Review Article

Impact of socio-cultural factors, dietary habits, and lifestyle patterns on the health status of North African migrants in France

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ABSTRACT

The available studies in France showed a paradox among North African migrant men in France and some other developed countries, i.e., that migration could have a protective effect against some nutrition-related noncommunicable diseases compared to French. The origin of this paradox is not well documented. Particular attention was given to the influence of socio- cultural and environmental factors on health status of North African migrants. Conservation of healthy diet habits, lower prevalence of smoking, lower alcohol consumption, and adoption of a more active lifestyle may confer protective effects on morbidity and mortality of North African men compared to local-born French. It should be noted however that beneficial effects of migration in men would be expected to decrease with the length of stay in the host country because of acculturation to the host country lifestyle. More comprehensive and larger-scale studies will be required to provide a better insight into migration-health relationships.

Key words: Dietary habits, lifestyle, North African migrants, paradox, nutrition-related noncommunicable diseases, relative risk

Introduction

France is the oldest and second largest recipient of migrants in Europe. Since the end of its colonial period, it has received large numbers of migrants from North Africa and West Africa. France has Europe's largest Muslim minority population, estimated at about five million, which comprised approximately 8% of the total population.[1,2] Although France has continued being a country of mass immigration, relatively little is known about the health of migrants and particularly the impact of migration on lifestyle and health-related behaviors.[3] Given the fact that the migrants had a poorer educational performance, a lower economic level and lower utilization of somatic healthcare services compared to the local-born population, they are expected to be at higher mortality and morbidity risk.[4] However, the available studies showed a paradox among Mediterranean migrant men in France and some other developed countries, i.e., that migration could have a protective effect against some nutrition-related noncommunicable diseases (NCD) like diabetes, hypertension, dyslipidemia, cardiovascular diseases and some cancers.[3-6]

In a retrospective cohort study focusing on Tunisian migrant men living in France, compared to the local-born French, Tunisian migrants exhibited lower prevalence of overweight, hypercholesterolemia and hypertension.[4] Similarly, Moroccan men living in France had lower death rates than French nationals, with a life expectancy at birth estimated at 73.7 years, versus 71.3 for the country as a whole.[7] The origin of this paradox is not well documented. Two competing theories have been proposed: The "salmon bias hypothesis" and the "healthy migrant hypothesis." The former posits that migrants are likely to return to their country of origin after they retire or become seriously ill, preferring to die "at home." The latter states that migrants

Access this article online	
Quick Response Code:	Website: www.joshd.net
	DOI: 10.4103/2321-0656.115296

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may generally benefit from a healthy migrant effect, either via self-selection or a selection related to mandatory health controls at entrance.[8,9]

However, several questions may arise from these hypotheses. First, why are there differences in mortality between North African migrants and those from other countries since the latter should also undergo the positive-selection process? In fact, migrants from eastern European countries had higher mortality rates from cardiovascular, respiratory and digestive illnesses. Second, North African migrants seem to be relatively young (mean age of 28 years in one study enrolling Tunisian migrants), and therefore they are not expected to have cardiovascular abnormalities in the medical examination at entrance.[6] Clearly, taken into account these questions, the "salmon bias hypothesis" and the "healthy migrant effect hypothesis" could not explain alone the better health status of North African migrants compared with their French peers.

Particular attention was given to how socio-cultural and environmental factors could influence health status of North African migrants. "The best of both worlds" hypothesis seems to be attractive: The conservation of some dietary characteristics could protect migrants, particularly against some NCD.[10] This hypothesis was corroborated by a publication focusing on Tunisian migrants revealing that the conservation of a diet high in fiber, vitamin C, fruits, and vegetables was associated with a decrease in both blood pressure and total serum/LDL cholesterol concentrations in Tunisian migrants compared with local-born French.[4,6] As a matter of fact, an inverse relationship between dietary fiber intake and blood pressure or the development of hypertension was identified.[6,11] In addition, several epidemiological studies showed beneficial effects of fruit and vegetable consumption on blood lipids and the lipoprotein profile.[12,13]

