (%)	80,4 §	62,9*§	66,9	50,4*
Daily smokers (%)	26,1 §	1,2*§	35,6	44,4*

\*  $p < 0.05$  Men versus Women

§  $p < 0.05$  Western versus Indian

# 12 years or more

& <NOK 150 000 (18 300 EURO) per year

*diabetes prevalence reverses from 0.6 in the Indian to 2.4 in the Western population. The age adjusted OR (mean and 95% CI) for total diabetes was 11 (5.77-21.05) for Indian compared to Western women, and 3 (1.61-5.42) for Indian men. After additional adjustment for the most potent anthropometric measure waist/hip ratio, the gender-specific OR for ethnicity was still 7.7 (3.9-15.3) for women and 2.6 (1.4-4.9) for males.*

**Conclusion.** Populations of Western origin versus from the Indian subcontinent differ in diabetes susceptibility and in behavioural risk factors, Indian women having an age adjusted OR of 11 compared to Western women. This highlights the importance of environmental factors even if genetic susceptibility may be of importance at both individual and ethnic level, especially when it comes to preventive strategies.

### **Cardiovascular risk factors in Turkish immigrants with type 2 diabetes mellitus: comparison with Dutch patients**

Uitewaal PJM, Goudswaard AN, Ubink-Veltmaat LJ., Bruijnzeels MA, Hoes AW, Thomas S.

Address for correspondence: Erasmus MC, Department of health policy and management, P.O. box 1738, 3000 DR Rotterdam, The Netherlands, uitewaal@bmg.eur.nl

**Introduction.** Based on recent epidemiological studies the need for a similar approach towards management of cardiovascular risk factors in type 2 diabetics with different ethnic background can be questioned. We compared the prevalence of cardiovascular risk factors and 10-year absolute risk for a coronary heart disease between Turkish and Dutch type 2 diabetes patients.

**Methods.** A cross-sectional study was performed using databases from three Dutch studies on type 2 diabetes, comparing 147 Turkish to 294 Dutch diabetes patients, matched for age and gender. Main outcome measures were: total (t-) cholesterol, high-density lipoprotein cholesterol (HDL), low-density lipoprotein cholesterol (LDL), triglyceride, blood pressure, and smoking. The 10-year absolute risk for a coronary event was calculated by means of the Framingham risk equation.

**Results.** In Turkish diabetics t-cholesterol was lower than in Dutch (5.4 versus 5.9 mmol/l;  $p < 0.001$ ), in Turkish males HDL was lower than in Dutch male patients (0.94 versus 1.08 mmol/l;  $p = 0.04$ ). The total/HDL-cholesterol ratio in Turkish and Dutch diabetics was equal (5.4 versus 5.4). Less Turkish than Dutch females smoked. (9% versus 23%;  $p < 0.01$ ). The 10-year absolute risk for a coronary event in both Turkish and Dutch male patients was 24%; the risk in Turkish versus Dutch females was 13% versus 15% (NS).

**Conclusion.** The absolute risk for a coronary event in Turkish type 2 diabetes patients is similar to the risk in Dutch diabetes patients, although important differences in the risk profile exist, in particular, the lipid profile and smoking habits differ.

### **The influence of type 2 diabetes on GP workload in deprived areas in the Netherlands**

Hoonhout L<sup>1</sup>, Sturkenboom MJCM<sup>2</sup>, Dieleman JP<sup>2</sup>, Bruijnzeels MA<sup>1</sup>

<sup>1</sup>Department of Health Policy and Management—Erasmus MC, Rotterdam

<sup>2</sup>Department of Medical Informatics—Erasmus MC Rotterdam

*Address for correspondence:* LHF Hoonhout, Department of Health Policy and Management - Erasmus MC Rotterdam, P.O. Box 1738, 3000 DR Rotterdam, Netherlands, + 31-1040881868, Hoonhout@bmg.eur.nl

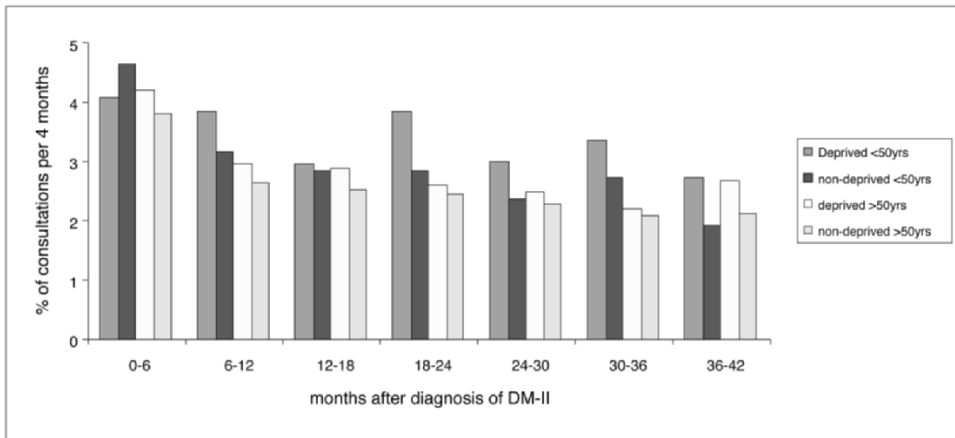
**Background.** People in deprived urban areas in the Netherlands are more likely to develop type 2 diabetes. It is not known whether diabetes type 2 patients in deprived areas visit their GP as much as diabetes patients in non-deprived areas. Aim: to compare the frequency of GP visits between diabetes type 2 patients in deprived and in non-deprived areas.

**Methods.** A cohort study was conducted the Integrated Primary Care Information (IPCI) project, a general practice research database that contains the electronic patient records of more than 500.000 patients in the Netherlands. All incident diabetes type 2 patients occurring between 1996 and December 2001 were included in this study and stratified by age ( $< 50$ ,  $> 50$  years). For each patient we assessed the GP consultation frequency (any reason) by 6 months periods after the first diagnosis.

**Results.** In total 118 deprived and 2560 non-deprived incident type 2 diabetes patients were identified between 1996 and 2001. The age at first diagnosis of type 2 diabetes was

much lower in de deprived urban areas, than in the non-deprived areas. Almost half of all incident patients in deprived areas were below 50 years of age. Age stratified consultation frequencies show that patients from deprived areas visit their GP more frequently (Figure 1), especially in the period more than one year after first diagnosis.

**Conclusions.** Patients from deprived urban areas visit the GP more often and develop type 2 diabetes at an earlier age compared to patients from non-deprived areas.



**Figure 1.** All-cause consultation rates of DM-II patients post-diagnosis stratified by age and deprivation status.

