For Debate
Local health and lifestyle surveys – do the results justify the costs?

Martin Bardsley, Linda Jenkins and Bobbie Jacobson

Summary
A recent review of health and lifestyle surveys conducted in general adult populations within London attempted to compare the results of these surveys. Although only the most common aspects of health and lifestyle were compared, there were few points of comparison between surveys and major differences in technique and structure of questions. There were also few results where health-related behaviour differed significantly from what one would expect from national surveys. It is suggested that local surveys on general adult populations are often too small to reveal new information with any confidence and that the cost of a larger survey may be hard to justify. Though monitoring and health surveillance are important, a general population survey for large geographic areas such as health authorities is not always the best approach, and more focused surveys should be preferred as well as methods which exploit existing sources of information.

Keywords: health and lifestyle surveys, health-related behaviour surveys, needs assessment

Introduction
Information about health-related behaviours and lifestyle are increasingly recognized as being critical to the health policy at a national and local level. As well as a growing list of national surveys there are also many examples of when local health authorities have commissioned surveys on their own population. A recent review by the Health of Londoners Project examined nine such surveys conducted on general adult populations in different parts of London over the past six years. The aim was to examine the methods and results from this work to see if there were any general conclusions that could be drawn about health-related behaviour in London, and the methods used for conducting such surveys.

Comparison of surveys in London
The analysis of London’s surveys concentrated on those that looked at the general adult population for particular geographic areas, mainly health authorities. The comparisons were limited to the issues most commonly found in general health and lifestyle surveys, namely, smoking, alcohol consumption, obesity and diet, physical activity, mental health and use of health services.

The surveys examined (Table 1) were all constructed within the past ten years and on general adult populations with sample sizes between 1120 adults and over 23,000 which covered 12 current health authorities. Quoted response rates ranged from 45 per cent to 70 per cent, and were below those seen in national surveys such as the General Household Survey (GHS) and Health Survey for England (HSE). Two of the surveys (HealthQuest and NW Thames surveys) used the same approach across wide geographic areas and were designed to provide results at the level of district health authorities.

The surveys include various approaches. Three were conducted by interview and the remainder by postal questionnaire. Two used a computerised Postcode Address File (PAF) to sample households, three used the electoral rolls and the remainder used Family Health Services Authority (FHSA) databases. The lower age limits varied between 16 and 18 years old, with one survey looking specifically at older age groups (44+). In addition, results from national surveys such as the HSE were used for comparisons.

When comparing the results of the surveys there are four key reasons why results may differ: (1) differences in the survey methods, sampling and administration; (2) differences in the way individual questions or items were set; (3) differences related to geographic areas; (4) differences related to the time of administration (1989–1994).

The analysis of the results from the various London surveys was disappointing and the ability to make comparisons between survey results very limited – even though the emphasis was on...
<table>
<thead>
<tr>
<th>Survey (abbreviation)</th>
<th>Area covered</th>
<th>Date (data collection)</th>
<th>Sample (response) drawn from</th>
<th>Ages</th>
<th>Administration</th>
<th>References</th>
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<tbody>
<tr>
<td>Health Survey for England (HSE)</td>
<td>England 14 Regional Health Authorities</td>
<td>1994</td>
<td>16569 (76%) households on PAF</td>
<td>Age 16+</td>
<td>Interview</td>
<td>2, 3</td>
</tr>
<tr>
<td>General Household Survey (GHS)</td>
<td>Great Britain 17 Areas incl Gtr London</td>
<td>1994</td>
<td>11787 (92%) households on PAF</td>
<td>All ages</td>
<td>Interview</td>
<td>4, 5</td>
</tr>
<tr>
<td>NW Thames Health &amp; Lifestyle Survey (NWT HALS)</td>
<td>NW Thames RHA DHA level</td>
<td>1989–1991</td>
<td>8252 (64%) households on PAF</td>
<td>Age 16+</td>
<td>Interview</td>
<td>6–9</td>
</tr>
<tr>
<td>HealthQuest (HQ)</td>
<td>SE Thames RHA DHA level</td>
<td>1992</td>
<td>23688 (57%) individuals on FHSA register</td>
<td>Age 16+</td>
<td>Postal</td>
<td>10</td>
</tr>
<tr>
<td>Bloomsbury &amp; Islington</td>
<td>Bloomsbury &amp; Islington</td>
<td>1990</td>
<td>1140 (70%) PAF</td>
<td>Adults</td>
<td>Interview</td>
<td>11, 12</td>
</tr>
<tr>
<td>Newham Health For All</td>
<td>LB Newham</td>
<td>1990</td>
<td>1120 individuals on electoral register</td>
<td>Age 18+</td>
<td>Interview</td>
<td>13</td>
</tr>
<tr>
<td>City &amp; Hackney</td>
<td>City &amp; LB Hackney</td>
<td>1992–1993</td>
<td>2592 (65%) individuals on FHSA register</td>
<td>Age 44+</td>
<td>Postal</td>
<td>14</td>
</tr>
<tr>
<td>Merton &amp; Sutton</td>
<td>Merton &amp; Sutton</td>
<td>1991</td>
<td>2218 (70%) individuals on electoral register</td>
<td>Age 18+</td>
<td>Postal</td>
<td>15</td>
</tr>
<tr>
<td>Barking</td>
<td>Barking &amp; Havering HA</td>
<td>1994</td>
<td>2050 (60%) Individuals on FHSA register</td>
<td>Age 16+</td>
<td>Postal</td>
<td>16</td>
</tr>
<tr>
<td>Richmond</td>
<td>Richmond, Twickenham &amp; Roehampton HA</td>
<td>1989</td>
<td>4085 (59%) sample electoral roll</td>
<td>Age 18+</td>
<td>Postal</td>
<td>17</td>
</tr>
<tr>
<td>Kingston &amp; Richmond</td>
<td>Kingston added to above RTR survey</td>
<td>1989–1993</td>
<td>6005 (45%) individuals on FHSA register</td>
<td>Age 18+</td>
<td>Postal</td>
<td>18</td>
</tr>
</tbody>
</table>
Table 2 Smoking (% adult population) as reported by NW Thames HALS and HealthQuest surveys; crude rates and ratio observed to expected values when standardized for age and sex differences

