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Traditional and Biobehavioral Information in Dieting: The Anticipated Effects of Christian Weight Loss Literature

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The study was designed to evaluate the effects of traditional versus biobehavioral information about dieting among individuals in early stages of dieting behavior. Forty-eight participants were presented with a message emphasizing the traditional information that weight loss is only a matter of will-power. Forty-eight participants were presented with biobehavioral information that explained why dieting is often ineffective and that other approaches could be used constructively to achieve weight loss. Twenty-four participants received a control message that was unrelated to weight loss. The biobehavioral message was expected to result in decreases in self-blaming attributions. This was true only for those participants that had been overweight since childhood. Six current books on weight loss written from a Christian perspective are reviewed based upon the results of the study.

The recent proliferation of Christian weight loss books (e.g., Chapien & Coyle, 1979; Coyle & Chapien, 1984, 1985; Hampton, 1984; Hunter, 1976; Kuntzleman & Runyon, 1985) is perhaps reflective of a larger societal interest in diet, health, and fitness. Similar to traditional approaches, many Christian weight-loss books advocate the correction of obesity with the exclusive use of dieting. Yet obesity does not appear to be solely a function of food intake. At least one study has shown that obese participants do not eat as much as their non-obese counterparts (Keen, Thomas, Jarret, & Fuller, 1979). Only by considering physical activity and individual

metabolic variations can obesity be comprehensively evaluated (Katahn & McMinn, 1982; McMinn, 1981; McMinn, 1982/83; McMinn, 1984; McMinn & Katahn, 1986a, 1986b). To conceptualize obesity as unidimensionally dependent on eating behaviors is to view a very significant and complex health problem in a simplistic manner.

More significantly, the overemphasis on dieting as a weight control method may be doing a physical and psychological disservice to the millions of obese consumers who repeatedly attempt to lose weight. Many persons who diet repeatedly experience the "yo-yo" effect, with periods of weight loss inevitably being followed by periods of regain. Stunkard and Penick (1979) reviewed behavioral weight management studies and concluded that if dieting is inevitably followed by weight regain then obese individuals may be better off not dieting at all!

This study was completed in partial fulfillment of the PhD degree for the first author at Vanderbilt University. Requests for reprints should be sent to Mark McMinn, PhD, George Fox College, 414 North Meridian, Newberg, Oregon 97132.

While spiritual resources in weight loss may be of great benefit, the natural laws of behavior and physiology need also to be considered by Christians attempting to lose weight. Not to do so may lead to repeated failure experiences that are interpreted as spiritual defeats by Christian dieters.

The model of learned helplessness (Abramson, Seligman, & Teasdale, 1978; Maier & Seligman, 1976; Seligman, 1975) suggests that certain deficits accompany a learning situation when noncontingency of response and outcome is perceived. When one is exposed to an outcome that seems to result regardless of any available behaviors, then motivational, cognitive, and affective deficits will result (Maier & Seligman, 1976). While the role of learned helplessness in weight management can be intuitively understood it has not been empirically validated. One of the goals of the present study was to investigate the possible link between dieting and learned helplessness.

The high likelihood of weight regain following weight loss by dieting may lead to feelings of helplessness in many obese persons. Despite sincere desires to lose weight and admirable spiritual intentions, dieting appears to be an ineffective way to lose weight. The repeating dieter may eventually come to believe that the desired outcome (maintained weight loss) is truly unrelated to any possible behavioral response. This may, in turn, reduce motivation for weight loss (Hiroto & Seligman, 1975; Overmeier & Seligman, 1967; Seligman & Maier, 1968), cognitive understanding of effective weight loss strategies (Miller & Seligman, 1975), and affective vitality (Evans & Dinning, 1978; Hearst, 1965; O'Leary, Donovan, Cysewski, & Chaney, 1977; Price, Tyron, & Raps, 1978; Weiss, 1968).

With their revision of learned helplessness theory, Abramson, Seligman, and Teasdale (1978) introduced the concept of attribution as a mediator for learned helplessness. According to the revised model, those with internal, stable attributions for bad outcomes tend to experience more deficits. The effects of different information about dieting on helplessness and attributional style was the primary

focus of the present study.

Following a description of the present study, several weight loss books written from a Christian perspective will be reviewed. The reviews will focus on the potential effects of the material based upon the results of the study.

