Educational Intervention on Awareness of Diet-Relevant Material in Dieters and Nondieters

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*We determined if a 60-min video intervention increased awareness about eating disorders among dieting and nondieting individuals. Eighty-six women, operationally defined as dieters (*n *= 35) or nondieters (*n *= 51), completed questionnaires measuring behavioral characteristics typically associated with anorexia and bulimia nervosa. They also viewed a 60-min videotape about diet and weight-relevant information and were examined (via a surprise quiz) on their knowledge of information retained from this video. Information in the video affected performance, but only with regard to self-esteem and importance of weight to significant others. Dieters indicated their weight as* more *important to their significant others, whereas nondieters showed the opposite pattern. Likewise, dieters' self-esteem decreased after viewing the video, whereas nondieters' self-esteem increased. Implications for educational interventions and eating disorders are discussed.*

EDUCATIONAL INTERVENTIONS DESIGNED TO inform individuals about eating disorders could play an important role in future attempts to fight the increasing numbers of individuals suffering from eating disorders (Chitty, 1991; Merriman, 1996; Nagel & Jones, 1993). Shisslak and colleagues (Shisslak, Crago, & Neal, 1990; Shisslak, Pazda, & Crago, 1990) presented four 2-hr sessions (to faculty) and eight 1-hr sessions (to students). These authors found that this information significantly increased awareness about eating disorders.

In the present study we attempted to replicate, conceptually, the work of Shisslak and colleagues. However, we wanted to see if a shorter intervention period would be effective. If a shorter intervention can accomplish the same effect as a longer intervention, then a shorter intervention would be preferred. Our goal was to see if an educational intervention program comprised of only one 60-min videotape (video) would be an effective way to increase awareness about eating disorders. To this end, the present study was designed to test three hypotheses. The first hypothesis, based on Phase 1 (or Before Video) responses, was that nondieters will have higher self-esteem, lower depression, more positive eating attitudes, better dietary restraint, and higher body confidence.

The second hypothesis was that the material in the video about weight, dieting, and eating disorders would be more relevant to dieters than it was to nondieters, because the content of the video applies more to them. Thus, dieters should score higher on an unannounced "quiz" (presented in Phase 2, or After Video) designed to measure attention to the information in the video than nondieters. Support for this hypothesis comes from Shisslak and colleagues (Shisslak, Crago, et al., 1990; Shisslak, Pazda, et al., 1990).

The third hypothesis concerned the effect of the 60-min video on the dieters and nondieters. After watching the video, dieters should indicate greater levels of self-esteem and body confidence and lower levels of dietary restraint, maladaptive eating attitudes, and depression (Shisslak, Crago, et al., 1990).

Method

Participants

The study was limited to women, as 90–95% of those with eating disorders are female. Two hundred

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thirty volunteers from introductory psychology classes at a midwestern university were offered extra credit for participating. Of these volunteers, 103 (45%) qualified for either the dieter or nondieter groups and were invited to participate; 87 (36%) agreed. Because one participant's questionnaires were incomplete, these data were excluded from the study. To be in the dieting group (n = 35, mean age = 19.6 years), participants had to indicate feeling stigmatized by weight and that they were currently on a diet. Nondieters (n = 51, mean age = 19.7 years) had to report they were currently not on a diet, had their weight within normal ranges, as indicated by the Society of Actuaries and Association of Life Insurance Directors of America (1979), and had not attempted to diet in the previous 2 years.

