

# LETTERS TO THE EDITOR

## Short form 36 questionnaire

SIR—In a recent article by Ziebland,<sup>1</sup> the author attempted to assess the usefulness of the short form 36 (SF 36) health status questionnaire in measuring health gain in population surveys. This was done by using recently published normative data from the Oxford lifestyle survey to calculate effect sizes for hypothesised changes in reported health status. The author hypothesised: (i) an improvement in mean reported health status of people in social class V to that of people in social class I, and (ii) an improvement in mean reported health status of 55–65 year olds to that of men and women 10 years their junior. She found that the size of the effect measured by the SF 36 was small to moderate, and concluded from this that the SF 36 was an inadequate tool for assessing population changes in health. This paper provides a classic example of an inappropriately applied statistical method leading a researcher to draw a completely inappropriate conclusion. As I hope to demonstrate, the correct statistical analysis applied to the same data using the same hypothesis leads to the opposite conclusion—that is, that the SF 36 is extremely sensitive to small changes in a population's perceived health status, even using samples of around 3–400, and is therefore useful in monitoring health gains at population level.

Ziebland is quite correct when she describes the effect size as “a measure of the relative magnitude of a change”, and quotes Cohen's rule of thumb of 0.2, 0.4, and 0.8 as indicating small, moderate, and large clinical effects respectively.<sup>2</sup> However, to say that an effect size is a measure of the magnitude of a change is not the same as saying that it is a measure of an instrument's responsiveness. This is because the effect size is determined by four factors: the actual change in health status occurring in the population, the sample size, the variation in health in the population, and the responsiveness of the measure. The reason Ziebland found small to moderate effect sizes in her paper is obvious from the data presented in her tables; the differences in perceived health status between social classes, and between 55–65 year olds and those 10 year younger are only small to moderate. For example, in her paper Ziebland reports a small effect size of 0.23 for the hypothetical change in mean general health (as measured by the SF 36) for men and women of social class V to that of social class I. This is not surprising given the small mean difference (4.8%) between these groups.

A much more helpful method of assessing the usefulness of the SF 36 in measuring health gain in population surveys is to use confidence interval analysis.<sup>3</sup> The table presents 95 and 99% confidence intervals for the hypothesised change in mean health status, as measured by the SF 36, for men and women in social class V to that of social class I, using the data reported in Ziebland's paper. The results indicate quite clearly that even with the small to moderate differences in perceived health status (as measured by the

SF 36) observed between social classes V and I, and with samples of 230–380 people in each group, there is a less than 1% probability that these observed differences occurred by chance.

The conclusion therefore is that the SF 36 is responsive enough to detect quite small changes in health in a population. Whether or not these small changes constitute “clinically” or “socially” significant improvements is a matter for health professionals, politicians, and the public to decide.

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- 1 Ziebland S. The short form 36 health status questionnaire: clues from the Oxford region's normative data about its usefulness in measuring health gain in population surveys. *J Epidemiol Community Health* 1995;49:102–5.
- 2 Cohen J. *Statistical power analysis for the behavioural science*. New York: Academic Press, 1977.
- 3 Gardner MJ, Altman DG. *Statistics with confidence*. London: British Medical Journal, 1989.

## Reply

Danny Ruta is concerned that it is an inadequate grasp of statistics which has led me to conclude that community surveys using the SF 36 would lack the sensitivity to assess the impact of health policies. While I am quite happy to agree that the effect size may not be the only statistic appropriate for assessing changes within a population, it has been identified as the one most often employed for this sort of analysis.<sup>1</sup> It is also irresistible (because the error is presaged by a touch of pomposity) to point out that he is mistaken in asserting that sample size is among the ingredients of the effect size calculation, which includes only the mean and standard deviation of the scores.

The hypothetical changes in reported health status were selected as deliberately extreme examples: whether simple mean differences which range from 4.8% to 9.6% should be considered small, moderate, or dramatic is not something which can be considered in abstract.<sup>2</sup> Certainly, the ability of an instrument to detect a difference between the health status of social classes I and V cannot be taken as the final arbiter of responsiveness. It is therefore with some surprise that I see such effort being taken to demonstrate that these (observationally quite uncontroversial) differences would occur by chance less often than 1% of the time in samples of 230–380 per group. This is hardly the issue since policies which could be expected to have even a tenth of the impact of such a change are extremely rare. My contention is that if *even such gross changes* would elude detection by the approach which has been most frequently used for this purpose, then perhaps other methods of identifying community health gain, such as focused studies using non-survey methods,<sup>3</sup> should be considered.

