VARIATIONS IN GENERAL PRACTITIONERS' RESPONSE TO POSTAL QUESTIONNAIRES

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Postal questionnaires offer an efficient method of collecting information. They are cheap and relatively quick and can be widely scattered geographically. In approaching professional groups there are no problems of illiteracy or inarticulateness to set against these advantages. The main difficulty then is often the response rate.

With general practitioners the problem of response is often thought to be particularly acute because of the vast amount of commercial literature coming through their letter boxes. Even so high proportions have responded to certain studies. Some variations are shown in Table I.

The studies quoted vary from a single Yes/No question on a plebiscite sponsored by the B.M.A. about opening negotiations on the health service to a 24-page questionnaire from two American research workers who were visitors to Britain. The response was 88 per cent. to the first and 60 per cent. to the second, but this last was increased to 73 per cent. when a shorter questionnaire, with 34 questions, was sent to those who had not replied.

The subject of the inquiry and the sponsoring organization are generally supposed to influence response rates. Another hypothesis is that there is an increasing resistance to surveys so that response rates are now lower than they were a few years ago. But if an organization wants information about a particular subject these things are fixed. Other possible ways of influencing the response are:

1. Length of questionnaire
2. Number or spacing of reminders
3. Colour and size of envelopes
4. Type-written/hand-written envelopes
5. Number and denomination of stamps
6. Tone of accompanying letter—authoritarian/persuasive
7. Layout of questionnaire and method of recording answers
8. Introduction of appealing “throw-away” questions
9. Space for recording qualifications and comments
10. Day of week and/or season of year in which questionnaires are sent out

In addition there is the content of the accompanying letter, which may emphasize the value of the study, the importance of a high response, the confidentiality, and the credentials of the sponsors. Offers can be made to send the results, to come and discuss the study personally, or to send more information about the study or sponsoring organization. Many investigators have their own recipe for success, but

<table>
<thead>
<tr>
<th>Year</th>
<th>Sponsor</th>
<th>Subject</th>
<th>Response (per cent.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 1946¹</td>
<td>B.M.A.</td>
<td>Whether negotiations on regulations under the National Health Service Bill with the Minister of Health should take place or not</td>
<td>88</td>
</tr>
<tr>
<td>2. 1951¹</td>
<td>General Practice Review Committee</td>
<td>Various aspects of general practice</td>
<td>72</td>
</tr>
<tr>
<td>3. 1959²</td>
<td>University of Edinburgh and the Scottish Council of B.M.A.</td>
<td>Attitudes to alternative systems of remuneration</td>
<td>79</td>
</tr>
<tr>
<td>4. 1964³</td>
<td>Institute of Community Studies</td>
<td>Conditions in general practice</td>
<td>76</td>
</tr>
<tr>
<td>5. 1966³</td>
<td>Researchers from an American University and American general practice</td>
<td>Problems in general practice and the ways in which general practitioners view their work</td>
<td>60–73</td>
</tr>
</tbody>
</table>

2. Ibid. (1953).
few controlled studies have been made to test the different hypotheses.

This paper reports a small inquiry which looked at the difference in response rates in relation to two variables.

The Study

In February, 1967, the Medical Care Research Unit at Sheffield University and the Medical Care Research Unit at the Institute of Community Studies (ICS) in London discovered they were both interested in the part played by general practitioners in family planning.

Sheffield University was planning a study of local general practitioners with a short, single-page, postal questionnaire (Ward, 1969). The ICS was just starting a larger, national study, but as part of the preliminary inquiries planned to send a 3-page, postal questionnaire to doctors in two pilot areas (Cartwright, 1968).

The two Units decided to collaborate and test the relative response rates to the long and short questionnaires, and to the local University-based and London organizations.

Methods

The 234 general practitioners in Sheffield were stratified by size of partnership and then allocated systematically to one of four groups in such a way that all the doctors in a partnership were kept in the same group. Half received short questionnaires, one-quarter that from Sheffield University, and one-quarter from the ICS, London. The other half received long questionnaires, one-quarter from Sheffield University, and one quarter from the ICS, London.

Copies of these questionnaires may be obtained from either of the sponsoring organizations. The differences between them are summarized below.

Both questionnaires asked about the different methods of birth control advised or prescribed, the agencies to which patients were referred for contraceptive advice and help, the number of patients on the pill, his sources of information about birth control methods, and the size of the practitioner's or the partnership's list. Other topics included in the long questionnaire which might be thought to influence response were abortion, sterilization, views on help to unmarried people, and the doctor's religion.

