

## Does the Method Matter on Sensitive Survey Topics?

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### ABSTRACT

The effects of utilizing a self-administered questionnaire or a personal interview procedure on the responses of an adolescent sample on their alcohol consumption and related behaviors are examined. The results are generally supportive of previous studies on the relationship between the method of data collection and the distribution of responses with sensitive or non-normative content. Although of significance in a statistical sense, many of the differences are not of sufficient magnitude to be considered significant in a substantive sense.

**KEY WORDS:** Data collection; Personal interview; Self-administered questionnaire; Response errors; Alcohol consumption.

### 1. INTRODUCTION

To "questionnaire" or to interview that is the question to be answered by researchers in the design and conduct of sample surveys on delicate or sensitive topics. The decision on whether to utilize personal or telephone interviews or a variant of the self-administered questionnaires, or a combination thereof, is a critical decision that survey researchers have to make in attempting to optimize the quality of the resultant data.

Encompassed by the more general problems of reliability and validity associated with self-reports of attitudes, behaviour and other phenomena of interest to survey practitioners, is the question regarding the relative merits of the interview and self-administered formats in minimizing or reducing non-sampling biases or errors. In other words, then would different results be obtained from the utilization of different modes of data collection (Smith 1975)?

As far back as 1959, Selltiz *et al.* (1959) stated that most questionnaires and interviews were utilized without evidence of their relative merits. More recently, this position has been re-emphasized by Knudsen *et al.* (1967), Alwin (1977) and Newton *et al.* (1982) who maintain that the selection of the survey mode to be utilized is based on convenience, relative costs and other practical considerations rather than on their methodological adequacy and potential response effects. The planning of survey research, Newton *et al.* emphasize should be determined by what is reliably known about the relationship between methods of administration and response patterns, rather than just on the issues of relative costs, respondent motivation and other similar considerations.

Some studies which have compared personal interviews with more anonymous formats such as self-administered questionnaires or telephone interviews have found minimal and/or statistically non-significant differences in the responses to a variety of topics including those of a private or sensitive nature (DeLameter and MacCorquodale 1975; Gibson and Hawkins 1968; Krohn *et al.* 1974; McDonagh and Rosenblum 1965; Metzner and Mann 1952, Newton *et al.* 1982 and Sykes and Collins 1987.) Other researchers have observed that more candid, self-revelatory and informative responses are more likely to be made by questionnaire and telephone respondents than personal interviewees on topics concerning deviant, sensitive

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or embarrassing behaviours and attitudes. (Cannell and Fowler 1963; Ellis 1947; Hubbard *et al.* 1976; Knudsen *et al.* 1967; Siemiatycki 1979; Whitehead and Smart 1972 and Wiseman 1972).

The conclusions of the latter studies were generally based on the untested assumption that the increased reporting of deviant, threatening or embarrassing information was more accurate (Blair *et al.* 1977). This point was also emphasized by Schuman (1980) who stated that frequently no external validation data were obtained, but the researchers "assumed that the more such behaviour was reported, the more accurate the reports – a plausible but not air-tight assumption for most of the topics they dealt with."

The present note is concerned with a further comparison of the relationship between personal interviews and self-administered questionnaires and responses obtained from an adolescent population on a "threatening" or deviant topic, namely alcohol consumption. The results being reported are based on a secondary analysis of data from a study of alcohol-related attitudes and behaviors from a sample of teenagers in a Western Canadian province completed in 1977-78 (Hetherington *et al.* 1978 and 1979).

The study which utilized both personal interviews and self-administered questionnaires provides a unique opportunity to compare the potential effects of the mode of data collection on the resultant data. This type of comparison of interest to survey practitioners is generally not possible in the majority of surveys which tend to rely on one method of data collection.

A stratified random sample of 1502 students in grades 6 to 12 was selected from three school regions in the Province of concern. The total sample of students was randomly assigned by grade to either the self-administered questionnaire or to the personal interview procedure. Approximately one half of the students from each grade 6 to 12 were thus allocated to one of the procedures. The number of students assigned to be interviewed was 752 with 750 students being assigned to the questionnaire data collection.