Tunisian migrants had also lower sodium intake, lower consumption of meat and dairy products, and lower saturated fat intake than the French, which is due to conservation of greater consumption of olive oil by Tunisian migrants.[6] This dietary behavior results in a high consumption of monounsaturated fat and low intake of saturated and trans fat along with low rates of cardiovascular disease.[6]

There is considerable epidemiological evidence suggesting that smoking, mainly via nicotine exposure, is an independent risk factor for the development of insulin resistance and type-2 diabetes.[14,15] Smoking appears to be less prevalent among the Tunisian migrants than among their counterparts in Tunisia and this may thus partly explain the protective effect of migration on type-2 diabetes. The difference in current smoking may be due to regular preventive actions against smoking implemented in France including taxes that make tobacco more expensive in France than in Tunisia.[4]

It appears also that the observance of the religious prohibition on alcohol consumption and the adoption of a more active lifestyle by a high percentage of Tunisian migrants may confer additional protective effects against overweight in these migrants compared to local-born French.[4]

One study showed that, compared to the local-born population, North African (Algerian, Tunisian, Moroccan and Egyptian) migrants in France experienced quite different cancer patterns, with lower mortality rates for most sites, except for a few specific sites such as nasopharynx, bladder (in Algerian migrants only) and lymphoma (in Egyptian migrants only).[5] Several demographic, cultural, and social factors could explain lower cancer mortality risk in these migrants. North African migrants have lower alcohol consumption than local-born French, together with a lower risk of mortality from upper aero digestive and liver cancers. Similarly, they presented a lower mortality from cancers of the colon, rectum, and stomach as well as from smoking-related cancers.[5] Again, dietary characteristics (rich in cereals, legumes, vegetables, and fruits and poor in animal fats and meat) may protect these migrants from such cancers.[5]

Nevertheless, it should be noted that the North African migrant population does not constitute a homogeneous group and the reported benefic effects of migration may vary greatly. Various factors may explain this difference such as the reason for migration (health, family, professional and educational reasons, exile, etc.), and economic, sanitary, and educational characteristics of the country of origin.[8] Also, age at migration could affect health status of migrants. For example, it has been demonstrated that Tunisian migrants coming to France after the age of 30 may bring with them traditional Tunisian dietary habits (low meat consumption, high olive oil consumption), which change little after their arrival, while migrants coming before may not have well adopted these Tunisian habits because of a lower past exposure to Tunisian socio-cultural norms.[16] Lastly, the impact of the healthy migrant effect would be expected to decrease with the length of stay in the host country because of acculturation to the host country lifestyle. Long-term migrants adopt the "western" dietary patterns of their new host country and tend to be less physically active both in leisure time and in work time.[16]

North African women do not present the same health advantage as men.[3] Several factors may explain this. Most of the migrant women did not arrive in France as workers, and therefore, compared to men, they were not submitted to the same selective effect and were also less likely to have regular medical checkups.[3] Moreover, the tradition of women remaining within the home in Muslim cultures might limit their level of physical activity and promote obesity development. Interestingly, there was a global and significant diminution in disease prevalence in North African women compared with local-born women in France. Their traditional patterns of eating and the low proportion of smokers among them might explain such a global protection.[3]

We conclude that, despite some potential confounding factors, data from epidemiological studies focusing on North African migrants in France provide convincing evidence that these migrants stand out as having better health with respect to NCD and some cancers than local-born French. Cultural and environmental factors as well as conservation of some dietary characteristics seem to be the main factors involved in this paradox. More comprehensive and larger-scale studies will be required to provide a better insight into migration-health relationships.

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How to cite this article: Kamoun M, Mnif MF, Charfi N, Naceur BB, Mnif F, Rekik N, *et al*. Impact of socio-cultural factors, dietary habits, and lifestyle patterns on the health status of North African migrants in France. J Soc Health Diabetes 2013;1:60-2.

Source of Support: Nil. **Conflict of Interest:** None declared.