Method

Participants

Participants (N=120) were recruited by campus mail and from an introductory psychology course at a southeastern university. Participants were all female college undergraduates (mean age=19.1; range 17-22), some with a self-reported perceived weight problem (N=50; mean pounds overweight=15.1; range 2-70) and some with no such problem (N=70). This was thought to be an appropriate population since many of the college students had experimented with dieting (N=84; mean pounds regained=11.6; range 4-60) and/or had a mother who was overweight (N=63). Therefore, it was reasonable to postulate that some expectations of uncontrollability and some attributional styles regarding weight loss had been previously established in the participants.

Design

A three cell completely randomized design was employed with two cells containing 48 participants and one containing 24 participants. One group with 48 participants read a traditional message (from Simmons, 1980) regarding weight loss and regain that emphasized the primacy of dieting and eating behavior in weight management. There was not a Christian emphasis in this message, but neither did most of the participants have a Christian world view. Another group of 48 participants read a biobehavioral message that emphasized the likelihood of weight regain following dieting alone and the need for implementation of life-style eating and exercise patterns. A final control group of 24 participants received information concerning intelligence testing that was unrelated to weight management.

To measure pre-message helplessness and attributional style, the attributional scales of the Multidimensional-Multiattributional Obesity Causality Scale (MMOCS) was given to all participants (McMinn, 1982). The MMOCS is a weight-specific self-report scale designed to measure attributional style as well as the amount of learned helplessness. The scale has received preliminary supporting evidence for its reliability and validity (McMinn & Wallston, 1983). In addition to the standard attributional dimensions included on the scale, a face valid self-blame scale was constructed using existing MMOCS items.

Procedure

Participants logged on to the university computer system in order to complete the research procedure. First, they read and responded to questions comprising the pre-treatment assessment. Next, they were exposed to the treatment condition of reading either the traditional, biobehavioral, or control message. These messages were interspersed with questions to monitor the participants' comprehension of the material. If questions were answered incorrectly, the immediately preceding portion of the message was repeated until the questions were answered correctly. Finally, they again read and responded to questions comprising the post treatment assessment.

Within several days after the completion of the computer procedure, all participants were contacted by telephone and asked if they were interested in receiving information about a weight management group being offered by the university counseling center or information about a weight management discussion being offered in the near future. After the deadline for joining the weight group, all participants were sent a debriefing letter. A copy of the biobehavioral message was sent to all participants in the traditional message and control groups and the purpose of the study was fully explained.

Results

Results were analyzed with one-way ANOVA. Some dependent measures are

reported as change scores, but in all cases results were verified using ANCOVA with posttest scores as dependent variables and pretest scores being covaried. Analysis of variance revealed that participants receiving the traditional message were the only participants with an average decrease in overall helplessness ($F[2,177]=5.0, p<.01$). An a priori contrast revealed a significant difference between the decrease in helplessness in the participants receiving the traditional message and the increase in helplessness in the participants receiving the biobehavioral message ($t=2.7, p<.01$).

A behavioral index was constructed by summing scores on independent behavioral measures. One point each was given for expressing an interest in information about the discussion or about the weight management group. Ten points each (determined a priori) were given for showing up at the discussion group or for calling to register for the weight management group. The possible range for the behavioral index was thus 0 to 22. The observed range was from 0 to 12. Participants receiving either substantive message obtained higher scores on the behavioral index than did controls ($t=1.6, df=117, p_{1-tailed}=.05$). Also, overweight participants had a higher average behavioral index (1.80) than participants without a perceived weight problem (0.96) ($t=4.0, df=113, p_{1-tailed}<.001$).

There were no main effects for message conditions in change scores on the attributional style measures, but an interesting correlational pattern occurred in subsequent post hoc analyses. For participants given the biobehavioral measure, there was a positive linear relationship between the age they first became overweight and the difference scores on the internal-stable scale of the MMOCS ($r=.58, p_{2-tailed}<.05$). Similarly, participants who became overweight at an earlier age showed greater decreases in self-blaming attributions ($r=.40, p_{2-tailed}<.05$). These correlations are in contrast to the negative trends between the same variables among participants given the traditional message (see Table 1). Similarly, the correlational patterns between age of onset and the difference scores on the overall

Table 1
Correlational Patterns of Attitudinal Variables
with Age of Onset of Obesity
for Biobehavioral and Traditional Message Participants

