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# The Social Desirability of Preventive Health Behavior

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Synopsis .....................................

The relationship between measures of social desirability and various preventive health behaviors was examined directly for 235 females and 171 males from the British public and 182 females and 49 males from the University of Toronto, Canada. Both simple and partial correlations controlling for age showed that social desirability scores were related to total preventive behavior scores formed on the basis of the responses to 42 items, as well as many of the individual preventive behavior items. To ensure that this relationship was not unique to the present study, the response frequencies for 15 behavior items in this study were compared with those reported by another investigator who also used these 15 behavior items, and were found to be quite similar. Simple and partial correlations controlling for age showed that social desirability scores were significantly correlated with more of these 15 behaviors than one would expect by chance. The implications of the association of social desirability and preventive health behavior for the measurement of preventive health behavior, future research, and health education are discussed.

RATHER THAN ATTEMPTING TO DOCUMENT the factors that influence preventive health behavior (PHB), recent research has focused on its conceptualization and measurement. This shift of attention has been a result of various ambiguities regarding such things as the definition of "health" (1), the psychometric characteristics of scales that purport to measure PHB (2), and the complex nature of PHB (3–5).

One potentially problematic aspect of the measurement of PHB, mentioned by Green (6) and Langlie (7), is

the extent to which respondents tend to give "socially desirable" answers to questions that assess their health behaviors. Social desirability (SD) refers to the "need of subjects to obtain approval by responding in a culturally appropriate and acceptable manner" (8a). Therefore, if social desirability is operating, subjects may claim to display better PHB than is actually true.

Thus far, no study has directly assessed the extent to which social desirability has influenced measures of adults' PHB. Langlie (7) attempted to infer the extent to which social desirability was operating in her data by comparing the frequencies of six reported behaviors (dental checkup, physical examination, Papanicolaou test, chest X-ray, seatbelt use, and smoking) from her study with the frequencies reported in other investigations. The respondents in Langlie's study did not consistently report higher frequencies of good preventive behavior, leading her to conclude that "a bias toward socially desirable responses is unlikely to prejudice the results to a greater extent than in previous studies" (7a). While this may be true, her data do not show whether social desirability does influence responses to preventive health behavior questionnaires. Hence, this study endeavors to assess the influence of social desirability directly, by measuring people's PHB and their need for approval.

## Method

A random sample of 1,069 people registered in the Mid Devon, England, electoral register were sent an anonymous questionnaire and a prepaid return envelope. The questionnaire consisted of 91 items that assessed the frequency of various preventive behaviors. These data were used to construct a summative 42-item PHB scale (2). In addition, respondents completed a shortened version of the Crowne-Marlowe (8) Social Desirability Scale. This consisted of 10 of the 33 original scale items, selected so as to be most relevant to health (for example, "I never make a long trip without checking the safety of my car") and to avoid acquiescence (6 items were worded in the socially desirable direction and 4 items were worded in the opposite direction). Note that a previous investigation showed 10-item versions of the scale to be internally consistent and correlated with the total 33-item scale (9).

Completed questionnaires were returned by 235 females (mean age, 41.7 years) and 171 males (mean age, 43.0 years). The response rate was 40.0 percent after the figures were adjusted for nondeliverable questionnaires. Comparisons with census data showed the sample to be overrepresented by females and by economically active males and females. It was underrepresented by females over age 60 and by smokers of both

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sexes; 24.7 percent of females and 36.8 percent of males in the sample were smokers versus 37.0 percent of females and 42.0 percent of males in the population (10).

In addition to the sample of the British public, a further sample of 182 females (mean age, 21.4 years) and 49 males (mean age, 21.5 years) attending the University of Toronto, Canada, completed an 88-item PHB questionnaire and the 10-item version of the Crowne-Marlowe SD scale.

Analyses assessed the correlation between SD scores and each of the 42 PHB items and total PHB scores. For the items common to this study and that of Langlie (7), comparisons were made between the frequencies of responses reported by Langlie and those of this study.

## Results

**Correlations with social desirability.** An analysis of covariance using the "classic regression approach" (11) was calculated on the SD scores across country (British public versus Toronto students) and sex, controlling for age. Although the age covariate was significant ($\beta = .040$, $F_{1,616} = 66.43$, $P < .001$), there were no effects involving country ($F_{1,616} = 1.37$, $P > .05$), sex ($F_{1,616} = 0.00$, $P > .05$), or their interaction ($F_{1,616} = 2.03$, $P > .05$). Hence, any differences in the relationship between SD and PHB by sample or sex are not due to differences in SD scores.