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- 1 Lydick E, Epstein RS Interpretations of quality of life changes *Quality of Life Research* 1994;2: 221–6.
- 2 Jenkinson C. Evaluating the efficacy of medical

treatment: possibilities and limitations. *Soc Sci Med* 1995; (in press).

- 3 Fitzpatrick R, Boulton M. Qualitative methods for assessing health care. *Quality in Health Care* 1994;3:107–13.

## Smoking and health promotion in Nazi Germany

SIR—Hermann Brenner's letter<sup>1</sup> seems to consider that our article “Smoking and health promotion in Nazi Germany”<sup>2</sup> should have contained a “careful review of more informative individual-level studies” of interventions aimed at reducing smoking. This seems to rather spectacularly miss the central point of our piece, which is that to understand smoking behaviour in populations, some knowledge of the historical and social background is required. By discussing the possible reasons for the continuing high levels of smoking in Germany, backed up by a cohort analysis stretching back to those who initiated their smoking during or before the second world war, and not referring to the possible long term influence of one of the most dramatic (and fortunately, in what it accompanied, historically unique) prohibitionist movements the world has seen, seems bizarre. This is especially the case when the reasons Brenner cites for the remaining high rates of smoking – the lack of restrictive smoking policies in workplaces and on transport, together with a paucity of health education activity among youngsters – are exactly those which the Nazis implemented, with little success.

Understanding behaviours as complex as smoking requires a considerably more sophisticated view of how the world is than one which sees individual-level motivation as primary.<sup>3</sup> The biological and psychological dependence induced by sustained nicotine use and the no less fundamental economic dependence of capitalism on expanding potential markets cannot be considered separately.<sup>4</sup> The social function of smoking and the contribution of the status as a smoker to the construction of identities must also be considered.<sup>5</sup> Of relevance to our article, the possible conscious adoption of smoking as a form of resistance cannot be easily dismissed.<sup>6</sup> Thus smoking among adolescent women can simultaneously represent and construct resistance to gender stereotyping.<sup>7</sup> In the Nazi period, the Hitler Youth surveillance teams, at least, understood this point. In a Hitler Youth report on the anti-authoritarian Hamburg Swing Youth, the contribution of smoking to general degeneracy was clear:

“The dance music was all English and American. Only swing dancing and jitterbugging took place. At the entrance to the hall stood a notice on which the words “Swing prohibited” had been altered to “Swing requested” . . . The dancers were an appalling sight. None of the couples danced normally, there was only swing of the worst sort. Sometimes two boys danced with one girl; sometimes several couples formed a circle, linking arms and jumping, slapping hands, even rubbing the back of their heads together, and then, bent double, with the top half of the body hanging loosely down, long hair flopping into the face, they dragged themselves round practically on their knees. When the band played a rumba, the dancers went into wild ecstasy . . . The band played wilder and

wilder items; none of the players were sitting down any longer, they all "jitterbugged" on the stage like wild creatures. Several boys could be observed dancing together, always with two cigarettes in the mouth, one in each corner."<sup>8</sup>

A "careful review of more informative individual-level studies" of smoking cessation which Brenner asks for, has, in fact, been carried out.<sup>9</sup> It demonstrates rather small effects of individual education. Interventions in collective settings such as schools, even when well developed, can have very disappointing outcomes.<sup>10</sup> Claims for dramatic effects – such as the 80% reduction in female smoking consequent on a prohibition of workplace smoking in the study by Brenner,<sup>11</sup> tend to be based on investigations which are methodologically very poor. Recently the results of a series of methodologically high quality evaluations of smoking cessation interventions have appeared, showing essentially no additional effect of well developed, community-based interventions over and above secular trends.<sup>12–15</sup> Changes in smoking behaviour do occur, but they cannot be attributed with any degree of certainty to Brenner's favoured explanations. A deeper understanding of the social, cultural, and economic foundations – and consequences – of public policy in relation to smoking is needed. Indeed, an interest in consequences may be of particular importance, as the evidence grows that some apparently reasonable policies may increase the misery of those in the poorest sections of society.<sup>16</sup> Rather than attempt to atomise society for analytical and interventionist purposes, a more considered approach to what people do is required. This must involve resisting the – sometimes understandable – desire to forget history.

