Assessment of the SF-36 version 2 in the United Kingdom

LETTERS TO THE EDITOR

Assessment of the SF-36 version 2 in the United Kingdom

EDITOR,—I read with interest the recent article on the SF-36.1 The authors present data regarding the psychometric and epidemiological characteristics of the SF-36 version 2. The authors present the results from a large sample of people aged 18–64. The analysis reveals that the questionnaire has good reliability and construct validity. The layout of the new questionnaire is certainly improved and in this respect I think that participants will find it easier to complete. However, I believe that many of the problems that were inherent in the original version have not been resolved. The validity and reliability of the questionnaire relies in part upon users completing it accurately. Any change in the questionnaire’s format should be designed to improve the accuracy of users’ responses, which will in turn improve the psychometric qualities of the questionnaire.

The authors concede that the present data are only based upon people of working age and so it remains unclear how suitable this measure is for older age groups. They suggest that further research is needed to determine how applicable the SF-36 is for this age group.

In my personal experience I would suggest that the SF-36 is not a suitable measure to use with older age groups. The main shortcoming with the questionnaire is not the layout but rather the language of the questionnaire. I would be grateful for an opportunity to draw your attention to my experience of using this tool as an outcome measure with a large group of surgical patients. I have used the SF-36 with approximately 200 patients who were recruited to examine the effects of different vascular surgery procedures on quality of life and cognitive function. Patients were assessed before their operation and six months later. Quality of life was assessed using the SF-36 and the Hospital Anxiety and Depression Scale (HAD).

The HAD scale is widely referenced in the psychiatric literature (reported sensitivity is 72–88% and specificity is 68–94%). The questionnaire is a Likert scale, and scores were coded as endorser anxiety (CBA), which is a polysymptomatic procedure carried out to reduce the risk of scale.

The second study examined the effects of abdominal aortic aneurysm repair (AAA) on quality of life. The average age of patients in the two studies was 69 and 73 years old, respectively.

It became evident very quickly that some patients failed to understand the questionnaire and completed it incorrectly. Patients were sometimes unable to identify the question and the form. If I believed that a patient had misunderstood a question then I would stop them filling out the questionnaire and re-read the question to them and re-read the question to them and re-read the question to them. After answering 14 consecutive questions regarding physical activity, many patients appeared to re-code the scale as follows: “None of the time” to “All of the time,” “More than anecdotal.” My method of recording errors was arbitrary. Indeed my method of re-reading questions to patients when I considered that they had made a mistake could be criticized for biasing patients’ responses. However, when I started using the SF-36 I quickly became convinced that many patients were failing to understand the questions. I believe that version 2 has not resolved the shortcomings that were inherent in the original version. As it stands I believe that the SF-36 should not be used as an assessment of quality of life in older patients. Investigators should also be cautious about using the tool with any patients who have evidence of head injuries, cognitive impairments or communication problems.2

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Reply

We have sympathy with the views expressed by Dr Lloyd. Clearly the SF-36 has often been raised as an important issue in the use of the questionnaire. It is important to design a questionnaire that is as simple and user-friendly as possible. One of the main criticisms of the SF-36 is that it is not designed to be used by people with limited educational backgrounds. This is an important consideration when using the SF-36 in the elderly population.

The SF-36 is a widely used measure of health-related quality of life. It is designed to be completed by people of all ages and can be used to assess the impact of a variety of conditions on health. However, it is important to be aware of the limitations of the measure and to use it appropriately. The SF-36 is not designed to be a measure of physical function, but it can be used to assess the impact of physical illness on quality of life. For example, patients with a range of chronic conditions may use the SF-36 to assess the impact of their condition on their daily lives. Dr Lloyd suggests that the SF-36 is not suitable for use with people over the age of 65. This is an important consideration, but it is not clear whether this is due to a lack of validity or reliability of the measure in this age group. It is possible that other measures may be more appropriate for use with this population.