Testing Instruments

The six questionnaires employed in this study included the following. The Shipley Institute of Living Scale (Shipley, 1967) is a test of verbal ability. It contains two parts, a verbal test and a conceptual test that requires abstract thinking. The verbal portion contains 40 words; each word requires participants to indicate a synonym out of four choices. The present study only used the verbal portion of the test. Scores can range from 0–40. The Eating Attitudes Test (Garner & Garfinkel, 1979) is a 26-item questionnaire that measures attitudes and behaviors characteristic of eating disorders. Participants indicate the frequency with which an item applies to them using a 6-point format. The scale can be used to identify individuals whose general orientation toward food, dieting, and body size resembles the responses of individuals with bulimia or anorexia nervosa. Scores range from 0–78, with higher scores indicating a greater level of maladaptive eating attitudes. The Revised Restraint Scale (Herman & Polivy, 1980) is a 10-item scale designed to measure dietary restraint. Possible scores range from 0–35, with higher scores indicating greater levels of dietary restraint. Sample questions include "How many pounds over your desired weight were you at your maximum weight?" and "Do you eat sensibly before others and make up for it alone?" The Erwin Identity Scale (Erwin, 1982) measures body confidence, sexual identity, and conceptions about body and appearance. We used the conceptions about body and appearance subscale for the present study. This subscale consists of 59 items, each scored on a 5-point scale (1 = *very true of me,* 5 = *not at all true of me*). Scores of 26–80 are possible. Higher scores indicate greater assurance in one's conception about one's body and appearance. The Index of Self-Esteem (Hudson, 1976) is a 15-item scale designed to measure how positively individuals feel about themselves and their social interactions. It uses a 5-point scale (5 = *most or all of the time* and 1 = *rarely or none of the time.* Scores can range from 0–125, with higher scores indicating lower self-esteem. The Geriatric Depression Scale–Short Form (Ferraro & Chelminski, 1996; Sheikh & Yesavage, 1986) is a 15-item, yes–no scale designed to measure depression levels. It can be used with young and older adults and correlates positively and significantly with scores on the Beck Depression Inventory (1976). Scores range from 0–15, with scores of 6 and higher indicative of some depressive symptoms.

Procedure

In Phase 1 (Before Video, BV) participants completed a consent form and then the six questionnaires. Many of these measures were included to ensure that the two groups (dieters, nondieters) were equated on factors that could confound the results (e.g., vocabulary ability, depression level). These questionnaires were all given in the same order to all participants.

Approximately 1 to 2 weeks following BV, the dieters and nondieters completed Phase 2 (After Video, AV). In AV they completed a consent form, viewed a 60-min video (*The Famine Within*) about eating disorders (Gilday, 1990), completed the same six questionnaires again (in the same order as in BV), and received an unannounced "quiz." The quiz contained 20 questions (10 multiple choice, 10 fill in the blank) about the video content. The video, a 60-min documentary designed to increase awareness about eating disorders, includes interviews with individuals who have eating disorders as well as with psychologists and psychiatrists who discuss what an eating disorder is and what negative consequences can result from having an eating disorder. Topics covered in the video include yo-yo dieting, cultural pressures to be thin, the dangers of eating disorders, negative aversions to obesity, and the stigmatization of the obese. The major theme of the video is that the appearance of a woman should not be what defines her being. The video also reports that for most women, the ideal body is unattainable; only 4 in 1000 women have the body measurements of a model (presumably the ideal size for a woman to achieve).

Results

Means and standard deviations for all demographic and experimental data appear in Table 1. Degrees of freedom associated with all analysis of variance (ANOVA) results are 1 and 84. All significant effects are at the $p < .01$ level unless otherwise noted.

TABLE 1

Mean and Standard Deviation Values for Demographic and Experimental Variables as a Function of Group (Dieters, Nondieters) and Video

		Before video		After video	
Variable		Dieter	Nondieter	Dieter	Nondieter
Attractiveness rating	*M*	5.44	6.85	5.38	6.77
	SD	1.74	1.60	1.71	1.31
Concerned about looks	*M*	8.26	6.87	8.29	6.60
	SD	1.54	1.63	1.55	1.84
Exercise/guilt	*M*	7.35	5.85	7.24	5.58
	SD	2.39	2.48	2.24	2.39
Weight/significant other	*M*	2.09	3.12	2.71	2.69
	SD	2.85	2.74	3.21	2.73
Gain weight	*M*	2.94	2.40	2.62	2.35
	SD	3.63	2.51	3.25	2.64
Shipley vocabulary score	*M*	27.76	27.13	27.56	28.33
	SD	2.85	4.46	4.02	3.41
Eating attitudes	*M*	18.94	4.62	18.82	4.23
	SD	12.44	3.84	4.92	4.07
Dietary restraint	*M*	17.38	7.65	16.32	7.95
	SD	3.95	3.84	4.95	4.54
Body concept	*M*	56.68	58.96	54.53	58.19
	SD	12.62	9.01	14.51	11.10
Self-esteem	*M*	60.32	50.06	64.09	44.07
	SD	13.75	12.93	17.26	12.26
Depression	*M*	3.24	1.62	3.44	1.38
	SD	3.11	1.28	3.86	2.13

Data obtained from BV was used to assess Hypothesis 1. As expected, dieters (a) rated themselves as less attractive, $F = 18.21$, (b) had more concern with their appearance, $F = 15.75$, (c) reported greater amounts of guilt with lack of exercise, $F = 7.83$, (d) indicated greater levels of maladaptive eating attitudes, $F = 62.90$, (e) displayed a higher level of dietary restraint, $F = 128.92$, (f) reported greater levels of depressive symptomatology, $F = 7.08$, and (g) had lower self-esteem, $F = 12.32$, as compared to nondieters.