An analysis of covariance on the PHB scores, controlling for age ($\beta = .306$, $F_{1,615} = 58.69$, $P < .001$) and SD ($\beta = 2.332$, $F_{1,615} = 54.94$, $P < .001$), yielded an effect due to sex (British public: females $\bar{x} = 148.07$, $s = 15.14$; males $\bar{x} = 137.67$, $s = 17.93$; Toronto: females $\bar{x} = 142.92$, $s = 14.03$; males $\bar{x} = 131.37$, $s = 18.68$; $F_{1,615} = 63.56$, $P < .001$), showing that females reported better PHB than males reported. There was no effect of country ($F_{1,615} = 3.78$, $P > .05$) or country × sex ($F_{1,615} = 0.69$, $P > .05$) on PHB scores. Given the sex differences in PHB scores, the relationship between SD and PHB was analyzed separately for males and females.

Age and total PHB scores were correlated in all samples with the exception of Toronto: females (British pub-

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lic: males $r = .53$, $P < .001$, females $r = .39$, $P < .001$; Toronto: males $r = .28$, $P < .05$, females $r = .06$, $P > .05$). Similarly, SD and PHB scores were correlated in all samples with the exception of Toronto males (British public: males $r = .43$, $P < .001$, females $r = .37$, $P < .01$; Toronto: males $r = .15$, $P > .05$, females $r = -.13$, $P < .05$). Given the significant relationship of SD and PHB with age in the British public sample, and the possibility that these variables might also be interrelated at the item level, age was partialled out of the correlations that were calculated between SD and each of the 42 PHB item scores. For the purpose of comparison, simple correlations between SD and PHB item scores were also calculated.

Pearson one-tail correlations showed that total PHB scores increased as SD scores increased (British public: males $r = .46$, $P < .001$, females $r = .38$, $P < .001$; Toronto: males $r = .57$, $P < .001$, females $r = .20$, $P < .01$). When the effects due to age were removed, these correlations remained significant (British public: males $r = .30$, $P < .001$, females $r = .27$, $P < .001$; Toronto: males $r = .55$, $P < .001$, females $r = .21$, $P < .01$).

Simple Pearson one-tail correlations were calculated between SD and each of the 42 PHB items separately by sex. In the British public sample, 28 (66.7 percent) of the correlations were significant for males, with a mean value of $r = .22$, $P < .01$; 25 (59.5 percent) of the correlations were significant for females, with a mean value of $r = .19$, $P < .001$. For the Toronto sample, 16 (38.1 percent) of the correlations were significantly positive for males, with a mean value of $r = .38$, $P < .01$, while 9 (21.4 percent) were significant for females, with a mean value of $r = .16$, $P < .02$.

When the effects of age were removed, 16 (38.1 percent) of the correlations were significant for British public males, with a mean value of $r = .28$, $P < .001$; 17 (40.5 percent) of the correlations were significant for British public females, with a mean value of $r = .17$, $P < .01$. For the Toronto sample, 17 (40.5 percent) of the correlations were significantly positive for males, with a mean value of $r = .36$, $P < .01$; 8 (19.0 percent) of the correlations were significant for females, with a mean

value of $r = .17$, $P < .05$. Hence, controlling for age reduced the number of significant correlations in all samples, with the exception of Toronto females, where the number of correlations increased, since SD was negatively correlated with age.

**Comparison of response frequencies.** The wording of 15 of the PHB items used in this study was identical to that used by Langlie (7), although in some cases the number or wording of the response alternatives was slightly different. The table shows these items, the number of response alternatives, and the numerical mean and verbal alternative for this study and that of Langlie.

A comparison of the specific items showed that the numerical means and the response categories represented by these means were, on the whole, rather similar. Only for the item pertaining to sharing an unwashed glass was there a substantial difference between the means of this study and the mean scores reported by Langlie. Given this, it was possible to look at the association of SD with the responses to these items.

Simple Pearson correlations revealed that, for British public males, 7 (46.7 percent) of the 15 correlations were significantly positive, with a mean value of $r = .19$, $P < .05$; for British public females, 6 (40.0 percent) of the 15 correlations were significantly positive, with a mean value of $r = .17$, $P < .01$. For Toronto males, 4 (26.7 percent) of the 15 correlations were significantly positive, with a mean value of $r = .40$, $P < .01$; for Toronto females, 7 (46.7 percent) of the 15 correlations were significant, with a mean value of $r = .18$, $P < .01$.