In summary, the SF-36 is a widely used measure of health-related quality of life. It is designed to be completed by people of all ages and can be used to assess the impact of a variety of conditions on health. However, it is important to be aware of the limitations of the measure and to use it appropriately. The SF-36 is not designed to be a measure of physical function, but it can be used to assess the impact of physical illness on quality of life. For example, patients with a range of chronic conditions may use the SF-36 to assess the impact of their condition on their daily lives. Dr Lloyd suggests that the SF-36 is not suitable for use with people over the age of 65. This is an important consideration, but it is not clear whether this is due to a lack of validity or reliability of the measure in this age group. It is possible that other measures may be more appropriate for use with this population.
offered such criticisms of the SF-36 but have produced scarce scientific proof to support their claims. Claims that the measure is inappropriate for the elderly are more often than not based upon little more than anecdotes, rather than rigorously conducted qualitative studies.

Secondly, Dr Lloyd suggests that there will be errors in the answers provided by older respondents to the questions on the SF-36. This is not particularly surprising and is to be expected with all age groups. All questionnaire items consist of true measurement plus an error term. The trick is to reduce the error term as much as is possible. This is why health status measurement has for the most part adopted multi-item scales. If we take multi-item scales to assume that the errors are independent of one another and that they are of equal magnitude, then a world that now embraces evidence based medicine would be wise to adopt a similarly rigorous approach to questionnaire selection and application.

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Mortality in poorer areas

EDITOR,—Law and Morris state that “about 85% of the overall excess mortality with deprivation was attributable to heavier smoking” in their study of deaths in England and Wales in 1992.1 They correctly state that strengths of their study include allowing for the generally higher tar yield and number of cigarettes smoked by lower socioeconomic smokers, and the generally younger age of starting smoking for lower socioeconomically disadvantaged groups. They also offer the plausible argument that cohort studies may be biased against finding a substantial role for smoking as an intermediary between lower socioeconomic status and mortality, because people recorded as non-smokers in a cohort study may not have stopped smoking because of the early symptoms of smoking related disease. An ecological study would avoid this latter bias in part.

However, there are problems with the ecological study of Law and Morris that suggest the figure of 85% is likely to be a substantial overestimate. Firstly, the median local authority district size of 102 000 is large for a study that is attempting to “ecologically infer” the relation of deprivation and smoking with mortality. Greenland and colleagues have shown that the larger the size of the study unit in ecological studies, the more likely that area level bias (the “ecological fallacy”) will cause error in the inferred relations at the individual level.2 The direction and magnitude of the area level bias is impossible to predict from the ecological data alone, but is often biased away from the null. Secondly, and a component of the previous reason, both the predicted and observed relative risks used by Law and Morris will be confounded by other lifestyle factors, existing in an overestimate of the contribution of smoking. Thirdly, the external source of the relative risk data for smoking, while a highly repeatable study, was based on a cohort of male doctors and may not be generalisable to the total population of England and Wales. This lack of generalisability would arise if, as would be expected, non-smoking doctors had a lower mortality ratio than non-smoking members of the population generally because of a favourable profile of other risk factors. This in turn could result in higher relative risks of smoking being observed among doctors than non-doctors.

Yes, smoking is undoubtedly an intermediary variable between deprivation and mortality. But I doubt that if, in the counterfactual, none of the population alive in England and Wales at 1992 had ever smoked (or even that there was no variation by deprivation in smoking) that as much as 85% of the mortality in mortality by deprivation would have been removed.

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Reply

We concluded in our paper that all cause mortality was 15% higher in the most deprived compared with the least deprived districts, and that heavier smoking accounted for most (about 85%) of this excess mortality. We disagree with Blaylock that the figure of 85% is likely to be a substantial overestimate. Statistical calculations are not necessary to see that smoking accounts for most of the excess mortality in the more deprived districts. Our need only consider the additivity of specific causes of death that are more common in deprived districts (table 2 in our paper), almost all of them are smoking related. Three diseases that are strongly smoking related (lung cancer, chronic bronchitis and emphysema, and ischaemic heart disease) accounted for two thirds of the excess mortality, and other smoking related illnesses for a further sixth of the excess. Diseases related to other health risk factors (strokes of the liver, AIDS, or differences in medical care, accounted for little of the total excess mortality, while two important aetiological factors in circulatory diseases, serum cholesterol and blood pressure, show a little difference between deprived and affluent districts (not referenced 37–39 in our paper).1 Blaylock has three concerns about our smoking analysis. We do not think that our “ecological fallacy” of Greenland and colleagues (which may produce a bias in either direction) is a material problem in this context, particularly as we are not inferring relations at an individual level. Estimation of relations between smoking and diseases through cross-sectional analysis is unlikely. Asbestos and other occupational exposures that cause lung cancer may be more common in smokers, but these exposures cause relatively few lung cancer cases in relatively low districts. Associations between smoking and other heart disease risk factors tend to be weak, and as stated above, blood pressure and serum cholesterol show little variation between affluent and deprived districts. Blaylock suggests that relative risk estimates from the British Doctors Study are not generalisable. The results of the British Doctors Study in relation to smoking have in general been supported quantitatively by other large cohort studies, and we confirmed this for ischaemic heart disease.2 Moreover one would expect estimates of relative risk to be generalisable: the proportionate increase in risk in smokers should be the same in populations where smoking is relatively common or uncommon or where, for reasons other than smoking, the disease is relatively common or uncommon.