Copies of the covering letters, which differed for the two organizations, are given in the Appendix. The outward appearance—envelopes, typing, and stamps—was the same for both. The questionnaires were sent out in April, 1967, and two reminder letters, which were similar for the two organizations, were sent at intervals of 10 days. All those who had not replied after 5 weeks were contacted by telephone.

Response

The final response, 10 weeks after the questionnaires were sent out, is shown in Table II.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Questionnaire</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short</td>
<td>Long</td>
</tr>
<tr>
<td>Sheffield</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>96 (57)</td>
<td>78 (59)</td>
</tr>
<tr>
<td>ICS, London</td>
<td>83 (58)</td>
<td>67 (58)</td>
</tr>
<tr>
<td>Total</td>
<td>90 (115)</td>
<td>73 (117)</td>
</tr>
</tbody>
</table>

The figures in brackets are the numbers on which the percentages are based.

Two doctors were found to have retired and have been excluded.

The response to the shorter questionnaire (90 per cent. for the two organizations together) was significantly greater than that to the longer one (73 per cent.).† The difference in the response to the local University-based organization (87 per cent. for the two questionnaires together) and to the London-based ICS (76 per cent.) was less marked but still significant. There was no suggestion of any interaction between these two effects.

* In addition to the separately numbered questions quoted here each questionnaire contained additional dependent and subsidiary questions.
† In general attention has not been drawn to any difference which statistical tests suggest might have occurred by chance five or more times in 100.
Variations in Response to Postal Questionnaires

Variations in Response with some Characteristics of Doctors

Information about doctors' qualifications, the year in which they qualified, and their medical school was obtained from the Medical Directory, and the Executive Council gave us information about their partnership size and whether or not they were on the obstetric list. This makes it possible to see whether the doctors who did not reply differed from those who did in any of these characteristics.

We thought that women doctors might be more concerned about family planning than men and therefore more willing to collaborate, that those who were on the maternity list might respond more often than those who were not, that more of younger doctors who qualified more recently might reply, and that doctors who qualified at Sheffield might be more responsive to an inquiry from their alma mater than those who qualified elsewhere. None of these hypotheses were substantiated. The only one of these four characteristics that seemed at all related to the response rate was year of qualification, and with this there was no clear trend, but those qualifying before 1940 were rather more resistant to the longer questionnaire and to the study made by the ICS than were doctors who qualified more recently. The response rates to the long questionnaire were 59 per cent. among those who qualified before 1940, 79 per cent. among the others, and to questionnaires sent out by the ICS 63 per cent. and 82 per cent. in the two groups. The figures showing the response of the locally-trained doctors are given in Table III and those relating to other characteristics in Table IV.

Doctors who were working single-handed or in partnerships of two were less likely to reply than those in larger partnerships, and those with further qualifications were rather more likely to reply than those who had only a degree or licentiate qualifications. (All twelve of the doctors with additional qualifications in obstetrics replied). Similar differences in response had been found in other studies (Cartwright, 1967; Mechanic and Faich, 1968).

Another factor which we thought might influence the response was whether or not the doctors had been asked to participate in an earlier inquiry on Conditions in General Practice Today. This was a postal inquiry carried out by the ICS in 1964, followed by an additional request for information in 1966. Hillsborough, one of six parliamentary constituencies in Sheffield CB, was covered in this earlier study and 33 of the doctors on the present study had been asked to participate, 24 had taken part in the first part of the study (on which two reminders were sent) and twelve had responded again in 1966 (when there was no follow-up). In fact the response was, if anything, rather better among those who were asked to participate on the earlier study—91 per cent. compared with 79 per cent. Such a difference could well have occurred by chance and was in the same direction for both sponsoring organizations. Among those who participated in the earlier study 23 out of 24 (96 per cent.) had written to us in reply to the 1964 letter.

