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Immigrant health, our health

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This final chapter reviews the main conclusions reached by the Special Issue articles in the areas of EUNAM (EU and North African Migrants: Health and Health Systems) activities, covering well-being, health status, disease panorama and use of health services of immigrants to the EU. The reviewed chapters show that immigrants are a vulnerable population experiencing, in some aspects, discrimination and hardship similar to the socially weakest national population groups. Immigration has changed the disease spectrum, particularly in infectious diseases and recessive conditions such as sickle cell disease and familial Mediterranean fever. Importantly, health questions of immigrants cannot be separated from those of any human health issues. An imminent new immigrant question for the EU will be the massive internal migration. Although the overall disease spectrum may not be vastly different between EU countries, the internal migrants will be exposed to lifestyle-dependent ill health and diseases probably in a similar way as did migrants from outside Europe. Migrant health research requires dedicated funding, which needs to come from central EU sources because multiple nationalities are involved. This funding should be able to project the course of health from the country of origin to the country of destination and back again, which was one of guidelines in the funding that initiated EUNAM.

Introduction

The EU and North African Migrants: Health and Health Systems (EUNAM) team produced this Special Issue when it was turning to its fourth and final year of activity. The project delineated its task as '...it is important to survey wellbeing, health status, disease panorama and use of health services of immigrants compared to the native population; such analyses would be incomplete without casting a view on the same indicators and parameters in the country of origin'. During its granting period, EUNAM has met jointly twice annually and additionally in smaller groups discussing the thematic issues. In addition to the articles published in this Issue, the EUNAM partners have already published more than 20 articles on the subjects relevant to immigrant health. However, mainly focusing on the articles presented in this Issue, what have we learned about '**well-being, health status, disease panorama and use of health services** of immigrants'?

Well-being

Epidemiological data show that the generally good health status of immigrants ('health immigrant effect') declines after their arrival in the new country. Stress and factors linked to a new lifestyle can partly explain the deteriorating health status of the immigrant population and the emerging risks of diseases such as cardiovascular disorders, diabetes mellitus and asthma. The chapter by Moullan and Jusot discusses and provides new data on the concept of 'health migrant effect'. They present the 'healthy migrant selection effect', which postulates that migrants have a better health status than their countrymen because only those in the best health emigrate, while unhealthy migrants may also be more likely to return to their home countries. This health selection at migration could explain the better health status of immigrants.

However, the results of Moullan and Jusot challenge the existence of a 'health migrant effect' in Europe. Their study was based on large data sets from National Health Interview surveys from Belgium, France, Spain and Italy, providing information on self-assessed health status. The results show a large health gap in favour of natives in Belgium and France and, to a lesser degree, in Spain. The exception was Italy, where immigrants had a better health status than natives with respect to certain communicable diseases. They point out that the findings are consistent with the results of several recent studies on immigrants as compared with natives in Belgium, France and Spain. Their findings agree with the review and conclusions of Nielsen and Krasnick, who concluded that 'In regard to self-perceived health, most migrants and ethnic minority groups appeared to be disadvantaged as compared to the majority population even after controlling for age, gender, and socioeconomic factors'.[1] The controversies about 'health migrant effect' are probably due to the definition of 'health'. At least on entry into the new country, migrants are physically healthy, but the stress of the new social environment negatively influences self-assessed health status.

Migration leads to lifestyle, psychological and social environmental changes, which in turn may affect nutritional status. Nutrition is an important determinant of the immigrant's health status, socio-economic condition and biological characteristics. However, little is known about the differences in nutritional and health status in the immigrant populations in EU, even though the cultural differences between the homeland and the new country of residence may be profound. Italian surveys by the EUNAM team members revealed ethnic differences in weight status, adiposity pattern and blood pressure, relating to different cardiovascular disease risk profiles in ethnic groups.[2] Some immigrant groups were heavier and had a higher prevalence of abdominal obesity and hypertension than the other groups. Such findings call for further clinical and nutritional examinations of the immigrants. Appropriate care strategies and preventive measures need to be adequately developed to offer the perspective of improved health for the immigrant population

The results of an Italian study suggested that immigrants living in Bologna interact positively with their new environment.[3] The overall situation of the immigrants was characterized by a low level of stress and discomfort, and a medium level of well-being. Tunisians were the most stressed, with the highest level of discomfort and the lowest perceived quality of life. Tunisians are a group that has been living in Italy for a long time. The Roma and Kosovars, in spite of their higher unemployment, perceived a better quality of life, and this perception was associated with the desire to remain in Italy. Almost all the Senegalese wished to return home, while the Tunisians and Moroccans were equally divided among

those who wanted to stay in Italy and those who wished to return home.

