

Who is responsible for the health care of refugees?

We share in this Correspondence our reflections from our involvement in a medical mission in Greece, and highlight the need for global collaboration to improve health care for refugees.

The mission, organised by the Syrian American Medical Society Global Response, aims to provide medical services, including primary care, to refugees fleeing war in the Middle East and seeking asylum in neighbouring countries. We worked in a clinic set up in a refugee camp in Thessaloniki, Greece, which is staffed by volunteer medical professionals from around the world and provides medical care to more than 40 patients per day. Because of the limited drug stocks, patients would come weekly to get free refills of their chronic disease medications. The providers would prescribe on the basis of drug availability and clinical judgment. Numerous patients presented to the clinic a few times a week with somatic symptoms as manifestations of trauma and stressor-related disorders. Many mothers spoke of withdrawn children, struggling to sleep and terrorised by the nightmares of war.

According to the UN High Commissioner for Refugees, there are 21.3 million refugees worldwide. Refugees are generally high users of health-care resources because of acute illnesses and the high prevalence and poor management of chronic diseases,¹ mood disorders, post-traumatic stress disorder, schizophrenia, and non-affective psychotic disorders.^{2,3} Children in conflict zones also have a high prevalence of enuresis and other symptoms of psychological stress.⁴

The top refugee-hosting countries include low-income countries with scarce health-care resources that they share with the ailing refugees. Limited support is provided by the UN, the European Union, and various humanitarian missions. Because

the political crises leading to the displacement of refugees generally last for decades, health-care systems in the host countries will hold the burden of refugees for years to come. The treatment of communicable diseases is generally prioritised to prevent an outbreak in the host countries. However, chronic medical and mental health disorders, including trauma and stressor-related disorders, as non-communicable diseases, are not given the same priority.

Refugee health is a public health crisis of this century and a stronger collaboration of the global community, including private organisations such as the Clinton Health Access Initiative and the Bill & Melinda Gates Foundation, is needed in the same way that these resources have been effectively used to fight global epidemics such as poliomyelitis and HIV/AIDS.

We declare no competing interests.

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Early use of the microscope

I read with deep interest the Correspondence by Michele Augusto Riva, and colleagues (Aug 6, p 559).¹ I was impressed by the document from the Vatican Library, and I agree with my esteemed colleagues that physicians

initially didn't use the microscope for pathological studies.

However, I would like to make a short remark. The first explicit statement about the possible use of microscope as a diagnostic tool in clinical medicine is attributed to Giuseppe Campani, scientist and skilled lens maker (1635–1715). Campani's microscope and its application were reported by Monsignor Emanuel Schelstratenus, Prefect of the Vatican Library, in a letter to Acta Eruditorum of Lipsia in June 1686. The enclosed figure is very interesting, because it shows a man lying on a bed, while a doctor observes a wound on the man's leg. A woman holds a candle and a mirror to improve illumination, concentrating the light on the wound.

In the same figure, a super-sized version of Campani's microscope is standing on the table to the left, so that the detail of the instrument might be appreciated.² The chronological priority of Schelstratenus' letter is a minor question: the key point is the deep interest in microscopy, shown in the milieu of the papal court, which seems to have been particularly sensitive to the potential values of the microscope as a diagnostic tool. The consciousness of the utility of the microscope in pathology and in medicine, so clearly understood by Campani, had to remain in abeyance for a long time.



I declare no competing interests.

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- 1 Riva MA, Borghi L, Pagni F. The first recorded use of microscopy in medicine: Pope Innocent XII's autopsy report. *Lancet* 2016; **388**: 559.
- 2 Ponti G, Muscatello U. The long road to the use of microscope in clinical medicine in vivo: proposals to the modern perspectives of optical biopsy. *Acta Medd Hist Adriat* 2015; **13**: 385–92.

Mortality decrease according to socioeconomic groups

In their Article, Enrique Regidor and colleagues (Nov 26, p 2642)¹ conclude that “In Spain, probably due to the decrease in exposure to risk factors, all-cause mortality decreased more during the economic crisis than before the economic crisis, especially in low socioeconomic groups”. This statement is misleading from both a methodological and conceptual perspective.