Interestingly, an item assessing frequency of dental checkups was negatively correlated with the SD scores of British public males ($r = -.14$, $P < .05$), British public females ($r = -.26$, $P < .001$) and Toronto males ($r = -.28$, $P < .05$), but not with the scores of Toronto females ($r = .10$, $P > .05$).

When the effects of age were removed, there were fewer significant correlations between SD and the responses to the items common to this study and that of Langlie (7). As shown in the table, for both males and females of the British public sample, 4 (26.7 percent) of the 15 partial correlations were significant, while 7 (46.7 percent) were significant for Toronto males and 6 (40.0 percent) were significant for Toronto females. Thus, although the number of significant correlations was reduced when age was controlled, there was still a reasonable association between SD and reported PHB, given that 21 of the 60 correlations (15 items × 2 samples × sex) were significant. By chance alone, one would expect only 3 significant correlations at the .05 level.

The correlations of each item with SD also varied with the sample. The analysis of covariance on SD scores showed that this was not due to differences in SD scores

across samples. Hence, these differences may be due to differences in age or the number of subjects in each sample. A discussion of sample, age, and sex differences in PHB is contained in papers by the authors ("The Preventive Health Behavior of a Sample of the British Public" and "The Preventive Health Behavior of a Sample of Canadian and British University Students," 1983) that have been submitted for publication.

Mean responses in this study and that of Langlie[1] and correlations with social desirability (SD), controlling for age

| Comparable item | British public sample | | | Toronto students | | | Langlie[2] | | | Number of points in scales |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | Mean verbal response | $r$ with SD | Mean | Mean verbal response | $r$ with SD | Mean | Mean verbal response | | |
| Used seatbelts yesterday: | | | | | | | | | | |
| Males | 2.27 | At least once | .01 | 2.88 | Nearly every time | [3].30 | 2 | At least once | Here = 4 | |
| Females | 2.28 | At least once | −.07 | 3.21 | Nearly every time | .07 | 3 | Nearly every time | Langlie = 3 | |
| Use seatbelts on highway:[4] | | | | | | | | | | |
| Males | 3.50 | Usually | .05 | 4.14 | Usually | .03 | 2 | Often/sometimes | Here = 5 | |
| Females | 3.66 | Usually | −.03 | 4.16 | Usually | [5].17 | 2 | Often/sometimes | Langlie = 3 | |
| Use seatbelts in town:[4] | | | | | | | | | | |
| Males | 2.82 | Once in a while | −.02 | 3.86 | Usually | .06 | 2 | Often/sometimes | Here = 5 | |
| Females | 3.14 | Once in a while | −.04 | 4.16 | Usually | .12 | 2 | Often/sometimes | Langlie = 3 | |
| Signal lane changes: | | | | | | | | | | |
| Males | 4.54 | Always | [3].17 | 4.31 | Usually | .26 | 3 | Usually | Here = 5 | |
| Females | 4.38 | Usually | .04 | 4.43 | Usually | [6].23 | 4 | Always | Langlie = 4 | |
| Drink and drive: | | | | | | | | | | |
| Males | 3.80 | Few times a year | [3].18 | 3.88 | Few times a year | [5].42 | 2 | Few times a year | Here = 5 | |
| Females | 4.54 | Never | [3].12 | 4.58 | Never | .12 | 3 | Never | Langlie = 3 | |
| Brushed teeth, past 24 hours: | | | | | | | | | | |
| Males | 2.71 | Twice | .05 | 3.12 | Twice | −.24 | 3 | Twice | Here = 5 | |
| Females | 3.06 | Twice | .09 | 3.60 | Three times | .02 | 3 | Twice | Langlie = 4 | |
| Avoid coughers: | | | | | | | | | | |
| Males | 2.96 | Once in a while | .08 | 2.71 | Once in a while | [6].57 | 2 | Sometimes | Here = 5 | |
| Females | 2.84 | Once in a while | −.07 | 3.10 | Once in a while | −.03 | 2 | Sometimes | Langlie = 4 | |
| Share unwashed glass: | | | | | | | | | | |
| Males | 4.15 | Rarely | .08 | 3.88 | Rarely | [3]−.24 | 2 | Often | Here = 5 | |
| Females | 4.39 | Rarely | .03 | 3.53 | Rarely | .08 | 2 | Often | Langlie = 4 | |
| Wash hands before food: | | | | | | | | | | |
| Males | 4.14 | Usually | [3].16 | 3.61 | Usually | [3].25 | 3 | Often | Here = 5 | |
| Females | 4.26 | Usually | [5].16 | 3.94 | Usually | [3].16 | 4 | Always/usually | Langlie = 4 | |
| Wash hands after toilet:[4] | | | | | | | | | | |
| Males | 4.13 | Usually | −.00 | 3.06 | Usually | −.01 | 4 | Always/usually | Here = 5 | |
| Females | 4.38 | Usually | [3].14 | 4.28 | Usually | .11 | 4 | Always/usually | Langlie = 4 | |
| Share towels:[4] | | | | | | | | | | |
| Males | 2.64 | Once in a while | [3].15 | 3.06 | Once in a while | −.09 | 2 | Often | Here = 5 | |
| Females | 2.61 | Once in a while | .09 | 2.96 | Once in a while | [3].12 | 2 | Often | Langlie = 4 | |
| Use stairs, not elevator:[4] | | | | | | | | | | |
| Males | 3.49 | Once in a while | .11 | 3.50 | Once in a while | −.02 | 2 | Sometimes | Here = 5 | |
| Females | 3.56 | Usually | .03 | 3.31 | Once in a while | [6].30 | 2 | Sometimes | Langlie = 4 | |
| Consult doctor:[4] | | | | | | | | | | |
| Males | 2.47 | Only when something wrong | −.01 | 3.16 | Usually when something wrong | −.02 | 3 | Biannual checkup | Here = 5 | |
| Females | 2.36 | Only when something wrong | −.10 | 3.52 | Biannual checkup | −.02 | 3 | Biannual checkup | Langlie = 4 | |
| Consult dentist:[4] | | | | | | | | | | |
| Males | 3.75 | Usually when something wrong | −.01 | 3.88 | Biannual checkup | [3]−.28 | 2 | Biannual checkup | Here = 6 | |
| Females | 4.41 | Biannual checkup | [3]−.12 | 4.71 | Annual checkup | .06 | 2 | Biannual checkup | Langlie = 4 | |
| Type of smoker:[4] | | | | | | | | | | |
| Males | 4.15 | Occasional | −.10 | 4.34 | Occasional | .08 | 4 | Nonsmoker | Here = 5 | |
| Females | 4.41 | Occasional | −.01 | 4.56 | Nonsmoker | [3].13 | 4 | Nonsmoker | Langlie = 4 | |