The health of the children of immigrants is an important index of equality and well-being. Growth and development in infancy and early childhood are key indicators of an infant's health and long-term well-being. However, in a multi-ethnic society, evaluation of the growth of a child must take into account their ethnic origin. Because children of different ethnic groups may grow at varying rates, it is important to have appropriate group-specific information about growth and development. Moreover, ethnicity is an index of many factors, including environmental influences (such as nutrition) and cultural practices that can affect the outcome of birth and growth. The well-being and health of immigrant children is part of a broad issue of second-generation immigrants and their assimilation into the society. The themes of child health, growth and psychosocial adaptation were reviewed by Gualdi-Russo *et al.* Age at menarche was lower in immigrant girls, while male pubertal progression seemed faster in immigrants than in European natives. Negative effects on growth, health and psychosocial adaptation were noted among immigrant children living in low-income and disadvantaged communities. A higher morbidity was associated with the minority status and low socio-economic situation. The authors call for adequate health care for disadvantaged immigrant groups.

Health status

Obesity is a recognized challenge and it is among the fastest growing health problems worldwide. Stress and rapid changes in lifestyle have often been associated with an increased incidence of obesity in immigrant populations. Increases in body mass index (BMI) and/or intra-abdominal adipose tissue are highly correlated with risks of cardiovascular diseases and many other chronic diseases. The alarming increase in the prevalence of obesity was documented in the present Issue by Toselli *et al.* with a focus on North Africans and immigrants from this area. The overall results revealed a higher prevalence of overweight and obesity in females than in males in natives in North Africa, and this pattern was also shown among immigrants. Literature reports have covered many populations, and some have shown that almost half of some adult North African native and immigrant populations may be overweight or obese. Physical inactivity is >20% in males and 40% in females in North Africa. The results underline a higher health risk in North African immigrants than in residents. Toselli *et al.* conclude that specific public health strategies should be adopted in immigrant populations of North African origin to control the obesity epidemic.[3]

The theme of overweight with focus on children was covered in the review by Gualdi-Russo *et al.* They report that childhood overweight and obesity have increased at an alarming rate with the most vulnerable group being children with a migrant background. The accumulated data confirm that children and particularly girls of North African origin are more often overweight and obese compared with the native children. The trend is similar in urban areas of North African countries. Contributing factors include Westernization of eating habits and the lack of physical activity. Body image perception and beauty ideals among North African societies equate overweight and obesity with good health, higher social status, fertility and prosperity. Gualdi-Russo *et al.* point out the complex contributing mechanisms of acculturation in the host society and traditions of the country of origin that influence the issues of childhood overweight and obesity. There is a societal need to target health promotion at risk groups advocating healthy diet and regular physical activity. The present review considered children but Toselli and Gualdi-Russo have shown that the same patterns apply to adult immigrants and they have recommended that social support may be an important means of stimulating physical activity, particularly in women.[3]

The significance of physical activity for health goes beyond BMI. Epidemiological studies by the EUNAM partners from Sweden have shown that physical activity serves to protect against poor health, despite increased BMI and smoking.[4] Immigrant women and men born in Arabic-speaking countries possessed an over-risk for coronary heart disease compared with Swedish-born individuals, even when the level of education and the employment status were taken into account.[5] For elderly people who were occasionally physically active, the risk of all-cause mortality was 28% lower than for those who were physically inactive. Women and men who were physically active at least twice a week had a 41% lower risk of developing coronary heart disease than those who performed no physical activity after adjustment for all explanatory variables. The risk of reporting low levels of physical activity was significantly higher for women born in Southern and Eastern Europe and 'all other countries', compared with women born in Sweden. The public health value pinpointing correlates of physical activity in different population groups is to influence their physical activity patterns and to target behavioural change programs.