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Bayesian analysis

EDITOR,—We are delighted to see your journal publish an excellent paper showing by example how a statistical analysis that has run into difficulties can be converted into a Bayes type paper, as shown by a detailed analysis of the posterior distribution, which in turn allows a decision to be made as to whether the posterior indicates significant association.3

Burton et al 4 state that a 95% confidence interval can be interpreted as a 95% Bayesian credible interval (also known as a posterior probability interval), thus allowing the interpretation that the true hypothesis is 95% certain to lie within the interval, provided that the interval admits “‘some level of aggregation’ for the main outcome measure”.5 However, the theoretical justification for this assertion is...


We would like to add some caveats, without wanting to be necessarily too strict or correct. These caveats are unconventional in Bayesian theory and are supported by Lindley and, presumably, Burton et al. We hope that it will be helpful if we make them explicit.

The result of a standard analysis cannot be interpreted as a Bayesian result if the analysis has incorporated any of the following elements:

- Bonferroni corrections or other adjustments to error levels,
- analyses that are mathematically multivariate even though there is a univariate main outcome measure—for example, standard methods for analyzing clinical trials with interim analyses,
- analyses that ignore sources of variance—for example, common methods of evaluating survey data that take into account sampling variation but not measurement error.

We thank Dr Grossman and Dr Parmar for the thoughtful comments. The main point is that little evidence exists for a carcinogenic hazard from bracken.

We would like to call attention to the results of our case-control study that assessed the risk of bladder cancer from bracken consumption.13 Bracken has been shown to be carcinogenic in experimental and observational animal studies, producing bladder tumours in guinea pig and cattle.14 Our study was conducted in northern New England to determine reasons for the high bladder cancer mortality rates in this area.

The study included all white residents of Vermont and New Hampshire who died during 1975–79 from bladder cancer. Two randomly selected controls for each case were matched on state, gender, race, age (52 years) and year of death, were randomly selected from all other residents in each state excluding those on a long-term care facility. A questionnaire sought information on demographic characteristics, lifetime occupational and residential histories, history of tobacco and beverage use, medical history including bladder infection, and consumption of select dietary items including bracken fern (fiddlehead greens). Interviews were conducted with the next of kin of 352 cases and 673 controls. Odds ratios (OR) were calculated using both conditional and unconditional logistic regression. As both methods yielded similar results, the unconditional results were presented. A total of 24 cases (7.4%) and 71 controls (10.5%) were reported to have ever eaten bracken fern (OR=0.88, 95% confidence intervals (CI)=0.4–1.4, 1.0). Regular consumption of bracken fern was reported for 15 cases (4.6%) and 38 controls (5.6%), OR=0.8 (CI=0.4–1.7).

We would especially like to explore the relation between foodstu...
Human rights—a public health issue?

The year 1998 was important as it helped us to make a clear connection between two key global issues—human rights and public health. The two anniversaries, the 150th anniversary of the enactment in the UK of the first ever national Public Health Act in 1848, and the 50th anniversary of the Universal Declaration of Human Rights proclaimed by the General Assembly of the United Nations on 10 December 1948, add further momentum to the implicit connection. An added bonus was the UK government’s decision to incorporate the European Convention of Human Rights into the UK law, thereby increasing the utility of the Convention for UK citizens. In the United Kingdom the Medical Foundation, whose patrons include Sir Richard Doll, has given the connection between human rights and public health a new vigour through its advocacy and pastoral work in the field.

The chains linking public health and human rights are the Covenant on Civil and Political Rights and the Covenant on Economic, Social and Cultural Rights. These covenants lay the main foundations of the Universal Declaration.

