

## BOOK REVIEWS

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**Annual Review of Public Health, 2016.** Jonathan E. Fielding, Ross C. Brownson and Lawrence W. Green (eds). Annual Reviews, 4139 El Camino Way, P.O. Box 10139, Palo Alto, California 94303-0139. Vol. 37. xii + 462 pages. Price: US\$ 96.

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This volume of the annual review opens with a methodology article 'Improved designs for cluster randomised trials' by C. M. Crespi. Over time, health research has developed a pyramid of the strength of evidence for medical and therapeutic interventions. Randomized controlled trials occupy a place on the top of the pyramid. In individually randomized trials, the participant is randomly allocated to the treatment options. Cluster randomized trials involve the random allocation of groups rather than individuals to interventions, and have been widely used in public health research. This opening article is an essential reading for those involved in public health research. The author outlines in very lucid and readable text, the limitations of classical cluster randomized control trials and describes alternatives with easily understood representative examples. These study designs are discussed in many epidemiology courses only in passing and having engaged in several cluster randomized trials at a population level, I found this article extremely relevant and practical.

The seemingly innocuous title of the article 'Nutritional determinants of the timing of puberty' by Villamor and Jansen belies the public health importance of the onset of puberty. However, as the authors themselves point out, early onset of puberty is associated with adolescent substance and alcohol abuse, smoking, early sexual initiation and teenage pregnancy in the short term and obesity, diabetes, cardiovascular disease and breast and endometrial cancer in the long term. The authors focus on several possible determinants in both boys and girls including early linear growth, childhood obesity, childhood protein intake particularly of animal protein and dairy, fat and carbohydrate intake and the influence of specific micronutrients. Data that are available provide some clear associations for girls, but data for boys are limited and clearly need to be generated.

One of the articles in this volume that especially held my interest was 'Making

healthy choices easier: regulation versus nudging' by Hansen *et al.* The notion that knowledge is not necessarily linked to healthy behaviour is not new. Therefore interventions that aim to promote healthy behaviours need to look beyond enhancing the knowledge base of target populations, although this is clearly important as a first step to enhance health literacy. Nudging refers to those interventions that gently push people towards making healthy choices. The authors contrast the whole process of nudging and regulation as means to achieve desired behaviours. One of the perceived limitations of nudging is whether it can induce sustainable behaviour. The authors describe how unhealthy eating has been sustained by, for example, advertising and pricing policies and that the lessons learned from unhealthy behaviour patterns should now be applied to promote healthy behaviours. This area of work as research, is relatively new, and challenges public health practitioners to open their eyes to the varied possibilities of 'nudging' in day to day behaviour. Some ethicists have voiced their concerns that nudging amounts to manipulation of behaviour. The contrary position is that since behaviour choices have not been limited as they might have been with regulation, there is no assault on personal autonomy.

The review 'One hundred years in the making: The global tobacco epidemic' by Wipfli and Samet focuses on the first century of what they describe as 'one of the first instances of the globalisation of a non-infectious cause of disease'. The article is, to my mind, critical reading for all those involved in public health. The article is replete with key historical events and includes a description of the rise of cigarette use and the scientific discovery of the association of smoking and disease, the development of policy initiatives, the role of litigation, the globalization of the tobacco industry and the culmination in the WHO Framework Convention on Tobacco Control and the Bloomberg Initiative to reduce tobacco use.

Public health research has evolved considerably in its methods and increasing accessibility to geographical information systems has allowed for a variety of uses in spatial data analysis including to geographically map areas of low and high prevalence of diseases, and track all-cause or cause-specific mortality rates

over time in geographical clusters, among others. This is the subject of a biostatistical article by Sudipto Banerjee, which speaks of cross-disciplinarity of public health research. Keeping with novel methods of data acquisition and use, an article by Casey *et al.* entitled 'Using electronic health records for population health research: A review of methods and applications' outlines the possibilities of electronic health records (EHR) and compares studies using EHR with traditional epidemiological studies. The review is comprehensive, it outlines the various data domains that are currently available from demographics and treatment encounters to health behaviours and data stored as free text and images. Issues that are specifically discussed include the representativeness of EHR data, the problem of study population attrition, recall bias and a comparison with traditional studies in terms of time, cost and size of studies. It also, rightly, discusses issues of access to data, privacy and security.

Environmental issues in health are discussed in the article on 'Cumulative environmental impacts: science and policy to protect communities' by Solomon *et al.* The authors outline four key concepts that underlie cumulative impacts: the fact (i) that health disparities are linked to social and environmental factors across many diseases; (ii) that there are large inequalities in exposures to environmental hazards; (iii) that there are biological factors that can modify the effects of environmental factors and (iv) that effects may be amplified by social vulnerability factors. The authors rightly point out that it is most often the poor and marginalized community that is most affected by environmental hazards and that limited access to health care, and access to other basic amenities can compound outcomes of exposure. The authors call for higher levels of community engagement of collaboration and empowerment, rather than simple consultation and information dissemination. Another review which addresses an environmental issue is 'Heat, human performance, and occupational health: A key issue for the assessment of global climate change impacts' by Kjellstrom *et al.* The authors predicate their article on the view that increasing heat exposure during the hottest months of each year is a key feature of global climate change. They also present a framework of causal

pathways for the direct heat effects on working people in terms of health-related behaviour such as physical activity and ill effects on health and its wider impact on population health status. Potential impact for the future is charted out. The article is important because it focuses attention again on climate change and the economic and health impact of this for the future. India is one of the countries that is likely to be affected by the amount of daylight hours lost to productive work because of heat exposure and this should be a special cause of concern to all of us.

One of the issues that continues to bedevil public health care efforts in developing countries is the disparity in health care access and infrastructure between urban and rural areas. In India this has been the subject of much introspection

from the time of the Bhore Committee Report of the 1940s, and the Borkar report in independent India and the periodic call to make rural service compulsory for new medical graduates. In the article ‘Rural health care access and policy in developing countries’, Strasser *et al.* explore this theme in relation to Sub-Saharan Africa. Many of the themes that emerge could be transplanted to other developing countries as well. They call for the recruitment and training of local students from underserved areas to deliver quality health care in rural community settings. As with India, retention of this trained workforce in rural areas will be the key.

This volume of annual review has, in addition, articles on the new field of legal epidemiology, an analysis of metrics in urban health, tackling intergenera-

tional effects on obesity, and health disparities related to location, race or income, among others.

I found this edition of the *Annual Review of Public Health* particularly readable. The articles spanned a range of issues of importance across the globe. Infectious disease and the issues of drug resistance were not dealt with – these will likely be themes that we will see in future issues, given their importance. I believe that public health practitioners and researchers will be happy with this volume.

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