Mental and psychosomatic well-being of immigrant populations promotes their successful participation in the new society. According to previous studies, factors negatively influencing mental health of immigrants were occupational and economic instability, cultural and social marginalization, family estrangement, pressure to send money to the family, racial discrimination and lack of statutory documentation. In the present issue, Toselli *et al.* covered psychosocial health issues among immigrants. They found that immigrants of different ethnic groups show heterogeneity in the risk of psychosocial disorders, but they are generally at a higher risk than the local population. The risk is higher in women and in those with a poor socio-economic status. Acculturation and discrimination worsens psychosocial health. There is a need to collect detailed data on the psychosocial health among the various immigrant groups in Europe, which could then be the basis of improvements.

Disease panorama

Many studies have shown a relative decline in the health status of the immigrants compared with the native population. For example, the morbidity and mortality from coronary heart disease is higher among immigrants than in the majority population even when the results were adjusted for level of education and employment status. However, it has not been possible to draw definite conclusions as to whether these high-risk levels originated from the country of birth or whether they were the result of migration or the acculturation process, which has been a weakness in many epidemiological studies on migration.

Infectious diseases are an example of how immigration may dramatically change the disease panorama in receiving countries as reviewed in this Issue by Khyatti *et al.* Overall infectious disease mortality has significantly decreased in most European countries. Tuberculosis has re-emerged in Europe and it is concentrated among migrants, specifically among those infected by drug-resistant strains. Migrants arriving from North Africa and sub-Saharan Africa carry higher rates of hepatitis C virus and hepatitis B virus than the host European populations. The prevalence of human immunodeficiency virus (HIV) infections in North African populations is low, generally around 0.1%, and thus, the impact of North African migrants in European HIV infections is low. The hallmark of the HIV epidemic in Europe is the increase in the penetration of non-B strains and the circulation of several recombinant forms resistant to treatment. An important source of these is the migration from sub-Saharan Africa, and persons from that region are using North Africa as a transit point into Europe. Leishmaniasis is a re-emerging zoonotic disease in Southern Europe although not specific to migrant groups. Similarly to HIV, migrants from sub-Saharan Africa may be infected with malaria and represent a risk of malaria re-emergence in Europe. Khyatti *et al.* conclude that high

migrant influx into Europe has resulted in changing patterns of communicable diseases, which require a continuous surveillance. According to World Health Organization guidelines, targeted screening followed by preventative vaccination can serve as an initial step. Integration of migrants into the local health-care systems is a subsequent step allowing for long-term treatment and follow-up. Public health campaigns emphasizing prevention are considered essential for the mitigation of disease dissemination in the migrant pool and for second-generation migrants.

Immigration is influencing the pattern of recessive diseases in Europe, as reviewed by Anwar *et al.* Consanguinity is common in North Africa, reaching half of all marriages in some areas. As a consequence, recessive disorders are common in the region, sickle cell disease leading in prevalence, followed by thalassaemia. With immigration they have spread to Europe and are likely to be further propagated because the habit of inbreeding is continuing in many immigrant communities. Sickle cell disease and thalassaemia are well known to the European medical community but rarer recessive diseases endemic outside Europe are less familiar. An example is familial Mediterranean fever, which is common in the Eastern Mediterranean area and is emerging as the most common hereditary autoinflammatory disease in countries with immigrants from the Eastern Mediterranean area, including Turkey. Anwar *et al.* demonstrate that historic movement of populations and current immigration are influencing the concept of 'endemic' disease. Diseases migrate with people, and the European medical community needs to not only recognize the challenges of infectious disease but also to be able to diagnose, treat and help prevent emerging diseases.

