

This manuscript is the final author version of (and should be cited as):

Tilgner, L., Wertheim, E. H., & Paxton, S. J. (2004). The effect of social desirability on adolescent girls' responses to an eating disorders prevention program. *International Journal of Eating Disorders*, 35, 211-216.

The effect of social desirability on adolescent girls' responses to an eating disorders prevention program.

Linda Tilgner¹, Eleanor H. Wertheim¹, and Susan J. Paxton²

¹ School of Psychological Science, La Trobe University,
Bundoora (Melbourne), Victoria Australia

²Department of Psychology, University of Melbourne, Parkville, Victoria, Australia

Running Head: SOCIAL DESIRABILITY EFFECT IN A PREVENTION PROGRAM

Correspondence author: Dr. E.H. Wertheim, School of Psychological Science,
La Trobe University, Bundoora, Vic. 3083, Australia.

E-mail: e.wertheim@latrobe.edu.au

Abstract

Objective: The present paper examined whether a social desirability response bias appears to be a source of measurement error in prevention research. **Method:** Participants were 677 female students in Grade 7 ($n = 345$) and Grade 8 ($n = 332$) divided into either an intervention condition, in which participants watched a videotape promoting body acceptance and discouraging dieting and then discussed issues related to the video, or a control condition. Questionnaires were completed at baseline, post intervention, and 1-month follow-up. **Results:** Social desirability scores were correlated at a low but significant level with baseline body dissatisfaction, drive for thinness, bulimic tendencies, intention to diet and size discrepancy for intervention participants. Social desirability did not significantly correlate with change over time in the outcome measures. **Discussion:** The findings suggested that changes in girls' self-reports related to a prevention program were relatively free of social desirability response bias.

The effect of social desirability on adolescent girls' responses to an eating disorders prevention program.

Most of the research conducted into dieting and eating behaviors and beliefs, including in the area of prevention, is based upon self-report methods, which are potentially open to response bias. In particular, participants could answer questions in socially desirable ways rather than answering honestly. The current study examined whether a social desirability response set was associated with responses of early adolescent girls who had taken part in either a brief eating disorder prevention intervention or a questionnaire study.

Few studies to date have investigated the influence of social desirability bias in the reporting of dieting and weight loss beliefs, attitudes and behaviours. Several studies lend support to the possibility that social desirability can result in response bias in reports about eating and weight related attitudes and even behaviors. For example, higher scores on the Marlowe-Crowne Social Desirability Scale (MCSDS) have been found to relate to lower accuracy of reporting energy intake, as indicated by under-reporting of fats, sweets and total energy intake (Taren, et al., 1999). Two studies have found that individuals eat less food in the presence of an opposite gender individual than when alone and for females, this is particularly pronounced when eating in the presence of a more 'desirable' male (Mori, et al., 1987; Pliner & Chaiken, 1990). One motive for this was reported to be that limiting food intake was considered to be more socially desirable (Pliner & Chaiken, 1990).

The effect of social desirability on responding to eating and body-related inventories appears to depend on the scale and on the type of sample. For example, while the Dislike of Fat People Subscale was found to be related to social desirability responding in women ($r = -.29$), this was not the case for men ($r = -.16$) (Morrison & O'Connor, 1999). In the same study, the Anti-fat Attitudes Scale did not correlate significantly with social desirability bias

in either gender ($r = -.08$). In another study of undergraduates, the Eating Obsessive-Compulsiveness Scale did not correlate significantly with the MCSDS (Hart & Chiovari, 1998).

Studies examining social desirability response bias have generally used adults thus limiting generalizability of the findings. The present paper has two aims: (1) to examine whether, for early adolescent girls, a social desirability response bias is correlated with baseline scores on a variety of eating and weight related measures, including body dissatisfaction, drive for thinness, bulimic tendencies, intention to diet, and relevant knowledge; and (2) to examine whether social desirability predicts change scores for these measures in a prevention study, which would suggest that participants who are more prone to socially desirable responding report greater (or lesser) change in prevention programs.