The questionnaire was group administered by a trained researcher in a room made available at each school for that purpose. The interviews were conducted by fifteen interviewers specifically trained for the study.

The survey instrument which consisted of 75 questions was identical in content for both the interview and questionnaire data collection procedures. The majority of the questions were closed ended and required an average of 20 minutes for completion in both types of administration.

## 2. RESULTS AND DISCUSSION

A comparison of the personal interview and self-administered questionnaire respondents on a number of personal and familial characteristics was conducted to determine if the two groups differed in respects other than the method of data collection. The results indicated that the two groups did not differ by more than could be attributed to chance on variables such as sex, age, grade of enrollment, parent's educational and occupational backgrounds and religious affiliation. A statistically significant difference was observed on the variable of ethnicity with a higher percentage of Canadian identities reported by the interview respondents.

With the exception of ethnic background, the subsequent analysis was, therefore, based on the assumption that the interview and questionnaire respondents were equivalent on a number of variables that could potentially confound the comparison of obtained responses to the two procedures.

**Table 1**  
Frequency Distribution and Z Probabilities on Selected Questions  
for Interview and Questionnaire Results

Variable	Interview ( <i>n</i> = 752)	Questionnaire ( <i>n</i> = 750)	Two-tailed Z Probability
Ever drink	62.63	73.73	.000
Ever used cigarettes	29.78	37.60	.001

## 2.1 Variable Distribution

A comparison of the mean responses or frequency distributions for the interview and questionnaire respondents on a number of questions with non-normative or illegal content lent general support to previous research on similar issues. The questions of primary concern are those related to the consumption of alcohol which are viewed as possessing a considerable degree of threat or deviant content for the population under consideration, the majority (99.8%) of whom were under the legal drinking age at the time of the study.

The frequency distributions in Table 1 indicated that a significantly higher percentage of the questionnaire respondents reported ever having more than a sip or taste of an alcoholic beverage. Similar statistically significant differentials were observed between the interview and questionnaire respondents on reported smoking.

For those respondents reporting that they had consumed a drink of alcohol, the mean drinking levels and average age at first drink shown in Table 2 were also suggestive that the questionnaire respondents are more likely to report on deviant behaviour than were their interview contemporaries. The significantly higher average drinking levels for the questionnaire respondents reflects their reporting higher amounts and frequencies of alcohol consumption. The significantly higher average age at first drink for the interviewees indicates their reporting taking their first substantial drink at an older age than did the questionnaire respondents.

Significant differentials between the interview and questionnaire respondents were also observed on the reporting of parental drinking and on the importance of religion in the home questions. The mean values for these three questions indicated that the questionnaire respondents reported higher drinking levels for their parents than did the interviewees and that religion was perceived as being less important in the homes of the questionnaire respondents. While not possessing the same degree of self revelation or threat to the respondent per se, the differentials were viewed as suggestive of an attempt on the part of the interviewees to portray a more favourable or socially acceptable image about their family life.

However, the greater importance of religion in the home reported by the interviewees was not carried through in their self-descriptions of the importance of religion. The statistical equivalence of the means values on the importance of religion to self indicated that the interview respondents were no more likely to report that religion was important to self than were the questionnaire respondents. The two groups of respondents were also equally likely to report on the drinking habits of friends or peers.

The response patterns on other questions possessing somewhat different aspects of ego-involvement or image favourability did not generally support the potential operation of a social desirability effect as was evident for the alcohol related behaviours. As indicated in Table 2, the questionnaire respondents reported receiving significantly higher school grades, had higher educational aspirations in terms of their future educational plans and reported more positive self images on 4 of the 7 self-esteem items and on the composite self-esteem index. Contrary

**Table 2**  
Means, Standard Deviations and “*t*” probabilities on Selected Questions  
for Interview and Questionnaire Respondents