- 1 Brenner H. Debating the efficacy of smoking intervention strategies (letter). *J Epidemiol Community Health* 1995;**49**:443.
- 2 Davey Smith G, Ströbele SA, Egger M. Smoking and health promotion in Nazi Germany. *J Epidemiol Community Health* 1994;**48**:220–23.
- 3 Chapman S. Unravelling gossamer with boxing gloves: problems in explaining the decline in smoking. *BMJ* 1993;**307**:429–32.
- 4 Goodman J. *Tobacco in history: the cultures of dependence*. London: Routledge 1993.
- 5 Klein R. *Cigarettes are slobline*. London: Picador, 1995.
- 6 Davey Smith G, Ströbele S, Egger M. Smoking and death. *BMJ* 1995;**310**:396.
- 7 Wearing B, Wearing S, Kelly K. Adolescent women, identity and smoking: leisure experiences as residence. *Sociology of Health and Illness* 1994;**16**:626–43.
- 8 Peukert DJK. *Inside Nazi Germany: conformity, opposition and racism in every day life*. London: BT Batsford, 1987.
- 9 Sanders D. *Smoking cessation interventions: is patient education effective?* London School of Hygiene and Tropical Medicine: PHP Departmental Publication No. 6, 1992.
- 10 Nutbeam D, Masaskall P, Smith C, Simpson JM, Catford J. Evaluation of two school smoking education programmes under normal classroom conditions. *BMJ* 1993;**306**:102–7.
- 11 Brenner H, Mielck A. Smoking prohibition in the workplace and smoking cessation in the Federal Republic of Germany. *Pre Med* 1992;**22**:252–61.
- 12 The COMMIT Research Group. Community intervention trial for smoking cessation (COMMIT):I. Cohort results from a four-year community intervention. *Am J Public Health* 1995;**85**:183–92.
- 13 The COMMIT Research Group. Community intervention trial for smoking cessation (COMMIT):II. Changes in adult cigarette smoking prevalence. *Am J Public Health* 1995;**85**:193–200.
- 14 Lando HA, Pechacek TF, Pirie PL, *et al*. Changes in adult cigarette smoking in the Minnesota heart health programme. *Am J Public Health* 1995;**85**:201–8.
- 15 Glasgow RE, Terborg JR, Hollis JF, Severson HH, Boles SM. Take heart: results from the initial phase of a work-site wellness program. *Am J Public Health* 1995;**85**:209–16.
- 16 Marsh A, McKay S. *Poor smokers*. London: Policy Studies Institute, 1994.

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## NOTICES

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**The XIV International Scientific Meeting of the International Epidemiological Association: Global Health in a Changing Environment**, 27–30 August, 1996, Nagoya Congress Centre, Nagoya, Japan. For further information: The XIV ISM Secretariat, c/o Department of Preventive Medicine, Nagoya University School of Medicine, 65 Tsurumai-cho, Showa-ku, Nagoya 466, Japan. Tel: 81-52-741-2111 ext 2074. Fax: 81-52-733-6729. E-mail: i45457a@nucc.cc.nagoya-u.ac.jp.

**Documentation Centre Socio-Economic Inequalities in Health**. At Erasmus University Rotterdam a specialised documentation centre on socioeconomic inequalities in health has been operating since 1989. Anyone interested in the relation between health and socioeconomic position can use the centre. For more information please contact: Documentation Centre Socio-Economic Inequalities in Health, Department of Public Health, Hanneke van Trirum or Karien Stronks, Erasmus University Rotterdam, PO Box 1738, 3000 DR Rotterdam. Tel: (+31 10) 408 77 14

**First European Forum of Quality Improvement in Health Care**: 7–9 March 1996, QEII Conference Centre, London. For more information contact: Clare Moloney, BMA Conference Unit, BMA House, Tavistock Square, London WC1H 9JP. Fax: 0171 383 6663, Tel: 0171 383 6478

of health, such tools do not attain the degree of rigour demanded of a precise scientific instrument. More worryingly, the text could also be criticised from the very perspective that it intends to promote. It could be argued that a fundamental tension exists between the relatively enlightened thoughts on concepts of health contained within the introductory chapter and the highly formal and quantified tools that subsequently follow. In reviewing discrepancies between the SF-36 measure of general health and associated qualitative assessments of health, Hill, Harries, and Popay<sup>1</sup> have already suggested that irrespective of any intended sensitivity, quantitative tools can never match the subtlety gained from more open ended methods. This tension is left largely unresolved in the text.