Method

Participants

Participants were 677 female students in Grade 7 ($n = 345$) and Grade 8 ($n = 332$) from five co-educational high schools ($n = 636$) and one girls' school ($n = 41$) in Melbourne, Australia. Mean ages were 12.63 years in ($SD = .50$) Grade 7 and 13.66 years ($SD = .52$) in Grade 8. There were 446 students in an intervention condition (Grade 7 = 197, Grade 8 = 249), in which participants were shown a videotape promoting body acceptance and discouraging dieting, followed by a discussion of issues raised in the videotape and 231 students in a control condition, in which no video was shown (Grade 7 = 148, Grade 8 = 83).

Materials

A similar set of questionnaires was administered at three separate time points: Time 1, Time 2 (two weeks later, which was a 'post-intervention' assessment for the intervention

group), and Time 3 (one month after Time 2, which was a ‘follow-up intervention’ for the intervention group).

At Time 1 only, participants completed a short form of the Children’s’ Social Desirability Scale (CDS; Crandall, et al., 1965; Crandall et al., 1991). The CSD’s content is based on the MCSDS but modified for children. A short form was constructed for this study using data from 234 Grade 7 and 8 girls who were administered the full scale. The high full-scale Cronbach's alpha of .90 suggested some items could be removed. A short form was constructed from 20 items with the highest item-total *rs* (short form alpha=.82; *r* between short and full form = .94). In the current study, the short form alpha was .81

The Eating Disorders Inventory Body Dissatisfaction (EDI-BD) and Drive for Thinness (EDI-DT) subscales (Garner, Olmstead, & Polivy, 1983) were scored using untransformed item responses (1-6) (Schoemaker, van Strien & van der Staak, 1994). Definitions of the words ‘preoccupied’ and ‘magnify’ were added (Martin et al., 2000). The Bulimia subscale, of the EDI (EDI- BU) was administered to a subsample ($n = 487$) and the Dutch Eating Behaviour Questionnaire- Restraint Scale (DEBQ; Allison et al., 1992; van Strien et al., 1986) to the full sample at Times 1 and 3. Two summed items (Heinze, et al., 2000) measured knowledge about the use of altered photos of models in magazines and the tendency for dieters to regain weight (Knowledge). An Intention to Diet item asked ‘how likely are you to go on a weight loss diet in the future?’ (Heinze et al., 2000). Participants rated Current and Ideal Figure sizes from 1 (smallest) to 17 on the Contour Drawing Rating Scale (Thompson & Gray, 1995). Size discrepancy (Current – Ideal) was calculated.

The Prevention Intervention

Details of the videotape used are available in Heinze et al. (2000). Content included 1) determinants of body size/shape, weight gain during puberty; 2) historical and sociocultural influences on female appearance, the media’s role; 3) the negative effects of extreme dieting,

eating disorders, emotional eating and its triggers; 4) healthy eating habits; and 5) suggestions for creating a healthy body image and boosting self-image.

Procedure

All students and parents provided informed consent and questionnaires were code numbered. Participants and their parents were informed the study was called “Adolescent girls’ responses to a presentation on eating behaviours and body concerns” and the following was included in the description of the study (any potentially biasing comments are included here): ‘The aim of the project is to discover what girls in Years 7 and 8 think and feel about the topics discussed in a short video on eating and body image. This information is important because it will help improve prevention programs for eating problems. The video is also important because it aims to help girls accept their body shape and size... Girls that have been involved in viewing the videotape have found it educational and relevant.’

Questionnaires were administered at Time 1, Time 2 (two weeks later after the intervention in the intervention group), at a one month follow-up.

Results

All interventions were collapsed into one intervention variable since there were no significant differences between intervention types ($p > .05$), with differences between intervention and control examined where appropriate. All analyses were carried out with Grade 7 and 8 data combined since there were no main or interaction effects of grade level.

Program outcomes. See Table 1 for descriptive data at the three time points. One-way ANOVAs (alpha level set at .01) using Time 1-2 change scores on outcome measures revealed that girls in the intervention condition had a significantly greater reduction in EDI-DT, $F(1, 654) = 14.92, p = .000$, and intention to diet, $F(1, 652) = 12.97, p = .000$, and a significantly greater increase in knowledge, $F(1, 658) = 116.02, p = .000$, than girls in the control condition. No significant differences were found for EDI-BD or size discrepancy. By

one-month follow-up using Time 1-3 change scores, girls in the intervention condition still had a significantly greater increase in knowledge, $F(1, 600) = 27.16, p = .000$, than girls in the control condition. However the effect on EDI-DT, and intention to diet was no longer significant. No significant difference between conditions was found for restrained eating from baseline to follow-up (Time 1-3 change scores).