The authors assumed that the effects of the economic crisis on mortality can be observed in the initial 4 years (2008–11) of the crisis. This assumption oversimplifies the financial crisis, which was a long-term occurrence, particularly given that austerity in Spain mostly started after a constitutional reform in 2011 to prioritise the control of budget deficits over social expenditures.² Thus, people in Spain were still not exposed to austerity policies.³ Additionally, children younger than 10 years and adults older than 74 years were excluded from the analysis, despite being highly susceptible social groups. Likewise, by measuring only deaths, the authors omitted morbidity (overall burden of disease) and indicators of wellbeing.

The authors placed emphasis on the decrease in mortality being higher in low socioeconomic groups than in high and medium socioeconomic groups, implying a reduction in health inequities during the crisis. However, the two indicators used (ie, household floor space and car

ownership) do not account for the susceptibility of the Spanish population in a time characterised by evictions, job precariousness, and familial reorganisation. Moreover, overcrowding was not considered and rural and urban areas were not differentiated between, which is particularly important because car ownership is not a good proxy for material deprivation in rural areas.⁴

Finally, the causal attribution of mortality decreasing because of a change in risk factors and lifestyles is not supported by the results and neglects social determinants of health inequities.⁵

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- 1 Regidor E, Vallejo F, Granados JA, Viciana-Fernández FJ, de la Fuente L, Barrio G. Mortality decrease according to socioeconomic groups during the economic crisis in Spain: a cohort study of 36 million people. *Lancet* 2016; **388**: 2642–52.
- 2 Tremlett G. Spain changes constitution to cap budget deficit. *The Guardian* (London), Aug 26, 2011.
- 3 Karanikolos M, Mladovsky P, Cylus J, et al. Financial crisis, austerity, and health in Europe. *Lancet* 2013; **381**: 1323–31.
- 4 Christie SM, Fone DL. Does car ownership reflect socio-economic disadvantage in rural areas? A cross-sectional geographical study in Wales, UK. *Public Health* 2003; **117**: 112–16.
- 5 Marmot M, for the Commission on Social Determinants of Health. Achieving health equity: from root causes to fair outcomes. *Lancet* 2007; **370**: 1153–63.

Enrique Regidor and colleagues' Article¹ analysed the effect of the economic crisis in Spain on age-adjusted mortality for different socioeconomic groups. We wish to point out that the results are consistent with a hypothesis of no difference between people of different socioeconomic groups, despite the authors' conclusions.

First, the economic crisis might have led people to change socioeconomic status. The authors used household

floor space and the number of cars as proxies for socioeconomic status. However, the crisis might have caused households to downsize or to sell a car, of which the expected effect would be a reduction in mortality in low socioeconomic groups.

Second, in relative terms, the reduction in all-cause mortality was approximately the same between socioeconomic groups, at around 15%. Different absolute rates between socioeconomic groups might have simply reflected differences in the distribution of disease burden.

Third, in Spain, average health-care expenditure per capita during 2004–07 was about US\$2300, whereas average health-care expenditure per capita during 2008–11 was \$3000.² This increase might explain the observed declines in all-cause mortality, especially when our second point is taken into consideration.

Fourth, a common statistical error is to assume that the difference between significant and not significant is itself statistically significant.³ Although within-group changes were tested, no hypothesis tests were done to compare changes between different groups. Without these comparisons, conclusions cannot be made without the risk of falling foul of the error of inferring that a difference in significance is itself significant.

To make accurate inferences from observational data, appropriate caution must be taken to select, test, and compare appropriate models. Without this rigour, few conclusions are tenable.

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- 1 Regidor E, Vallejo F, Granados JA, Viciana-Fernández FJ, de la Fuente L, Barrio G. Mortality decrease according to socioeconomic groups during the economic crisis in Spain: a cohort study of 36 million people. *Lancet* 2016; **388**: 2642–52.
- 2 The World Bank Group. Healthcare expenditure per capita (current US\$). <http://data.worldbank.org/indicator/SH.XPD.PCAP?locations=es> (accessed Oct 24, 2016).