Bowling herself points out that it is easy to criticise established tools. It is also arguable that in a policy context which demands quantitative data to inform decision making, such tools are practical, pragmatic, and inherently useful. If this is the case, Bowling's book provides an important step towards the development of measures of quality of life that are both sensitive and rigorous.

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<sup>1</sup> Hill S, Harries U, Popay J. *Patients' assessments of the outcomes of their care*. PHRR report 3 July 1994.

## BOOKS RECEIVED

APHA. **Chronic Disease Epidemiology and Control**. (Pp 358; £22.50) APHA, 1993. ISBN: 0-87553-214-4.

B K Armstrong, E White, R Caracci, **Principles of Exposure, Measurement in Epidemiology**, (Pp 351; £25.00). OUP, 1994. ISBN: 0-19-262020-7.

A Bowling. **Measuring Disease**. (Pp 274; £37.50 hbk, £16.99 pbk). Buckingham: Open University Press, 1995. ISBN: 0-335-19225-4.

P A Braveman, E Tarimo. **Screening in Primary Health Care**. (Pp 196; \$27.10). New York: WHO, 1994. ISBN: 92-4-154473-2.

D Coggon. **Statistics in Clinical Practice**. (Pp 116; £10.95). London: BMJ Books, 1995. ISBN: 0-7279-0907 X.

M C Colquhoun, A J Handley, T R Evans (eds). **ABC of Resuscitation** (3rd ed) (Pp 88; £12.95). London: BMJ Books, 1995. ISBN: 0-7279-0839-1.

B Davey, A Gray, C Seale (eds). **Health and Disease: A Reader**. Pp 436; £40.00 hbk, £14.99 pbk). Buckingham: Open University Press, 1995. ISBN: 0-335-19209-2.

P S W Davies, T J Cole (eds). **Body Composition Techniques in Health and Disease**. (Pp 282; £37.50). Cambridge: Cambridge University Press, 1995. ISBN 0-521-46179-0.

J M Dixon (ed). **ABC of Breast Diseases**.

(Pp 74; £12.95). London: BMJ Books, 1995. ISBN: 0-7279-0915-0.

G Edwards. **Alcohol and the Public Good**. (Pp 226; £14.95). Oxford: Oxford Medical Publications, 1994. ISBN 0-19-262561-6.

M A Favia. **Vandals at the Gates of Medicine**. (Pp 403; \$41.95) Hacienda Publications, 1994.

P Foster. **Women and the Health Industry**. (Pp 218; £37.50 hbk, £12.99 pbk). Oxford: Oxford University Press, 1995. ISBN: 0-335-09472-4.

J Fry, J Horder. **Primary Health Care in an International Context**. London: Nuffield Provincial Hospitals Trust, 1994. ISBN: 0-900574-90-9.

J Garcia, M France-Dawson, A Macfarlane. **Improving Infant Health**. (£5.99). London: Health Education Authority, 1994. ISBN: 0-7521-0230-3.

J Gomez. **Living with Diabetes**. (Pp 133; £6.99). London: Sheldon Press, 1995. ISBN: 0-85969-723-1.

A Greese, D Parker. **Cost Analysis in Primary Health Care**. (Pp 147; SwFr 25). Geneva: WHO, 1994. ISBN: 92-4-154470-8.

T Harpham, I Blue (eds), **Urbanization and Mental Health in Developing Countries**. (Pp 266; £32.50). Aldershot: Avebury, 1995. ISBN: 1-85628-971-0.

Health Education Authority. **Alcohol: Intervening in Primary Care**. (£4.99). London: HEA, 1994. ISBN: 0-7521-0229 X.

O Hockwin, K Sasaki (eds). **Developments in Ophthalmology**. (Pp 100; \$94.50). Basel: Karger Press, 1993. ISBN: 3-8055-5987-9.

J Hunt. **Coping Successfully with Your Irritable Bladder**. (Pp 82; £5.99). London: Sheldon Press, 1995. ISBN: 0-86969-717-7.