Insert Table 1 here

Effect of Social Desirability

No significant differences, $F(4, 581) = 2.31, p = .06$, were found on social desirability between the intervention and the control conditions. At baseline, social desirability had low to very low correlations ($<.20$) with most measures although in some cases this reached significance due to large sample sizes (Table 2). Baseline correlations between social desirability and EDI-BD and EDI-B were significant at a low to moderate level ($-.21$ to $-.35$). Furthermore, social desirability was not significantly correlated with change in any of the outcome measures from baseline to post intervention or baseline to follow-up (Table 2).

Insert Table 2 here

Discussion

In relation to the first aim of the study, at Time 1 social desirability was shown to have very low to low correlations with most variables indicating it was not a major influence on responses. Where r s were significant they indicated that girls with a tendency to respond in a socially desirable manner reported less body dissatisfaction and fewer dieting and

bulimic tendencies. The highest correlations related to Eating Disorder Inventory subscales, however these were still low to moderate (.18 to .35); social desirability contributed to 3.7% of the variance for drive for thinness, 5.9% for body dissatisfaction and 8.8% for bulimia. Future single time-point studies using the EDI with adolescents may benefit from controlling for social desirability response sets. Correlations between social desirability and the outcome measures were similar for control and intervention conditions, with correlations for the intervention condition more likely to reach significance due to a larger sample size.

In relation to the second aim, no evidence was found for social desirability influencing reports of change in outcome measures over time in either the control or intervention groups. In the intervention group, significant change from pre- to post-intervention was found for drive for thinness, intention to diet and knowledge, and at 1-month follow-up significant change in knowledge persisted, however, these were not the result of any social desirability effect and would appear to indicate the program produced some genuine positive short-term change.

In conclusion, social desirability response bias was associated at a low level with less reporting of some measures of body concerns and disordered eating, but did not appear to influence girls' reports related to their response to a prevention program. While this finding may be, to some extent, the product of our specific research design and protocols, the findings are promising in suggesting that self-report of change in programs can be free of this important response set bias.

References

- Allison, D.B., Kalinsky, L.B., & Gormen, B.S. (1992). The comparative psychometric properties of three measures of dietary restraint. *Psychological Assessment, 4*, 391-398.
- Crandall, V.C., Crandell, V.J., & Katkovsky, W. (1965). A children's social desirability questionnaire. *Journal of Consulting Psychology, 29* (1), 27-36.
- Crandall, V.C., Crandall, V.J., & Katkovsky, W. (1991). Children's Social Desirability Scale (CSD). In J.Robinson, P.Shaver & L.Wrightsmann (Eds.), *Measures of Personality and Social Psychological Attitudes*, vol. 1 (43-46). Academic Press.
- Garner, D.M. (1991). *Eating Disorder Inventory-2*. Professional manual. Odessa, FL: Psychological Assessment Resources.
- Garner, D.M., Olmsted, M.P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders, 2*, 15-34.
- Hart, K.E., & Chiovari, P. (1998). Inhibition of eating behaviour: negative cognitive effects of dieting. *Journal of Clinical Psychology, 54* (4), 427-430.
- Heinze, V., Wertheim, E.H, Kashima,Y. (2000). An evaluation of the importance of message source and age of recipient in a primary prevention program for eating disorders. *Eating Disorders, 8*, 131-145.
- Martin, G.C., Wertheim, E.H., Prior, M., Smart, D., Sanson,A., & Oberklaid, F. (2000). A longitudinal study of the role of childhood temperament in the later development of eating concerns. *International Journal of Eating Disorders, 27*, 150-162.
- Mori, D., Chaiken, S., & Pliner, P. (1987). "Eating lightly" and the self-presentation of femininity. *Journal of Personality and Social Psychology, 53*, 693-702.