The first covenant details the basic civil and political rights of individuals and nations. This covenant provides for the following rights for nations:

- the right to self determination
- the right to own, trade and dispose of their property freely and not deprived of their means of subsistence.
- the right to liberty and freedom of movement
- freedom of thought, conscience and religion
- freedom of assembly and association
- the right to privacy and right to protection of that privacy by law
- the right to liberty and freedom of movement
- the right to legal recourse when their rights have been violated, even if the violator was acting in an official capacity
- the right to presumption of innocence until proven guilty
- the right to appeal a conviction
- the right to own, trade and dispose of their property freely and not deprived of their means of subsistence.

The same covenant also attaches a number of obligations to individuals:

- freedom of opinion and expression
- freedom of thought, conscience and religion
- freedom of assembly and association
- the right to privacy and right to protection of that privacy by law
- freedom of movement
- the right to own, trade and dispose of their property freely and not deprived of their means of subsistence.

The Covenant also lists the rights that cannot be suspended for any reason:

- self determination
- self ownership of their property
- freedom of thought, conscience and religion
- freedom of assembly and association
- the right to privacy and protection of that privacy
- freedom of movement
- the right to legal recourse when their rights have been violated, even if the violator was acting in an official capacity
- the right to presumption of innocence until proven guilty
- the right to appeal a conviction
- the right to own, trade and dispose of their property freely and not deprived of their means of subsistence.

The second covenant describes the basic economic, social and cultural rights of individuals and nations, including the right to:

- self determination
- paid or otherwise compensated maternity leave
- free primary education and accessible education at all levels
- equal pay for equal work
- to form trade unions
- freedom from arbitrary arrest and detention
- the right to appeal a conviction
- the right to presumption of innocence until proven guilty
- paid or otherwise compensated maternity leave
- free primary education and accessible education at all levels
- equal pay for equal work
- to form trade unions
- freedom from arbitrary arrest and detention
- prohibition of discrimination based on race, sex, colour, national origin or language
- freedom of movement
- the right to own, trade and dispose of their property freely and not deprived of their means of subsistence.

The Covenant also provides for the right of people to choose freely whom they will marry and with whom they will found a family, and requires that duties and obligations of marriage and family be equally shared between partners. It also guarantees the rights of children and prohibits discrimination based on race, sex, colour, national origin or language.

As well as restricting the death penalty to the most serious of crimes, the covenant also guarantees condemned people the right to appeal for commutation to a lesser penalty and forbids the death penalty entirely for people under 18 years of age.

The covenant permits governments to temporarily suspend some of these rights in cases of civil emergency only, but also lists those rights that cannot be suspended for any reason.

The two covenants implicitly recognize and reinforce the World Health Organization’s Charter on health. Human health at a global level can only be effectively sustained if individuals within nations have certain enshrined rights that enable them to shape the outcomes of the key decisions that affect resource use and allocation within and between nation states.

The Universal Declaration of Human Rights needs champions within nations, both to keep the Declaration in the public eye and to assist individuals whose rights as defined by the Declaration have been breached or violated. There are many such organizations based in a number of countries. The Medical Foundation is one such body, and is prominent in the UK. The main focus of the Foundation’s work is campaigning on behalf of victims of torture. The Foundation also meets the immediate care needs of victims of torture.

The Foundation’s work is likely to acquire an added significance now that there is widespread support for the setting up of an International Criminal Court. As a majority of the Court must be permanent tribunal with universal jurisdiction over individuals responsible for systematic violations of human rights. It is argued with force that the creation of a judicial institution is crucial to the struggle against the culture of impunity that is prevalent throughout the world. By designating massive and systematic violations of human rights as crimes and effectively prosecuting the violators, the international community would show its resolve to uphold justice and the rule of law as the foundation of peace and security. So far 74 states have signed the Rome Statute, the Statute of the International Criminal Court. However, it needs 60 states to ratify the Statute for the Court to be set. So far only one state, Senegal, has ratified the Statute. It is vital that internationally the public health movement persuades more nations to ratify the statute to enable the Court to become operational.

Public health practitioners have a vested interest in supporting the work of bodies such as the Medical Foundation, as they help to remind us that the twin goals of health and human rights for all are attainable, the obstacle being us collectively. The human rights agenda is vital for public health practitioners. It is too important for us to ignore it.