### Table IV

RESPONSE AND CHARACTERISTICS OF DOCTORS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Percentage Completing Questionnaire</th>
<th>Number of Doctors (= 100 per cent.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>81 (78)</td>
<td>213</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>On Maternity List</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>81</td>
<td>186</td>
</tr>
<tr>
<td>No</td>
<td>82</td>
<td>44</td>
</tr>
<tr>
<td>Year of Qualification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before 1930</td>
<td>79</td>
<td>29</td>
</tr>
<tr>
<td>1930–39</td>
<td>70</td>
<td>53</td>
</tr>
<tr>
<td>1940–49</td>
<td>88</td>
<td>65</td>
</tr>
<tr>
<td>1950–59</td>
<td>79</td>
<td>66</td>
</tr>
<tr>
<td>1960 or Later</td>
<td>(100)</td>
<td>16</td>
</tr>
<tr>
<td>Partnership Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-handed</td>
<td>71</td>
<td>65</td>
</tr>
<tr>
<td>Two doctors</td>
<td>79</td>
<td>80</td>
</tr>
<tr>
<td>Three doctors</td>
<td>92</td>
<td>48</td>
</tr>
<tr>
<td>Four or more doctors</td>
<td>90</td>
<td>30</td>
</tr>
<tr>
<td>Further Qualifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>92</td>
<td>24</td>
</tr>
<tr>
<td>No</td>
<td>80</td>
<td>205</td>
</tr>
</tbody>
</table>

Percentages in brackets based on less than twenty cases.
cent.) responded to this one. As only nine did not respond on the earlier study the number is too small to show whether there is a hard core of “survey-resistant” general practitioners—but we came across only two.

So doctors who do not reply are rather older, less well qualified, and more often single-handed than those who do. What we should like to know is whether they differ from the others in their views and actions on family-planning advice. We had hoped to find out whether doctors who belonged to the Roman Catholic Guild of St. Luke, St. Cosmas, and St. Damien were more or less likely to respond, but this has not been possible.

How Much Difference does a High or Low Response Make?
If we had done our studies separately, Sheffield University would have obtained a very high response rate but relatively little data about each doctor, and the ICS in London a poor response rate but more information from the doctors who did respond.

How much difference does a high or low response rate have on the actual answers? Only one question was common to both questionnaires and this was asked in somewhat different ways. This was about the number of patients “on the pill”.

The long questionnaire asked: “Could you estimate how many patients you have on the pill that you personally prescribe for?” The answer was left open, as for the ICS this was a pilot study.

On the short questionnaire the question was set out like this:

VI. Can you give any estimate of the number of patients, either on your own list or in the practice as a whole, for whom you or the partnership has directly prescribed?

□ 10-49 □ 10-49
□ 50-99 □ 50-99
□ 100-199 □ 100-199
□ 200 & over □ 200 & over

These estimates relate to □ Your own personal list
□ The partnership as a whole

On this short (Sheffield University-designed) questionnaire, 51 per cent. said their estimate related to their personal list, 37 per cent. that they related to the partnership as a whole, and 12 per cent. did not indicate which they related to. In addition one of the 91 who answered that part of the question adequately failed to indicate how many patients he prescribed the pill for. On the longer (ICS-designed) questionnaire, 13 per cent. said they could not make an estimate of how many patients they had on the pill. So for different reasons each approach produced similar proportions of doctors for whom there was inadequate information on this subject.

Table V shows the estimates from the different sources. For comparison it is only possible to use doctors who gave figures relating to their own personal list on the short questionnaire. It might have been expected that the short questionnaire with its high response might have brought in more of the doctors who were not giving family planning advice and were not prescribing the pill, but this does not seem to be so. The difference in the proportion with no patients on the pill is insignificant and in the other direction; the proportion with less than ten patients on the pill is highest in the group with the greatest response, but again the difference is not significant.

**Table V**

<table>
<thead>
<tr>
<th>Number of Patients on Pill</th>
<th>Short</th>
<th>Long</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sheffield</td>
<td>ICS</td>
</tr>
<tr>
<td>None</td>
<td>11 (%)</td>
<td>33 (%)</td>
</tr>
<tr>
<td>1-9</td>
<td>22 (%)</td>
<td>80 (%)</td>
</tr>
<tr>
<td>10-49</td>
<td>43 (%)</td>
<td>40 (%)</td>
</tr>
<tr>
<td>50-99</td>
<td>15 (%)</td>
<td>24 (%)</td>
</tr>
<tr>
<td>100-199</td>
<td>4 (%)</td>
<td>4 (%)</td>
</tr>
<tr>
<td>200+</td>
<td>4 (%)</td>
<td>4 (%)</td>
</tr>
</tbody>
</table>

Number of Doctors

(=100 per cent.) 27 25 46 39

With samples of this size the high response to the short questionnaire when sent out by Sheffield University did not give figures which differed significantly from those obtained from the long questionnaire sent out by the ICS.