<table>
<thead>
<tr>
<th>Health Authority</th>
<th>Crude no.</th>
<th>%</th>
<th>Obs.</th>
<th>Ratio observed/expected*</th>
<th>LL</th>
<th>UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NW Thames HALS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barnet</td>
<td></td>
<td>30.0</td>
<td>96</td>
<td>0.98</td>
<td>0.88</td>
<td>1.09</td>
</tr>
<tr>
<td>Brent &amp; Harrow</td>
<td></td>
<td>29.0</td>
<td>423</td>
<td>0.94</td>
<td>0.90</td>
<td>0.99</td>
</tr>
<tr>
<td>Ealing, Hammersmith &amp; Hounslow</td>
<td></td>
<td>31.0</td>
<td>684</td>
<td>1.01</td>
<td>0.97</td>
<td>1.06</td>
</tr>
<tr>
<td>Hillingdon</td>
<td></td>
<td>31.4</td>
<td>133</td>
<td>1.04</td>
<td>0.95</td>
<td>1.15</td>
</tr>
<tr>
<td>Kensington, Chelsea &amp; Westminster</td>
<td></td>
<td>37.3</td>
<td>281</td>
<td>1.22</td>
<td>1.14</td>
<td>1.31</td>
</tr>
<tr>
<td>HealthQuest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bromley†</td>
<td></td>
<td>23.3</td>
<td>340</td>
<td>0.82</td>
<td>0.78</td>
<td>0.87</td>
</tr>
<tr>
<td>Bexley &amp; Greenwich†</td>
<td></td>
<td>26.3</td>
<td>587</td>
<td>0.94</td>
<td>0.90</td>
<td>0.98</td>
</tr>
<tr>
<td>Lambeth, Southwark &amp; Lewisham†</td>
<td></td>
<td>32.2</td>
<td>1030</td>
<td>1.12</td>
<td>1.08</td>
<td>1.16</td>
</tr>
<tr>
<td>Barking &amp; Havering†</td>
<td></td>
<td>26.1</td>
<td>534</td>
<td>0.94</td>
<td>0.90</td>
<td>0.98</td>
</tr>
</tbody>
</table>

* Standardized to HSE 1993. LL and UL, lower and upper 95 per cent confidence limits.
† Indicates cigarette smokers only.

the most common areas in such surveys. For most topic areas there were sufficient differences in either the survey methods employed or the structure of the questions to make valid comparisons impossible. Some of this heterogeneity may well be because the surveys were conducted over eight years ago. The science and art of general population surveys has changed since then, and there are now available a number of health based surveys that can provide models for local work. For example, the Health Survey for England, which began in 1991, has developed into an annual survey now covering 16000 adults and over 3000 children. From the list of our potential sources of differences between survey results, the first two are the most important and tend to make any conclusions about geographic differences difficult to make. For some areas such as smoking and alcohol consumption, use of health services and rates of limiting long-term illness, there was some degree of uniformity in the way questions were posed. National surveys such as the GHS are an important standard when setting questions in these areas. However, even for an area such as smoking, perhaps the most important of all health-related behaviours, there were discrepancies between surveys that looked at all smoking and those that assessed cigarettes only. In other areas, notably physical exercise, diet and obesity, mental health, and knowledge or attitudes to healthy behaviours, there was very little that was comparable between surveys.