- Morrison, T.G., & O'Connor, W.E. (1999). Psychometric properties of a scale measuring negative attitudes toward overweight individuals. *The Journal of Social Psychology, 139* (4), 436-445.
- Pliner, P., & Chaiken, S. (1990). Eating, social motives, and self-presentation in women and men. *Journal of Experimental Social Psychology, 26*, 240-254.
- Schoemaker, C., van Strien, T., & van der Staak, C. (1994). Validation of the eating disorders inventory in a nonclinical population using transformed and untransformed responses. *International Journal of Eating Disorders, 15*, 387-393.
- Taren, D.L., Tobar, M., Hill, A., Howell, W., Shisslak, C., Bell, I., & Ritenbaugh, C. (1999). The association of energy intake bias with psychological scores of women. *European Journal of Clinical Nutrition, 53*, 570-578.
- Thompson, M.A., & Gray, J.J. (1995). Development and validation of a new body-image assessment tool. *Journal of Personality Assessment, 64*, 258-269.
- van Strien, T., Frijters, J.E., Bergers, G.P., & De fares, P.B. (1986). The Dutch Eating Behaviour Questionnaire (DEBQ) for assessment of restrained, emotional and external eating behaviour. *International Journal of Eating Disorders, 5*, 295-315.

Author Notes

Address correspondence to Dr. Eleanor Wertheim, School of Psychological Science, La Trobe University, Bundoora, Vic. 3083, Australia; phone: 61 3 9479 2478, fax: 61 3 9479 1956 (email: e.wertheim@latrobe.edu.au). The authors sincerely thank the Australian Rotary Health Research Fund and the Australian Research Council for the funding that enabled this research to be conducted; and Tracey Holt, Eliza Sims, Giselle Withers, and Priscilla Yardley and all the discussion group leaders, who carried out data collection in the participating schools. A full script of the videotape and description of visual material is available from the authors.

Table 1

Means and Standard Deviations for Outcome Measures at Time 1 (Pre-intervention), Time 2 (Post-intervention) and Time 3 (Follow-up)

Variable	Time 1	Time 2	Time 3
	Mean (SD)	Mean (SD)	Mean (SD)
Knowledge ^a	7.32 (1.45)	8.29 (1.35)	7.88 (1.39)
Body Dissatisfaction ^b	30.90 (11.19)	30.30 (10.83)	30.30 (11.09)
Drive for Thinness ^b	18.95 (9.39)	17.38 (8.68)	17.02 (8.66)
Bulimia tendencies ^b	13.25 (5.39)	–	13.13 (5.78)
Size Discrepancy	2.17 (2.65)	2.05 (2.86)	2.02 (2.71)
DEBQ ^b	23.50 (9.68)	–	22.13 (9.70)
Intention to Diet ^b	3.09 (1.16)	2.92 (1.15)	2.98 (1.20)

^a Higher mean indicates increased knowledge.

^b Higher mean indicates more body dissatisfaction, drive for thinness, bulimic tendencies, restrained eating and intention to diet.

‘–’ denotes data was not obtained.

Table 2.

Correlations between Social Desirability and baseline scores and change scores for knowledge, body dissatisfaction, drive for thinness, bulimic tendencies, Figure Rating Scale, restrained eating, and intention to diet.

Variable	Time 1		Time 2		Time 3	
	Baseline		Change pre-post		Change pre-follow-up	
	Control	Intervention	Control	Intervention	Control	Intervention
Knowledge	.04	-.03	.07	-.07	-.01	-.13
Body Dissatisfaction	-.35**	-.21**	-.10	.01	-.15	.07
Drive for Thinness	-.19	-.18**	-.09	-.02	-.15	-.03
Bulimic tendencies	–	-.29**	–	–	–	.03
Figure Rating Scale:						
Current	-.10	-.05	.02	-.00	-.11	-.03
Ideal	.04	.10	.00	.01	-.18	.01
Size Discrepancy	-.17	-.15**	.02	-.01	.07	-.04
DEBQ	-.16	-.11	–	–	-.02	.07
Intention to Diet	-.11	-.18**	-.02	.04	.02	-.03

** $p < .01$; '–' denotes data was not obtained; Control ($n = 231$), Intervention ($n = 446$)