It is also possible to compare the replies to the two samples receiving each of the questionnaires—but of course the difference in the response rates is smaller. For the long one it was 78 per cent. when it was sent out by Sheffield University, 67 per cent. when it came from ICS, for the short the percentages were 97 and 83.

The most obvious difference in the two samples receiving the longer questionnaire was that the higher response group contained more inadequate answers than the lower response group. The average number of inadequate answers over 57 items was 3·3 and 2·3 respectively. For the shorter questionnaire, however, inadequate answers were, if anything, less frequent in the higher response group than in the lower—the average being 0·51 and 0·73.
VARIATIONS IN RESPONSE TO POSTAL QUESTIONNAIRES

When the 57 items on the long questionnaire were analysed separately only four showed differences which were significant at the 5 per cent. level. If they were independent we should expect three to do so by chance. The differences are shown in Table VI. It might have been expected that the higher response rate achieved by Sheffield University would have brought in doctors who were less concerned about family planning. But if anything the reverse seems to have happened. A higher proportion in the high response group said they spent more time now discussing family planning with their patients and more of them said they had been asked about the possibility of an abortion; a higher proportion prescribed the pill themselves when they discussed family planning with their patients and fewer gave patients more than a month’s supply initially. But little or no weight can be attached to these individual differences.

Table VI
VARIATIONS IN RESPONSE TO LONG QUESTIONNAIRE (PER CENT.)

<table>
<thead>
<tr>
<th>Long Questionnaire sent by</th>
<th>Sheffield</th>
<th>ICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thinks he spends more time now discussing family planning with patients than he used to</td>
<td>80</td>
<td>61</td>
</tr>
<tr>
<td>Prescribes pill himself in more than 70 per cent. of his family planning consultations</td>
<td>52</td>
<td>29</td>
</tr>
<tr>
<td>Gives patients more than a month’s supply of pills initially</td>
<td>55</td>
<td>83</td>
</tr>
<tr>
<td>Has been asked about the possibility of an abortion by a patient in the last 12 months</td>
<td>84</td>
<td>62</td>
</tr>
</tbody>
</table>

When the two short questionnaire groups were compared it was found that in only two items (out of 23) was there any significant difference in the response; 13 per cent. of the high response (Sheffield-originated) group sometimes referred patients to another doctor for advice, and 13 per cent. of them prescribed chemical spermicide on its own. None of the lower response (ICS-originated) group did either of these.

The general conclusion is that the different response rates have no effect on the distribution of answers, but that they may affect the proportion of inadequate answers.

Differences in Responses over Time

How far do replies received at different times differ? Do the doctors who reply before they are sent any reminder differ in their characteristics, habits, or views from those who respond only after reminders?

The times at which replies were received are shown in Table VII. A third of the replies were received in the first 3 days after the questionnaires had been sent out. This proportion was twice as great for the short questionnaire than for the long one.

Table VII
TIME WHEN REPLIES WERE RECEIVED (PER CENT.)

<table>
<thead>
<tr>
<th>Time of Receipt</th>
<th>Short</th>
<th>Long</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 3 days of despatch</td>
<td>40</td>
<td>23</td>
<td>32</td>
</tr>
<tr>
<td>After 3 days but before first reminder</td>
<td>21</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>Between first and second reminder*</td>
<td>20</td>
<td>27</td>
<td>23</td>
</tr>
<tr>
<td>Between second reminder and telephone contact</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>After telephone contact</td>
<td>4</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Number of Replies (=100 per cent.)</td>
<td>103</td>
<td>85</td>
<td>188</td>
</tr>
</tbody>
</table>

* By an oversight the second reminders were sent out a day early from the ICS in London so these results are only approximate.

With the short questionnaire a comparison of the replies received before any reminders were sent with those sent in later showed two items with a significant difference: 98 per cent. of the early responders advised patients directly as against 85 per cent. of those who replied later; 48 per cent. of the early responders and only 18 per cent. of the later responders prescribed the condom. On the long questionnaire the difference lay in the other direction—25 per cent. of the early responders but 57 per cent. of the later responders said that the condom was one of the two methods they most often advised. On the long questionnaire the later responders more often thought that the condom was the contraceptive most often used by their patients—49 per cent. compared with 25 per cent. of those who replied early. Other differences between the early and later responders to the long questionnaire were that early responders more often felt that present arrangements for people to get advice about family planning did not reach those who needed advice most (68 against 45 per cent.), and more mentioned the Family Planning Association literature or lectures when asked about their main source of information about contraceptive techniques (24 against 7 per cent.). 23 per cent. of those who replied before they were sent a reminder and 7 per cent. of those who replied later were Roman Catholics.