Does this matter? We believe it is important to retain some element of comparability in these surveys. In particular, it is advisable to opt for standard ways of framing questions. This helps minimize the risk of asking a question that is invalid. Standard questions also help to provide a general check on the methods employed. Within our surveys there are examples of where comparing the results of fairly standard questions points to differences in survey methods. Finally, there is the important point that very often information from surveys needs to be put in a broader context. Being able to say smoking is higher or lower than we expected is important in thinking about priorities within a local health strategy.

Though national surveys can provide standard ways of framing questions, there are still many areas where there is no consensus on the best approach to take. Assessment of mental health is one area where the diversity is at its greatest, with almost every survey taking a different approach. It is to be hoped that the development of the national survey on psychiatric morbidity may help clarify this confusion.

Even where some form of comparison was possible, there were few examples of where it was possible to draw conclusions about differences in health-related behaviour. One exception was in smoking patterns, where two large regional surveys used a consistent (but different) approach. Comparisons of ages and sex-standardized rates of smoking show a gradient between the inner city areas and Outer London (Table 2). This result is what one might expect and a rare example of the type of differentiation that such surveys need to show. However, given the difference in social and economic characteristics between Inner and Outer London, such a result might also have been obtained by using information from national surveys, or, for example, the more dramatic differences in smoking between social classes highlighted by the GHS.

Implications for further work on health and lifestyle surveys

The work that has been undertaken in the various surveys we describe gives some important insights into the ways that we ought to proceed in future. In many cases, these local surveys preceded national work linked to *Health of the nation* and there is more expertise available now to help in the development of
such surveys, notably the work done by the Social Survey Division of the Office of National Statistics, as well as various academic groups who can advise on design and techniques.

If we exclude surveys where the main purpose is a research question, there are a number of reasons why a health authority may wish to undertake such a survey on its local population. Usually surveys conducted by an external agency on behalf of a health authority will cost in the order of £20 000 plus costs associated with staff in the preparation and analysis stages. Health authorities will obviously wish to justify this investment, and there have been doubts raised about the value of surveys to local health authorities. The utility of the surveys very much depends on how clearly the objectives of the survey are expressed. In practice, there are four main reasons for undertaking such a survey, as described below.

To assess the extent of local needs in relation to specific health behaviours

Health and lifestyle surveys can undoubtedly make us more confident about the scale of a particular health problem within the population, although there may be problems in interpreting a local survey (e.g. in comparisons between absolute rates of specific conditions reported by closed versus open questions or in identifying appropriate comparative data).

However, it is important to remember that in general population terms, the differences between geographic areas are unlikely to be large, and that very similar estimates could have been derived (at lower cost) by applying national figures to the local population. The differences between behaviours for general populations are not that great, and there is a problem if the sample sizes we can afford make surveys insufficiently sensitive. Thus, for example, the differences seen between health authorities with consistent survey methods such as HealthQuest or the North West Thames surveys are not huge, despite the fact that these surveys encompass both some of the most affluent and deprived areas within London.

A far quicker and cheaper alternative is to use national surveys to estimate the scale of local problems. Simple arithmetical calculations may be improved upon by more sophisticated multivariate techniques such as synthetic estimation. These techniques use the national relationships between lifestyle and Census variables applied to the local population. They offer potential for giving improved estimates of particular health problems or behaviours by recognizing some of the key social differences between areas (e.g. social class, ethnicity, employment patterns, etc). The limitation is that such techniques assume that the local relationships between health and social variables are the same as the national picture. The analysis would not be able to monitor relative change locally perhaps in response to specific policy initiatives, and a survey would be required.

Although surveys can and have in some cases identified sub-populations with particular needs, to do so requires a combination of relatively large sub-populations with distinctive behaviour patterns to show a significant result. There is also the danger of picking up spurious differences. For example, we typically use probabilities of less than 5 per cent as significant, yet such a result is likely to occur 1 in 20 times, so we must expect a few such results, given the amount of analysis given to a survey.

