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Maria Inês Varela-Silva & Cristina Santinho

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EDITORIAL

Human biology of poverty

Poverty has its nefarious roots embedded in social, political, and economic disadvantages and inequalities (Psaki et al., 2012; Leatherman, 2005). It differentially affects various segments of populations, intensifies negative outcomes of growth and development, creates ill-health in terms of infectious and non-communicable diseases, and furthers discrimination in all spheres of life (Bogin et al., 2014; Delisle, 2008; Leatherman, 2005; Nandy et al., 2015). The complex effects of poverty on individuals and societies vary throughout the lifespan. These outcomes are more often seen among ethnic minorities, migrants, and women and girls (Goudet et al., 2011; Mocumbi & Sliwa, 2012; Smith et al., 2002; Teixeira, 2008). Poverty also strikes differently between developed and developing countries (Amuna & Zotor, 2008; Bogin et al., 2014; Smith et al., 2006; Varela-Silva et al., 2012). In extreme situations, such as war and other catastrophes, people are forcefully displaced. These refugees are disproportionately affected if they already live in poverty (Clarkin, 2012; Devakumar et al., 2014).

This special issue of *Annals of Human Biology* arises from the 56th annual symposium of the Society for the Study of Human Biology (SSHB) held in Lisbon, Portugal from 2-5 September 2015. The SSHB partnered with the Centre for Research in Anthropology (CRIA-ISCTE – Lisbon University Institute) and the Research Centre for Anthropology and Health (CIAS – University of Coimbra, Portugal) to bring together a large interdisciplinary team of researchers, academics, practitioners, and community leaders. This symposium encouraged a very productive exchange of knowledge and discussion on the effects of poverty on human biological outcomes.

The SSHB, CRIA, and CIAS actively endorsed and put into practice the principles defended by the Athena Swan Equality Challenge Unit (http://www.ecu.ac.uk/equality-charters/athena-swan/) and ensured gender equality among the invited speakers (12 invited speakers, 6 males and 6 females), presenters and participants. The Athena Swan initiative encourages and recognises commitment to advancing careers of women in science, technology, engineering, mathematics and medicine (STEMM), as well as in arts, humanities, social sciences, business and law (AHSSBL).

The effects of poverty on human biological outcomes need to be addressed from a biocultural and social viewpoint; therefore the inclusion of presenters from social sciences in a symposium stemming from a human biology society was welcomed and cherished. This interdisciplinary approach was of even greater importance because of the very precarious current situation of the social sciences in Portugal. Funding is being cut and graduate opportunities are diminishing (Pereira, 2014). The success of this symposium, measured by the quality and diversity of the presentations focused on poverty, highlights the obvious need for investment on research in social sciences and on interdisciplinary research connecting social sciences with human biology, epidemiology, demography, and quantitative and qualitative methods.

The symposium covered six main areas and selected presentations from each area are included in this special issue. The papers included here focus on major recent advances on the biocultural effects of poverty, from a global and integrated perspective.

Human biology of poverty in past populations

Cardoso et al. (2016) tests the hypothesis that socioeconomic inequalities, based on professional occupation, can be seen on human skeletal remains. This hypothesis is confirmed only in some segments of the body (hips, right shoulder and ankle), as the method used does not provide a clear image for all body sites.

The biological effects of war and forced displacement

Schell et al. (2016) present a study on pollutant exposure among American Indians and Alaskan Natives (AI/AN) and its association with fertility decline. Historically, AI/AN have been subjected to oppression, attempted extermination and systemic poverty. Their overall health status is bad, with high rates of obesity and associated detrimental conditions. However, the authors state that further research is needed to clearly determine if obesity and pollutant exposure are associated with fertility decline.

Human biology among girls and women

Rousham and Khandakar (2016) show a dramatic reduction of health inequalities among Bangladeshi girls and adolescents in the last 20 years, mainly regarding rates of undernutrition and stunting. These positive results seem to be a direct consequence of the implementation of community-based health programmes and education policies targeting the poorest sectors of the country. However, more needs to be done to curb the overall very high rates of undernutrition and special efforts are needed to effectively address reproductive behaviours and health consequences of early age marriages.

Doak et al. (2016) addresses the nutritional dual-burden of child stunting and maternal overweight among Maya families in the Western Highlands of Guatemala. Although the percentages of stunting among children (38%) and overweight among mothers (45%) are elevated, only 17% of the households were dual-burden and, in most cases, childhood stunting was not influenced by maternal overweight.

Human biology of poverty among minorities and migrants

Ellison and de Wet (2016) show the association between poverty and disability on self-reported health outcomes among residents and migrants in Gauteng, South Africa. Despite the limitations based on self-reported health status, this paper questions assumptions regarding pre-and-post migration health status, shows the existence of health differences based on the type of migration (internal *versus* transnational) and highlights the effects of racist/xenophobe behaviours on the health outcomes of the people in this region.

Human biology of poverty in developed and developing countries

Non et al. (2016) was the recipient of the 2015 SSHB Young Researcher Award. Her study on early childhood social disadvantages and poor health behaviours in adulthood shows, among participants in the New England Family Study, that social disadvantage in childhood increases the odds of smoking, excessive alcohol consumption, and obesity in adulthood, contributing to higher rates of adult cardiometabolic diseases.

Griffiths et al. (2016) report that socioeconomic inequalities in infant growth operate through maternal size and birth weight, in Andhra Pradesh, India. In this sample, the poorest families had the shortest mothers and the children with lowest birthweight. The authors suggest that an increase in the socioeconomic status of the families may improve physical growth in both generations.

Human biology of poverty in Portugal and Spain – the 2007 economic crisis

Nogueira (2016) analyses the effects of the 2007 economic downturn in Portugal on the health of families from the Lisbon Metropolitan Area. Her results show a selective effect of the economic downturn that mainly affected the middle class families - categorised in this study as "newly deprived" families. These families are at increased risk for premature mortality. However, the economic downturn did not seem to affect the "traditionally poor", i.e. the people who were already poor before the economic crisis.

The 2007 economic crisis was also the focus of the paper presented by Varea et al. (2016) who analysed trends on underweight at birth in Spain. Overall, there has been an increase in the prevalence of underweight at birth since 2008 and this has affected all segments of the Spanish population. Due to intergenerational mechanisms this negative effect on the health of the population is expected to linger for a long time.

Conclusion

The interdisciplinary nature of this symposium has allowed for the compilation of a wide range of papers stemming from areas of research that do not usually cross paths. It also raised awareness for emergent topics of research that need further investment. Among these are the effects of climate change on population health (Cecchi et al., 2009; Danysh et al., 2014), the effects of war on health (Clarkin, 2008) and the migrant crisis currently on-going in Europe (Clarkin, 2012; Devakumar et al., 2014; Santinho, 2015; Teixeira, 2008). We hope the articles in this issue promote and stimulate new research opportunities between human biologists, anthropologists, social scientists, and other researchers so that data sharing and interdisciplinarity pave the way towards a healthier, fairer and more equalitarian future with less poverty and disadvantage.

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Disclosure statement

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Maria Inês Varela-Silva
Centre for Global Health and Human Development, School of Sport, Exercise and Health Sciences, Loughborough University, Loughborough, UK
m.i.o.varela-silva@lboro.ac.uk

Cristina Santinho
Centre for Research in Anthropology (CRIA), University Institute of Lisbon ISCTE, Lisbon, Portugal