Immigrant studies have had and will have an important contribution to the etiological understanding of disease causation in defining the causes as 'environmental' or 'inherited' (equal to genetic).[6] These concepts and the numerous Swedish immigrant studies on cancer were reviewed in the Issue by Hemminki *et al.* A disease appears to be environmentally caused if the risk changes much on immigration and if it changes between immigrants and their offspring. A stable disease risk may indicate a strong genetic contribution. The classical cancer studies on Japanese immigrants to USA and multinational immigrants to Australia showed that the incidence in common cancers changed to the level of the new host country in one or two generations. These findings were fundamental to the understanding of the environmental aetiology of human cancer. Studies in Sweden have shown that the second generation immigrants, those born in Sweden, already have adopted the Swedish cancer incidence.[7] Many immigrants had arrived as young couples to Sweden, whereby their Sweden-born children have a completely indigenous genotype of their parents. Such data led the authors to conclude that the childhood environment, rather than genotype, is very important in setting the individual's cancer destiny.

In the review in this Issue by Hemminki *et al.*, some extreme differences in cancer incidence among immigrants were highlighted, including high risks of liver cancer in East Asians and Africans, nasopharyngeal cancer in Southeast Asians and North Africans and mesothelioma among Turks. Also, the known high risks in developing countries for liver, oesophageal, stomach and cervical cancers were observed among immigrants. The causes for these high-risk cancers are ascribed to microbial infections, nutritional imbalances and toxins. Cervical cancer was not increased among immigrants from developing countries; in fact the risks were very low probably due to the sexual habits of the immigrant groups. North African immigrants had an overall cancer risk 20% lower than Swedes. The risks of prostate, testis, skin cancers and of melanoma are very low but, in contrast, the risks of liver, pancreatic, oral and male lung cancers were higher compared with Swedes. Male pancreatic cancer in North African immigrants was more common than in any immigrant group for unknown reasons.

Cancer diagnostics have been relatively uniform during the past 50 years. Thanks to the International Agency of Cancer (IARC) in Lyon, quality-guaranteed cancer rates are available from various parts of the world and these are presented in the books 'Cancer Incidence in Five Continents'. Yet, as discussed by Hemminki *et al.*, cancer incidence data are lacking for most countries of the world and examples are shown for Egypt and Morocco on how the introduction of local cancer registries may proceed. IARC has complemented its efforts on global estimates on cancer incidence and mortality by the GLOBOCAN database (globocan.iarc.fr). The database provides contemporary estimates on major types of cancer at a national level for 184 countries of the world. It should be emphasized that GLOBOCAN data are based on estimates and the users are asked to note that 'The sources of data are continuously improving in quality and extent, estimates may not be truly comparable overtime and care should be taken when comparing these estimates with those published earlier. The observed differences may be the result of a change in the methodology and should not be interpreted as a time trend effect'. Hemminki *et al.* discuss the use of immigrant data to extrapolate to the incidence in the country of origin. A successful example was the noted high risk of testicular cancer in Chilean men in Sweden, which was later confirmed when Chilean cancer registry data became available.

Even if we currently have reasonable estimates on the global cancer incidence, international standards in diagnostics are less developed for many other diseases. Diagnostic criteria may not be uniform within a single country and even for developed countries population-based incidence figures may not be available. Thus, international incidence data are not reliably known for a large variety of diseases and it is difficult to conclude anything about environmental and genetic causation. In some countries, such as Sweden, all hospitalizations are available since 1987 in the Hospital Discharge Registry. Thus diseases requiring hospitalization can be obtained from this source. The additional advantage for Sweden is that the birth country of every individual is known.

The Swedish EUNAM partners have used the Hospital Discharge data in immigrant studies, for example, to examine whether there is an association between country of birth in first-generation immigrants and hospitalization for rheumatic diseases, and to further study whether any such associations remain in second-generation immigrants.[8] First-generation immigrants from Iraq had a higher risk of rheumatoid arthritis than native Swedes who were the reference group. The risk of systemic lupus erythematosus was increased in immigrants from Iraq and Africa; these raised risks persisted in the second generation. These findings suggested that both genetic and environmental factors are involved in the aetiology of specific rheumatic diseases. Using the same source of data the Swedish team analysed whether there is an association between country of birth in first-generation or second-generation immigrants and hospitalization for an inflammatory bowel disease.[9] The incidence was decreased in the first-generation immigrants and the pattern partly remained in the second generation. However, some groups of second-generation immigrants had higher risks of Crohn disease and some others of ulcerative colitis. The data may imply poor adaptation of the gastrointestinal immune system in the offspring of immigrants.