So again there are few significant differences, but it seems that those who are particularly concerned about the subject may well respond more quickly than the others.

Discussion

This was not a strictly-controlled experiment in that there were a number of other variables besides the two main ones studied. The initial covering letters from the two organizations emphasized rather different points, the layout of the two questionnaires
varied, and the questions, although covering similar subjects, were not phrased identically. These variations may have contributed to or masked the differences between the short and long questionnaires and between the two sponsoring organizations. Nevertheless, it seems that a short questionnaire rather than a long one increased the response rate, and that a local, University-based organization gained a higher response than a little-known London one.

How important is this? Obviously it depends on the purpose of the study. With a subject that might raise emotional hostility among some people it might seem particularly important to obtain a complete response, otherwise there would be a danger that those who did not reply might hold extreme views. But there is little evidence from this or other studies to support this. An alternative hypothesis—that people who feel strongly either way will reply whereas those who are relatively indifferent tend not to—might be worth testing.

Meanwhile many researchers will have to face the dilemma and choose between a low response rate with more information and a high one with less data about the individuals who respond.

The I.C.S. investigation is supported by U.S. Public Health Service Research Grant CH 00266 from the Division of Community Health Services. The Medical Care Research Unit, Sheffield, is supported by funds provided by the Ministry of Health and the Sheffield Regional Hospital Board. We are grateful for the help and encouragement of Prof. J. Knowelden and of our other colleagues.

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Brit. med. J. (1947). 1, 64 (Final results of the plebiscite).
—— (1968). Med. Offr, 120, 43 (General practitioners and family planning).
APPENDIX I

LETTER FROM THE INSTITUTE OF COMMUNITY STUDIES, LONDON

Dear Dr (Name)

I am writing to ask for your help in a study we are doing of family planning services. We should like to know the views of general practitioners about these services and we are enclosing a short questionnaire and a stamped-addressed envelope.

Most of the questions just need a tick beside the appropriate answer but we should also welcome your views in more detail if you would like to give them, so we have included an extra page for these. The questionnaire itself should not take more than about ten minutes to complete. We should be very grateful if you would answer all the questions and return the form to us as soon as possible.

We feel it is important to find out the views of a true cross-section of general practitioners, and we can only do that if the doctors we approach tell us what they think.

The information you give us will be treated as confidential. It will not be possible to identify any individuals in any report as the information will be presented statistically.

For this study the Institution is being helped by an Advisory Committee consisting mainly of general practitioners and other doctors. This Committee has helped to draw up the questionnaires and will advise on the final report.

If you would like further information about the study or the Institute or would like to discuss the subject personally, please let us know and we will get in touch with you.

Thank you for your help.

Yours sincerely,
Ann Cartwright, B.Sc., Ph.D.

APPENDIX II

LETTER FROM SHEFFIELD UNIVERSITY

Dear Dr (Name)

You will be aware that the acceptance of Family Planning practices has been increasing in many sections of society; and the passing of the second reading of the National Health (Family Planning) Bill without a division has given some indication of the changed climate in which these services now operate.

Here in Sheffield this Unit is engaged on a study of the Family Planning clinics whose numbers and clientele are increasing continually. It is believed however that more patients seek advice in this matter from their family doctor than from clinics. The Population Investigation Committee report* suggested that this was so; but this was a national survey made in 1960 and may not reflect the position in this city now.

To complete our picture of the services available we need to know to what extent family doctors are providing Family Planning advice. We hope that you will help us to do this by completing the enclosed form and returning it in the envelope provided. Even if you do not provide contraceptive advice, and do not intend to, please complete sections I to IV.

We realize that some of the questions may seem difficult to answer, but any help you are able to give will be of value to us. For instance, it may be hard to assess the numbers asked for in section VI; but please make some estimate if you possibly can.

All information will be treated as confidential, and it will not be possible to identify individuals in our report.

Yours sincerely,
(Mrs. A. W. M. Ward, LL.B.)

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