Psychosocial epidemiology, social structure, and ideology

Psychosocial epidemiology (that is, pertaining to the influence of social factors on a person’s behaviour, and to the interrelation of behavioural and social factors) is a controversial field within epidemiology. Here, we restrict our critique to epidemiological studies of psychosocial constructs and we acknowledge the relevance of neuroscience and neuroendocrinology to understand the proximal pathways by means of which psychosocial exposures affect the health of organisms. Our goal is not to attack the work that has been done on psychosocial factors, but argue for the need to further integrate psychosocial factors with social structure. Important research has also been conducted on the psychosocial pathways that might mediate the effect of social structure on individual physical and mental health. This research includes studies of job control, effort reward imbalance, social isolation/social support, and early psychosocial exposures. In addition, the Whitehall study has already provided evidence suggesting that control explains an important part of the health gradient among workers using both self reports and independent assessments. These studies lay the ground for future research that might integrate social structure, psychosocial exposures, and health.

However, some psychosocial constructs seem to gain and lose popularity without a strong justification for their fortunes. If this suspicion were correct, lack of strong cumulative progress might be attributable to methodological roadblocks such as the large number of omitted variables, the large number of associations that can be usually uncovered with a large enough sample, the occasional over-reliance on self reports, conflating independent and dependent variables (for example, social capital, violence, drug use), and the use of competing hypotheses that are as weak as those being tested.

Limitations also originate from psychosocial theory. Psychosocial constructs are expected to provide generalised risk factor associations across time and place, ignoring the determining social structure. Even when constructs are conceived under historical and social constraints, researchers seem to transform them into a-historical, psychological attributes. For example, the “type A” coronary prone behaviour pattern originated in clinical findings of the work related behaviour of mostly white men middle managers in post-war USA bureaucratic corporations. The construct thus referred to a specific period, cohort, age, class, sex, race, and organisation. Soon enough, health and social psychologists, epidemiologists, and public health researchers transformed this construct into the search for a “type A” personality or trait of presumed universality devoid of relations to its social context. The result was the narrowing of the concept to some forms of hostility (a psychological construct). Type A is not the only psychosocial construct that has been stripped of its link to historically specific social structures: “stressful life events” are apparently randomly distributed in the population; social cohesion and social support are implicitly defined in terms of US middle class social psychology; and “job stress” is presented as independent from the labour process, employment contracts, social class, or class exploitation. The absence of social structure is even more glaring with psychological constructs such as self esteem or sense of coherence. But some putative sociopsychological risk factors might be too dependent on a changing social structure to attain great generality across time and place. Without understanding the link between social psychology and social structure (for example, the “type A” behaviour might have been determined by post-second world war upward mobility, bureaucratic corporations with many middle managers, job stability, the Protestant work ethic, and meritocratic work values), psychosocial constructs are reduced to their common psychological denominator (for example, hostility) in a quest for replications with populations from different nations, large study samples, long follow up periods, and application of new statistical techniques. Although such a strategy, typical of risk factor epidemiology, can lead to high quality productive research programmes (for example, job demands and lack of autonomy as a risk factor for high blood pressure) it fails to deliver in terms of mechanisms and explanations in social epidemiology.

While there are virtually hundreds of measures of psychosocial variables (for example, think of “stress” scales), introducing measures of property relations and control over the labour process, the legal and economic foundation of our society, seems “off limits”. Instead researchers are expected to use “SES” rankings of education, income, or occupation with the functionalist assumptions that predominate in mainstream epidemiology. Unfortunately too many EU epidemiologists are willing to accept this state of affairs, presumably to harmonise with their US colleagues (for example, as in a recent sociological analysis of the Spanish civil war 1936–1939 in terms of lack of social capital). There are exceptions however, such as Richard Wilkinson and his collaborators who dared to challenge the “SES” orthodoxy by generating interest in income inequality. Not surprisingly, these researchers have encountered a great deal of opposition, as in a recent publication by the American Enterprise Institute, that otherwise extols the virtues of research on job control. It is noteworthy to highlight that individual differences psychobiology and functionalist accounts of social inequalities in health rely on the reluctance to draw explicit social mechanisms (for example, exploitation) without moving beyond “SES” orderings (that is, as in references to mysterious gradients or fundamental causes; see Gottfredson).

We understand ideology as a system of factual statements and value judgments that inspires social, including public health, policies. Given such definition, psychosocial epidemiology becomes mostly ideological when the policies it inspires lack scientific justification (for example, “subjective stress is the major social determinant of cardiovascular mortality, therefore we should focus on changing people’s perceptions of their social and work environment.”) Thus, to provide more accurate and useful accounts of how society affects health, a-historical and structure-less psychosocial constructs (for example, “social capital”, “sense of coherence”, “hostility”, “life events”, “job stress”, “social support”, “self esteem”) could be replaced with less ideological, historically specific (for example, age-cohort-period) models in which social structure and psychosocial exposures are integrated into mechanisms that influence population patterns of mortality and morbidity.
REFERENCES


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Hair in toxicology: an important bio-monitor


Hair in Toxicology: an important bio-monitor is a scientific and practical book. Hair testing began slowly about 28 years ago, initiated perhaps by Baumgartner's pioneering article. Sachs suggested an erratic growth thereafter, with a "gold rush" period between 1986 and 1992, typified by relatively uncontrolled use of hair testing, followed by a "hang over" period between 1992 and 1996 emphasised by more critical reflection. It seems that a renewed "gold rush"—at least of published papers if not of conclusive results—began thereafter. Hair allegedly offers one crucial potential advantage when compared with—for example, blood or urine—as a medium for divination—the long time window. Whereas blood and urine can only indicate use for a few days, hair offers the possibility of retrospective use examination for at least several months. A number of other advantages of using hair are sometimes cited (difficult to falsify, easy to store, lengthy shelf life, low body invasion, etc.). Hair analysis is used as a tool in the detection of xenobiotics (drug of abuse, pharmaceuticals, environmental contaminants, etc.), forensic science, traffic occupational medicine and clinical toxicology. The subject of analytical testing in hair has always had an element of controversy due to perceived problems of environmental exposure, among other areas of concern, and Hair in Toxicology: an important bio-monitor takes on these issues in a direct manner.