Variable <sup>1</sup>	Interview ( <i>n</i> = 752)		Questionnaire ( <i>n</i> = 750)		Two-tailed “ <i>t</i> ” Probabilities
	$\bar{X}$	<i>SD</i>	$\bar{X}$	<i>SD</i>	
Alcohol and Related Behaviour					
Drinking level	2.31	2.92	2.76	3.05	.003
Age at first drink <sup>a</sup>	3.93	1.32	3.64	1.39	.001
Father drinks	1.82	0.62	1.90	0.58	.011
Mother drinks	1.70	0.50	1.75	0.51	.025
Friends drink	1.92	0.57	1.94	0.56	.481
Educational Variables					
Grades received	4.37	1.49	4.58	1.46	.008
Educational plans	3.02	1.24	3.25	1.24	.001
Religious Variables					
Importance of religion in the home	3.37	1.16	3.15	1.22	.000
Importance of religion to student	3.22	1.12	3.13	1.18	.130
Self-Esteem Indices					
Item 1	2.98	0.60	3.12	0.60	.000
Item 2	2.96	0.49	3.08	0.54	.000
Item 3	3.14	0.55	3.27	0.61	.000
Item 4	2.98	0.51	2.05	0.57	.033
Item 5	3.10	0.63	3.01	0.75	.017
Item 6	2.93	0.56	2.97	0.59	.207
Item 7	3.07	0.54	3.12	0.60	.132
Composite	21.17	2.39	21.65	2.85	.001

<sup>a</sup> – Mean value calculated on grouped data.

<sup>1</sup> Variable Codes: Drinking level; composite index of frequency and volume of alcohol consumed 0 = abstainer to 9 = frequent consumer of large amount of alcohol.

**Age at first drink:** 1 = 6 years or less; 2 = 7-8 years; 3 = 9-10 years; 4 = 11-12 years; 5 = 13-14 years; 6 = 15-16 years; and 7 = ≥ 17 years.

**Father, mother and friends drink:** 1 = never drinks; 2 = drinks sometimes; 3 = drinks a lot.

**Grades received:** 1 = mostly D's and F's; 2 = Mostly C's and D's; 3 = mostly C's; 4 = mostly B's and C's; 5 = mostly B's; 6 = mostly A's and B's and 7 = mostly A's.

**Educational plans:** 1 = will not finish grade 12; 2 = will finish grade 12 only; 3 = will take technical training; 4 = will attend university and 5 = will go to graduate or professional school.

**Self-esteem items and index:** 1 = strongly disagree; 2 = disagree; 3 = agree and 4 = strongly agree. The additive index for the 7 items ranged from 7 to 28.

to the expectation that the interviewees would attempt to portray a more favourable image, these results tended to indicate that they were more modest in the reporting of school grades received, in their educational aspirations and in their self perceptions. However, the greater anonymity and potential freedom afforded the questionnaire respondents to more willingly report on their alcohol related behaviors may also have resulted in a similar perceived freedom to aggrandize their own merits in relation to these questions on school grades, educational plans and their self conceptions.

However, the presence of a significant distributional response bias between the interview-questionnaire data collections is evident only in the statistical sense of the term. The statistically significant mean value differences on the questions of concern ranged from 0.05 to a maximum of 0.48 on the composite self-esteem index. Given the potential presence of other errors of measurement, the interview-questionnaire response differentials obtained in the present study are not of sufficient magnitude to be considered as indicative of a response bias effect of substantive or practical importance.

Due to the unavailability of reliable information on the actual drinking habits of the students and their parents, the school grades and other responses under consideration, it was not possible to conduct an evaluation of the relative accuracy of the interview and questionnaire responses. As a result it is not possible to indicate the relative superiority of either the self-administered mode or the personal interview for the question responses under consideration. Both types of responses may be subject to an under- or over-reporting bias of an indeterminate direction and/or magnitude.

The results of this note are in general agreement with Bradburn and Sudman (1979) who indicate that no consistent relationship appears to exist between the method of survey administration and the over-reporting of socially desirable behaviour or the under-reporting of socially undesirable behaviors and attitudes. As a result Bradburn and Sudman (1979) and Locander *et al.* (1976) suggest that no data collection procedure is clearly superior for all types of threatening or other questions of concern to survey practitioners.

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