[1] Reference 7.
[2] The mean scores have been adjusted to reflect a scale beginning at 1 rather than 0.
[3] $P < .05$.

[4] Item not selected for inclusion in PHB scale.
[5] $P < .01$.
[6] $P < .001$ (one-tail)

## Discussion

It appears that the need for approval, or SD, is associated with general measures of PHB as well as with many specific preventive behaviors. Since the response frequencies of this study were not substantially different from those reported in previous investigations, it is unlikely that this association is a mere artifact of this study. Moreover, the relationship between SD and PHB is not merely due to age, since a substantial number of correlations were significant even when age had been controlled. Given this, it seems that researchers may select one of two alternatives.

The first involves attempting to correct item scores for the influence of social desirability. Smith (12) outlined a method of doing so that resulted in more of the variance of a dependent variable being accounted for by an item-corrected independent variable. However, as it is unlikely that all of variance in an SD scale is due purely to SD, this procedure would also alter item scores in other, unspecified ways. Moreover, this procedure also makes the assumption that respondents' scores are not true reflections of their actual behavior.

The second alternative is to investigate more fully the basis of the correlation of SD with PHB. It is possible that respondents who have high SD scores, and hence a "need for approval," are conforming with the expectations of their significant referents, and that this results in the display of better PHB. Crowne and Marlow (13a) state that "the greater amenability to social influence of persons who characterize themselves in very desirable terms is seen in (a) the favorability of their attitudes toward an extremely dull and boring task; (b) their greater verbal conditionability, both directly and vicariously; (c) social conformity; (d) a tendency to give popular word associations; (e) the cautious setting of goals in a risk-taking situation; (f) their greater receptivity, depending on their expectancies about the evaluative perceptual-defence task; and (g) susceptibility to persuasion." Social conformity and cautiousness may well be associated with PHB, and attitudes toward dull tasks may be, as well, if one assumes that good PHB is relatively less exciting than poor PHB (for example, drinking or driving behavior). In fact, a recent study ("Value Correlates of Preventive Health Behavior," 1983, submitted for publication) by one of the authors (C.M.K.) found that good PHB is inversely related to the value that people place on "an exciting life."

Thus, at least at this stage, it may be misleading to adjust PHB scores on the basis of their associations with SD, and perhaps more attention should be devoted to understanding the nature of the correlation of SD with PHB. Whatever the basis of the relationship of SD with PHB, it is clear that health education has been effective in that many behaviors recommended by health educators are perceived as socially acceptable (6).

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