Mean video "quiz" scores were used to assess Hypothesis 2, which speculated that the material in the video would be more relevant to dieters than to nondieters. Out of a possible 20 correct answers, dieters ($M = 10.65$, $SD = 2.31$) and nondieters ($M = 11.44$, $SD = 2.55$) did not differ significantly in their number of correct responses to quiz questions, $F < 2.00$, thereby offering no support for Hypothesis 2. In fact, nondieters achieved higher absolute scores than dieters.

Several two-factor, mixed ANOVAs were performed in order to test Hypothesis 3. Group (dieters, nondieters) was the between-subjects factor and Video (BV, AV) was the within-subjects factor. For the Group factor, there were significant main effects for Attractiveness Rating, $F = 19.19$, Concern Look, $F = 20.27$, Exercise/Guilt, $F = 10.56$, Eating Attitudes, $F = 63.50$, Dietary Restraint, $F = 112.86$, Self-Esteem, $F = 27.55$, and Depression, $F = 9.44$. For the Video factor there were no significant main effects, $Fs < 3.00$, $ps > .10$.

Some of these main effects, however, were qualified by significant Group × Video interactions involving *perceived importance of weight for significant others,* $F = 5.87$, $p < .02$, and *self-esteem,* $F = 23.22$. Using the Newman-Keuls post hoc test, dieters (in going from BV to AV) indicated their weight as *more* important to their significant other ($p < .01$) whereas nondieters indicated their weight as *less* important ($p < .05$). For *self-esteem,* dieters reported lower levels of self-esteem in AV as compared to BV. Conversely, nondieters' level of self-esteem increased after watching the video. Using the Newman-Keuls post hoc test, the source of the interaction stems from the greater difference between BV and AV in nondieters ($p < .01$) than in dieters ($p < .05$).

Discussion

The present study attempted to determine the effectiveness of a 60-min video about dieting on various psychological and eating disorder–related behaviors in a group of dieters and nondieters. Three hypotheses were evaluated. Support for the first hypothesis was observed, and dieters, as a group, displayed lower levels of self-esteem and greater levels of depression, dietary restraint, and maladaptive eating attitudes. This finding has been observed consistently within the eating disorder literature (Shisslak, Pazda, et al., 1990).

The second hypothesis, that dieters (as compared to nondieters) would perform better on a surprise

quiz based on information presented in the 60-min video was not supported. One possible explanation for this null effect could be that the material in the video was relevant to both dieters and nondieters. Most women probably know someone who is on a diet, who is overweight, or, given the rise in prevalence rates, whom they suspect to be suffering from an eating disorder. Thus, information about diet-relevant material, the stigmatization of the obese, and eating disorders may be relevant to most women, not just those who are dieting. This observation is tempered by the fact that no pretest of video material was obtained from either group. We did not provide a pretest because we did not want to *prime* (or provide advance information) to participants that could have adversely affected their performance.

The third hypothesis was only partially supported because none of the main effects involving video (BV, AV) were statistically significant, thus indicating the video had no overall effect on behavior. Furthermore, only 2 (of a possible 11) interactions involving group and video were significant. Of the 2 interactions that were statistically significant, 1 involved *perceived importance of weight for significant others* and the other involved *self-esteem*. Dieters indicated their weight was *more* important to their significant other, whereas nondieters indicated their weight was *less* important. Likewise, dieters' self-esteem *decreased* after watching the video whereas nondieters' self-esteem *increased*.

One possible explanation as to why self-esteem decreased in dieters and increased in nondieters after presentation of the video involves confirmation bias. That is, there is an inclination to seek, interpret, and create information that confirms existing beliefs (Brehm & Kassin, 1993). Dieters may not have wanted (on some level) to see and hear certain information about dieting and eating disorders. They may not have wanted to hear that the attainment of the "perfect" body was very difficult, if not nearly impossible, for most women. Logical reasons for rejecting an extremely thin ideal conflicted with the dieters' beliefs, beliefs that if one worked hard enough, perfection could be achieved. This disconfirmatory information may have created tension the dieters sought to reduce, either by ignoring or filtering out inconsistent information from the video.

