

Beware the pitfalls of ill-placed questions – revisiting questionnaire ordering

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One of the early lessons of good questionnaire design is the ordering of the questions – making sure that bias is not introduced by the inappropriate placement of a question or series of questions. Sometimes the bias can be intentional when questions are strategically placed in order to influence the respondent's response and encourage recall (Sudman et al. 1996). This is usually the exception – not the rule.

A lesson learnt and willingly shared involves the placement of a single question asking respondents to rate their overall health. The use of a single question is increasingly being used as other measures of overall health status and functioning can be lengthy and difficult to interpret and score. A general health question often used is the first question of the MOS Short Form 36 (SF36) (Ware & Sherbourne 1992), and is commonly referred to as the SF1. The SF1 refers to physical and mental health, as assessed by individuals, according to their own values, and has been found to be a strong indicator of future health care use and mortality (McCallum et al. 1994).

Based on fundamentals of good survey design that the questionnaire should start with “something easy” so as to build respondent confidence and rapport (Dillman 1978; O'Rourke 2001), the SF1 has been included in many South Australian (SA) telephone surveys – usually as the first health question. This question is deemed to be of interest, non-threatening and easy to answer (Trochim 2000).

Methods

Telephone health surveys have regularly been conducted in SA since 1996 (PROS 2002a; PROS 2002b). All have similar methodology, with all households in South Australia, having a number listed in the Electronic White Pages (EWP), being eligible for sample selection. A letter introducing the survey is sent to the household of each selected telephone number. Within each household, the person who had their birthday last

is selected for interview. There is no replacement for non-contactable persons. The CATI III (Computer Assisted Telephone Interview) system is used to conduct the interviews. Of each interviewers work, 10% is selected at random for validation by the supervisor. In the nine telephone surveys undertaken since 1998 in which the SF1 was included, over 3000 interviews were undertaken on each occasion.

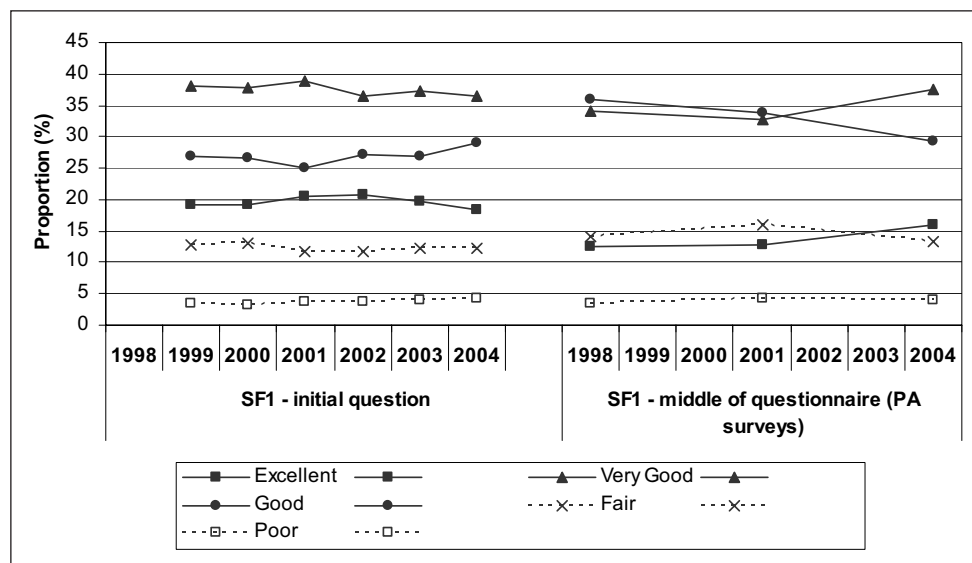
The SF1 question was asked immediately after the initial introductory questions for six of the surveys (annual surveys from 1999 to 2004). In three additional surveys (in 1998, 2001 and 2004) the SF1 was asked after a series of questions pertaining to physical activity which assessed moderate and vigorous activities, the amount of walking for exercise the participants had undertaken and what would make the individual more active.

The SF1 question was asked as follows: In general, would you say your health is – Excellent, Very Good, Good, Fair or Poor? The response rate for the surveys was approximately 70%. Each data set was weighted by age, gender, geographic region and the possibility of selection in the household, to the most recent Australian Bureau of Statistics Census or estimated resident population data and limited to respondents aged 18+ years. Data were analysed using the SPSS version 12.0 and Epi Info version 6.0.

Results

Figure 1 highlights the SF1 distributions with the results from the annual surveys (in which SF1 was the first question) on the left hand side and the three additional (physical activity related) surveys, in which the SF1 was placed within the body of the questionnaire, on the right. It was apparent that there were major differences in SF1 scores for the three physical activity related surveys. The proportion of respondents who reported 'poor' status changed little between surveys. The

Figure 1 Prevalence of individual SF1 responses over time in telephone surveys



additional physical activity questions asked prior to the SF1 question resulted in a lower proportion who reported 'excellent' or 'very good' health status and a higher proportion reporting 'fair' or 'good'.

Conclusion

This analysis has again highlighted to the questionnaire design team that the order in which questions are asked is very important in surveys. It is obvious that if a survey aims to establish the respondent's perceptions about their general health, participants cannot be exposed to certain questions

prior to the SF1. With the value of hindsight, it was obvious that the questions asked in the physical activity surveys, such as physical activity levels and sedentary activities performed, have influenced the SF1 response considerably.

In conclusion, a well designed questionnaire is essential for improved response rates, improved validity of the data and improved overall data quality. As argued by McLaughlin (1999) 'seemingly trivial features of self-report instruments can have an impact on results' and survey questionnaire designers should be aware that every and any irrelevant feature of the survey may be relevant to the participant and influence their response.

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