We would therefore conclude that health and lifestyle surveys of general adult populations are likely to have only limited success in showing significant differences between broad geographic areas and are unlikely to be able to say something new about the local situation. We would suggest that if researchers do wish to examine differential needs, more value would be found in looking at specific groups or issues as the basis for the sample, e.g. ethnic groups, age bands, deprived areas, etc. An example is the approach used in the P-DASH survey in Kensington, Chelsea & Westminster, where the methods were specifically aimed at a handful of wards with particular social and economic problems. The focus of this work was aimed at assessing the extent to which health behaviour and lifestyle were different amongst the more deprived communities. It is important for such an approach to have clear grounds for suspecting that aspects of behaviour or lifestyle are different amongst the target population.

Collecting information that is otherwise unavailable

In some cases the survey may aim to collect information that would not otherwise be available, for example in relation to health service use. In such circumstances it is important to be clear that there really are no alternative, cheaper and more accurate ways of obtaining sufficient information before adopting the relatively expensive approach of general population surveys. In many cases, a general population survey will be a relatively inefficient way of asking about something that is experienced by only a minority of respondents, e.g. cervical smears, barriers to giving up smoking. A survey eliciting more detailed information from target groups is more likely to be fruitful.

In practice, most surveys include some questions that are indicative of particular local interest, yet they rarely form an important part of the analysis. It is often seen as easy to add another question, but this should only be done if it is clear why that question was asked, whether it is valid and what costs in collection and analysis are incurred.

Monitoring change

One of the more common reasons for undertaking a survey is to establish baselines to monitor progress in relation to targets, e.g. Health of the nation targets. This means that at some stage the survey will be repeated, which has important implications for the costs of the survey and for the continuity within the organization. Although there are examples of where this has been done, planned repeat surveys are generally rare. In many
Table 3 A checklist of questions for agencies considering undertaking a general population survey

(1) Be clear about why you want a survey and about exactly what it can tell you that cheaper methods may not. Is the target population really so different from the subsets analysed in larger surveys?

(2) Make sure that you have fully exploited existing information and used previous surveys to estimate the extent of certain variables in your area. These may well show you enough.

(3) It is difficult to obtain significant differences from a general population survey. There is more likely to be value in a more precise sampling strategy which may:
   (a) aim at specific client group(s), e.g. older people, ethnic minorities, women, the unemployed;
   (b) link to specific service(s), e.g. for the disabled;
   (c) adjust to make sure the survey will answer the important questions;
   (d) think about two-stage procedures to identify particular groups;
   (e) use a general population survey and followed up a subset of those with cardiovascular problems with interviews.

(4) Retain some element of comparability, as this:
   (a) helps check against gross biases;
   (b) adds value and meaning to local data;
   (c) can identify areas of similarity or difference.

(5) Take as many items 'off the shelf' as possible. Check with experts and where possible use validated items or techniques.

(6) Check if there are common interests with other agencies. Could you share the costs of the survey with others?

cases, the individuals, or even authorities, who initiated the first survey have moved on and the power to argue for a follow-up is undermined (or the people with the skills or specific knowledge have left).

To justify a repeat survey one must be confident that the methods used are comparable and that the sample size is large enough for the expected scale of difference locally to be detectable. With repeat surveys there are, once again, the caveats about sample size and the ability to detect change which is significantly different from that seen at a national level, although the requirement to show change demands even more sensitive survey instruments.26

Given the aim of monitoring change, it is important to be clear about what change can reasonably be expected and what the interim markers are for long-term changes in health. In many cases, it may be that the effects of particular health promotion policies will be difficult to determine at a general population level and a more focused study would provide more sensitive markers of change. Similarly, it may be that aspects of the process of health care should be specifically included when health may change only very slowly.

Communication and motivation

In some cases, the reason for undertaking such a survey is more concerned with the process of surveying than the result. It may be that a local survey will carry more weight with the key actors involved in health improvement than if an estimate had been produced. The process of doing a survey may generate interest in the subject and help people to be aware of the importance of health and lifestyle issues. Anecdotally, this factor appears to be one of the benefits that such surveys can bring.

The reservations expressed here should not be seen as an argument for not attempting to monitor the health of the local population; such information should be important in assessing current policies and guiding development of health promotion and treatment services. However, simply undertaking a general population survey is unlikely to be justified in terms of the results, and there needs to be a much more focused approach. Our advice to those planning to undertake a health and lifestyle is summarized in Table 3.

Finally, there is the question of when joint approaches by a number of authorities can yield better value for money. If we can abandon the hold on our local geographic boundaries, then it becomes possible to explore real differences in patterns of health-related behaviour by looking at common issues across administrative boundaries. One can envisage a survey where costs were shared between health authorities yet the results were common and valuable to all. For example, a study might compare health-related behaviours along a deprivation–affluence axis. Another might look at comparisons of specific ethnic groups. We believe such approaches would give more valuable information for the costs.

References


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