Gulliver *et al.* reviewed Swedish studies on mental disorders and suicide risk among immigrants in the present Issue. The summarized studies showed increased risks of common mental disorders, such as depression and psychotic disorders, in immigrants to Sweden compared with native Swedes. Moreover, the results showed notable differences between different immigrant groups and between males and females. Risk of suicide was increased in some immigrant groups, but decreased in others. The authors concluded that targeted qualitative and intervention studies could facilitate efforts to develop and implement preventive methods for immigrants at high risk for mental ill health.

Use of health services

This topic was not directly covered by the Special Issue but has been on the agenda of EUNAM.

The reviews in the Special Issue demonstrate that migrants are more susceptible to problems associated with somatic, emotional and mental health arising from their vulnerability and cultural obstacles in the host country. Yet, equality of need for health care among immigrants and natives does not necessarily translate into equality of use, as there may be various invisible barriers to health care. Differences in use of health care may result from lack of access or language barriers. For example, if immigrants do not use the medical system in the same way as the native population, they may not know of their diseases in the first place. In addition, if immigrants are less likely to be treated for some conditions, they could die more quickly and, paradoxically, have a lower prevalence of these conditions than the surviving population. It is also possible that data quality may differ between immigrants and the native population. The foreign-born are also less likely to have adequate health care and insurance coverage, and may not be familiar with the many phases of the health-care system.

EUNAM partner Dourgnon at IRDES, Paris, has conducted French population heath surveys on representative population sample showing that immigrants have a lower rate of access to private practice ambulatory care of both general practitioners and specialists compared with the rest of the French population. These differences pertain to immigrants' relative disadvantaged social conditions, including education, income and access to complementary insurance. Most of the observed differences disappeared once the socio-economic characteristics were adjusted in the analysis. The survey showed a more contrasted situation in terms of preventive care; immigrants more often declared being vaccinated but more seldom used screening tests.

A relevant and timely addition to the current summary is the 'Grenada Declaration', originating from the 2014 meeting of the European Public Health association' (http://www.eupha-migranthealthconference.com/?page_id=1766). It has implications to many aspects of immigrant health but particularly to health-care utilization on which the implemented economic austerity policies in many European countries may limit the access of immigrants and lead to further inequality.

Conclusions

This Issue was possible because the EU granted special funds for immigration studies and in the case of EUNAM specifically earmarked for heath studies on North African immigrants. The North African and the Eastern Mediterranean areas have historically been the main sources of immigrants to the EU but internal migration in the EU has probably exceeded the movement from outside more recently. For example, close to 70% of the migrants to Germany in 2013, totalling 1.2 million, came from other EU countries. Even if the EU legislation guarantees some basic rights to those moving within the EU, many migrants still face the same problems as the non-EU migrants experienced earlier. In fact, one of the main themes of the EU Parliament elections of May 2014 in many countries was internal migration and cutting off welfare from temporary workers. These demands were not only presented by right populist parties but, for example in Bavaria, the leading Christian Socialist Party was demanding cutting off child compensations from temporary workers, even though they are taxed like any German. The results of the May elections showed major gains for parties aiming at curbing immigration in countries such as UK, France and Denmark. The massive internal movements are very recent and the social consequences of which are not well known. In any population, migrants are always a minority and national funding for immigrant questions is very limited. The EU should therefore open dedicated funding opportunities on migrant health-related themes.

The chapters in the Special Issue conclude by presenting a number of recommendations that aim at improving immigrant health. It is acknowledged that many of these are general, but more concrete recommendations and practical solutions will be delineated during the final year of EUNAM ending in March 2015. The chapters show that studies in immigrants have advanced our understanding of disease aetiology and epidemiology in many ways. In the course of these scientific considerations, it has become increasingly clear that immigrant health issues are no different from those of natives, as these are germane to human health.

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Key points

- Reviews of this Special Issue highlight many examples on how immigrant studied have advanced the general understanding of disease causation.
- Immigrants are a vulnerable group, which needs special attention in public health and clinical medicine.
- The EU, with its large internal and external migration, should target funds to advance migration health-related studies.

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