The relatively short amount of time utilized to dispense information via the video (in this case 60 min) is another possible reason why Hypothesis 3 received limited support. In the future, multiple presentations might provide a more accurate representation as to the potential of this type of intervention procedure.

Lack of support for Hypothesis 3 may have been due to the resilience of the existing beliefs and the presence of a confirmatory bias. It is thought that symptoms of depression are consequences of distorted thought processes (Beck, 1976). Cognitive distortions are those errors in thinking that maintain the validity of negative information, even the presence of contradictory evidence. If cognitive bias existed in the dieting group, then it could create cognitive distortions. These cognitive distortions may result in depressive symptoms. It is interesting to note that the dieting group indicated significantly greater levels of depression than the nondieting group. The possible involvement of cognitive distortions (through cognitive bias) in this study may explain the higher levels of depressive symptoms.

In summary, the use of educational intervention (in the form of a 60-min video) in the treatment of eating disorders, as well as in use for prevention, was only partially successful. Also, the possible role of the confirmation bias, as well as the potentially harmful effects of messages portrayed in the media and ways to counteract these effects, are both areas that may warrant further investigation. As body dissatisfaction and dieting have become statistically defined as normal behavior (Rodin, Silberstein, & Striegel-Moore, 1985), it is imperative that researchers determine the risks and benefits of this behavior, as well as the differences between dieting for cosmetic reasons versus health reasons.

References

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders.* New York: International Universities Press.

Brehm, S. S., & Kassin, S. M. (1993). Confirmation bias: From impressions to reality. In M. DeRocco, S. Granoff, & C. Horn (Eds.), *Social psychology* (2nd ed., pp. 129–136). Boston: Houghton Mifflin.

Chitty, K. K. (1991). The primary prevention role of the nurse in eating disorders. *The Nursing Clinics of North America, 26,* 789–800.

Erwin, T. D. (1982). Academic status as related to the development of identity. *The Journal of Psychology, 110,* 163–169.

Ferraro, F. R., & Chelminski, I. (1996). Preliminary normative data on the Geriatric Depression Scale–Short Form (GDS-SF) in a young adult sample. *Journal of Clinical Psychology, 52,* 443–447.

Garner, D. M., & Garfinkel, P. E. (1979). The Eating Attitudes Test: An index of the symptoms of anorexia nervosa. *Psychological Medicine, 9,* 273–279.

Gilday, K. (Producer/Director). (1990). *The Famine Within* [Videotape]. Santa Monica, CA: Direct Cinema Limited.

Herman, C. P., & Polivy, J. (1980). Restrained eating. In A. J. Stunkard (Ed.), *Obesity* (pp. 208–225). Philadelphia: W. B. Saunders.

Hudson, W. W. (1976). Index of self-concept. In O. G. Johnson (Ed.), *Tests and measurements in child development: Handbook II* (Vol. 2, pp. 694–695). San Francisco: Jossey-Bass.

Merriman, S. H. (1996). Nutrition education in the treatment of eating disorders: A suggested 10 session course. *Journal of Human Nutrition and Dietetics, 9,* 377–380.

Nagel, K. L., & Jones, K. H. (1993). Eating disorders: Prevention

through education. The Journal of Home Economics, 85, 53–56, 63.

Rodin, J., Silberstein, L. R., & Striegel-Moore, R. H. (1985). Women and weight: A normative discontent. In T. B. Sonderegger (Ed.), *Nebraska symposium on motivation, 1984: Psychology and gender* (Vol. 32, pp. 267–307). Lincoln: University of Nebraska Press.

Sheikh, J. I., & Yesavage, J. A. (1986). Geriatric Depression Scale: Recent evidence and development of a shorter version. *Clinical Gerontologist, 5,* 165–173.

Shipley, W. C. (1967). *Shipley Institute of Living Scale.* Los Angeles: Western Psychological Services.

Shisslak, C. M., Crago, M., & Neal, M. E. (1990). Prevention of eating disorders among adolescents. *American Journal of Health Promotion, 5,* 100–106.

Shisslak, C. M., Pazda, S. L., & Crago, M. (1990). Body weight and bulimia as discriminators of psychological characteristics among anorexic, bulimic, and obese women. *Journal of Abnormal Psychology, 99,* 380–384.

Society of Actuaries and Association of Life Insurance Directors of America (1979). *Build and blood pressure study.* Chicago: Author.