The book begins with a brief but nice preface by Dr Desmond John Tobin and contains four parts. It starts out by telling us about the biology of hair (the biogenesis and growth of human hair; the anatomy, biosynthesis, physical properties, pigmentation and abnormalities of the hair shaft). Many figures enhance the information given by the text. The second part of the book is an excellent review regarding the application of hair biology in environmental assessments. The application of hair biology in forensic toxicology and human identification is discussed. The authors present several forensic cases where hair analysis has indicated drug-facilitated crimes. Then, the book briefly summarises the toxicology and kinetics of metals in relation to hair, presents the relative advantages and disadvantages of hair compared with other biomarkers of exposure to metals and considers situations where hair analysis may be indicated to monitor or document human exposure to metals. It also discusses the misuses of "commercial" hair tests for panels of metals and minerals whose results are promoted as indicators of health, nutritional status and metal toxicity. Tables help to summarise complex concepts wherever necessary. An appropriately broad range of metal toxicity is covered with the viewpoints of both symptoms and signs. The last two chapters of part two provide information about the advantages and limitations of hair fibre analysis as a biomarker of human exposure to environmental pollutants and trace elements; advantages and problems associated with the use of hair as a study tissue; and diseases associated with changes in hair composition. These chapters provide a step-by-step discussion of the above information by reviewing different human studies as well as by providing easy-to-understand figures and tables.

Hair in toxicology: an important bio-monitor tells us not only about how hair can serve as a biomarker for toxicity and exposure but also about how the different hair care products can affect the body. In the third part of the book the chemistry of hair care products and their potential toxicological issues are discussed. Finally, in part four, an interesting chapter on the value of hair in bio-archaeology—for example, hair as an indicator of past diet and population movement or as an indicator of exposure to pollutants, and as a record of drug or micronutrient use. A practical aspect of this book is that testing procedures and the interpretation and clinical use of hair analysis are described for the related subjects in several chapters.

Overall, the general appearance of the book is satisfactory. The clarity of the figures is appropriate. The index is thorough, and I found it relatively easy to use. The accuracy and coverage of the references, by all of the authors, are good. Copious references are included with each chapter. Abbreviations are explained as they appear in the text. Numbering the tables and figures according to the chapter gives a better correlation. This book, with adequate references, gives sufficient information to meet the needs of advanced undergraduates and postgraduate students. This is also suitable for biologists, toxicologists, pharmacologists, nutritionists and a variety of students who wish to obtain additional knowledge of hair analysis. Many of the authors of this book are well known in the fields of environmental health sciences, toxicology, biomedical sciences, analytical chemistry, occupational health medicine, industrial medicine and archaeological research and represent an almost even split between European and American contributors. It is my opinion that this book complements the previous text, regarding hair analysis, nicely.

With all my experience in this branch of medicine I highly recommend this text to all toxicologists. Sections in this text should also be reviewed by doctors who see patients with chronic toxicity. People who have had chronic exposure to toxic substances may also find chapters in this book helpful.

N Ezizadi Mood

Handbook for good clinical research practice (GCP): guidance for implementation

Published by the World Health Organization, Geneva, 2005, pp 125 (softcover) + CD. ISBN 92-4-159392

Ever thought good clinical practice (GCP) dull? Ever felt abbreviated out? Well, I’d like to report that the WHO’s Handbook for good clinical practice (GCP): guidelines for implementation is an antidote to the mind-boggling stream of acronyms bandied about in research and development departments throughout the world, and that it provides an interesting and amusing narrative on the current minefield that constitutes Research Governance...

Well, as the title might suggest, it was a bit of a long shot.

Research and development managers, finance departments, data protection officers and ethics committees now form a formidable team apparently dedicated to sifting out the life of a research idea at conception. They have had to become familiar with the requirements of GCP, mandatory in this country since March 2004. The research community is slowly catching up. Transforming research from its cottage industry status, where anyone can have a go, has been a traumatic experience for many researchers. It remains so in some cases, and “own account” studies on investigational medicinal products are becoming a rarity. GCP, of course, applies to any study involving human subjects, not just to drug or device trials. The business of research governance is now bedded down in many trusts, especially the larger ones, and is operating reasonably smoothly. It is easy to forget, however, especially when attempting to get an investigational medicinal product study off the ground, that GCP regulations are actually intended to improve the quality of research and the safety of patients. In most cases, this is exactly what they have achieved. The handbook acts as a useful reminder of the essential philosophy underpinning the bureaucracy.

It provides a concise and clear description of the 14 principles underlying GCP as well as guidance on their implementation in practice. The roles and responsibilities of the various stakeholders in the research process are also described. There are many sources used, the eight most important of which are on an accompanying CD. It follows the research process through the development of the protocol and standard operating procedures, support systems and trial-related documentation, selection of trial sites, ethics approval, through to data management and reporting. Each step in the process has relevant GCP principles, which need to be borne in mind.

Naturally, the handbook is written for an international audience and will only ever act as useful background to your local GCP training. Nevertheless, it is background that I’d recommend to serious triallists and health services researchers.

Andy Barton