C Jenkinson. **Measuring Health and Medical Outcomes**. (£35.00). London: UCL Press. ISBN: 1 85728 083 0 (hbk); 1-85728-084-9 (pbk).

P Johnstone, J Ranken, **Management Support for Primary Health Care**. (£12.00). FSG Communications, 1994. ISBN: 1-871180-20-4.

King's Fund. **Tackling Inequalities in Health**. (Pp 166). London: King's Fund, 1995. ISBN 1-85717-088-1.

J M Last (ed). **A Dictionary of Epidemiology** (3rd ed) (Pp 180). Oxford: Oxford University Press, 1995. ISBN: 0-19-509668-1.

Laukinen, Bergstrom, Makela, Petomaa, **Health and Disease in Developing Countries**. (Pp 586). London: Macmillan, 1994. ISBN: 0-333-589000-9.

J Corbett McDonald (ed). **Epidemiology of Work Related Diseases**. (Pp 498; £49.95). London: BMJ Books, 1995. ISBN: 0-7279-0856-1.

M Marinker (ed). **Medical Audit and General Practice** (2nd ed) (Pp 224). London: BMJ Books, 1995. ISBN: 0-7279-0908-8.

C G N Mascie-Taylor, B Bogin, **Human variability and plasticity**. (Pp 241; £35.00). Cambridge: Cambridge University Press, 1995. ISBN: 0-521-45399-2.

P Meers, J Sedgwick, M Worsley, **Microbiology and Epidemiology of Infection for Health Science Students**. (Pp 330; £14.99). London: Chapman and Hall, 1995. ISBN: 0-412-59900-7.

Mielck, Giraldes, **Health Inequalities**. (Pp 235). Waxmann, 1995. ISBN 3-89325-299-1.

C S Muir, P McKinney. **A Strategy for Cancer Control in Scotland**. Glasgow: Scottish Forum for Public Health Medicine. ISBN: 0-95187-422-5.

National Research Council. **Radiation Dose Reconstruction for Epidemiologic Uses**. (Pp 138; £24.95). Oxford: National Academy Press, 1995. ISBN: 0-309-05099-5.

E T O'Brien, D G Beevers, H J Marshall, **ABC of Hypertension** (3rd ed) (Pp 79; £12.95). London: BMJ Books, 1995. ISBN: 0-7279-0769-7.

D M Oleske (ed.) **Epidemiology and the Delivery of Health Care Services: Methods and Applications**. (Pp 235; \$45.00). New York: Plenum Publishing, 1995. ISBN: 0-306-44968-4.

A F Olshan, D Mattison (ed). **Male-mediated Developmental Toxicity**. (Pp 406; \$115.00). New York: Plenum Publishing, 1994. ISBN: 0-306-44815-7.

OPCS. **OPCS Longitudinal Study 1971-1991**. (Pp 374; £27.30). London: HMSO, 1995. ISBN: 0-11-691637-0.

## NOTICES

**International Congress on Women, Work and Health**. Barcelona, 18/20 April 1996. For further information, please contact: Dona, Salut i Qualitat de Vida, C/Paris 150 1º 2º, Barcelona 08036, Spain. Tel/fax: 322 65 54.

**16th International Congress of Nutrition**. Montreal, QC, Canada, 27 July-1 August 1997. For further information, please contact: Congress Secretariat, IUNS '97, National Research Council Canada, Building M-19, Montreal Road, Ottawa, ON, Canada K1A 0R6. Tel: (613) 993-7271. Fax: (613) 993-7250.

**16th Annual New England Epidemiology Summer Program**. 10 June-5 July 1996, 5 and 10 day courses at Tufts University in Medford/Boston, Massachusetts. For more information contact: The New England Epidemiology Institute, Dept PA-JECH, One Newton Executive Park, Newton Lower Falls, MA 02162-1450. Tel: (617) 244-9669; e-mail: epidemiol@aol.com.

## Corrigendum

**Smoking and health promotion in Nazi Germany**

The letter which appeared in October 1995 (49(5):555) was submitted by George Davey Smith and Matthias Egger. The letter is reprinted on p 109.

**Society for Social Medicine Abstracts**

The abstracts which appeared in the October 1995 issue (vol 49(5):534-54) were from the September 1995 scientific meeting of the Society for Social Medicine, not the 1994 meeting.