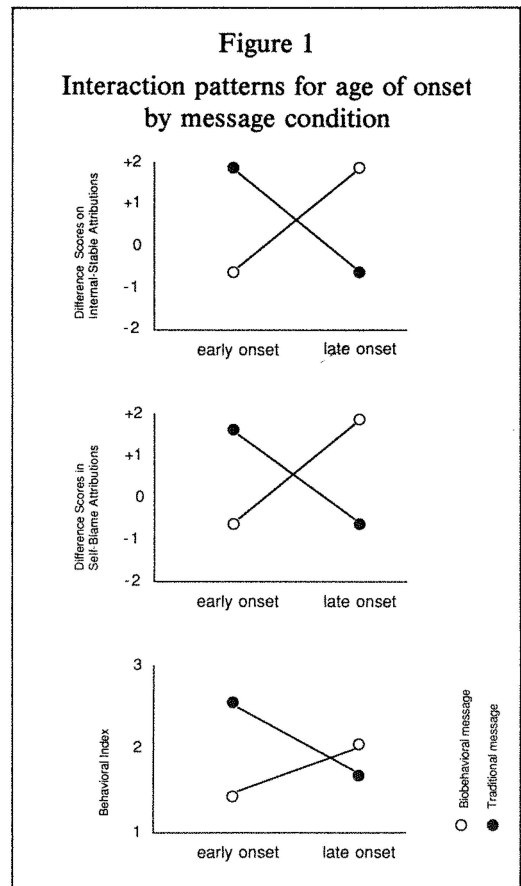
	Biobehavioral Message	Traditional Message
Difference Scores in Internal Stable Attributions	.58*** (N=18)	-.34* (N=24)
Difference Scores in Self-Blame Attributions	.40* (N=18)	-.36* (N=24)
Difference Scores in Helplessness	.51** (N=18)	-.03 (N=24)

* $p_{2\text{-tailed}} < .10$, ** $p_{2\text{-tailed}} < .05$, *** $p_{2\text{-tailed}} < .01$

helplessness scale were widely discrepant for biobehavioral and traditional message participants.

On the basis of these intriguing correlational patterns, post hoc internal analyses were completed, splitting overweight participants at the median on the age of onset variable (less than 14 years of age vs. 14 years or older). This age of onset index was crossed with the traditional versus biobehavioral message condition in 2×2 factorial analyses (all overweight control participants were late onset).

The interaction patterns for age of onset by message conditions on attributional and behavior measures can be found in Figure 1. Internal-stable attribution change scores were significantly different for early-onset participants receiving biobehavioral and traditional messages ($t=2.6$, $df=21$, $p<.05$). In contrast, late-onset participants showed the opposite pattern in internal-stable attributing, so that an overall interaction resulted ($F[1,38]=8.7$, $p<.01$). Moreover, the self-blame scale change scores showed a similar interaction ($F[1,38]=6.3$, $p<.05$). The behavioral index showed a similar trend, but results did not reach significance.



Discussion

The results support three main conclusions. First, it appears that traditional weight loss information reduces self-reported helplessness in early dieters. The traditional message of willpower and dieting is one that fosters a sense of control. The dieter may come to believe that his or her weight can be controlled by careful control of food intake. In contrast, the biobehavioral message does not lead to an enhanced sense of control. The very nature of the message is that weight loss is partially a function of biochemical mechanisms that are beyond control. It would be expected that Christian approaches to weight loss that emphasize readily available answers such as willpower, prayer, and scriptural diets would be more encouraging to readers than the writings that emphasize permanent changes in eating and activity patterns.

Second, those who receive either message appear to be more motivated to change behavior than control participants. In this sense, the motivational value of weight loss information appears to be independent of the content of the message. Thus, Christian weight loss books would be expected to have motivational effects regardless of the scientific accuracy of the approach.

Third, there appears to be a differential response to the traditional and biobehavioral messages based upon the age of onset of obesity. Those participants who became overweight early in life respond to the traditional message by increasing internal-stable and self-blame attributions. Christian weight loss approaches that emphasize willpower and dieting would therefore be expected to produce initial guilt in those with chronic obesity. These same individuals demonstrated a reduction of self-blame and internal-stable attributions in response to the biobehavioral message. Therefore, it is expected that those with chronic obesity will show lower self-blame and internal-stable attribution with those Christian weight loss approaches that do not emphasize quick-fix diets or simplistic spiritual solutions. In contrast, those who became overweight later in life responded with

increased self-blame in response to the biobehavioral message and with decreased self-blame in response to the traditional message. The quick-fix diets might be an appealing option for these individuals.

These differences might be explained with the learned helplessness model. Those participants who had been overweight since early in life had perhaps learned helplessness. Numerous attempts at dieting had been unsuccessful. To hear that weight loss is a matter of dieting and will power served to increase their guilt for past failures. When these participants read the biobehavioral message, however, they were inclined to reduce self-blame because they became aware that failures to lose weight were not just a function of a lack of willpower. This reduction in self-blame may, in turn, lead to a higher degree of behavioral self-motivation (although only a trend was seen here).

Review of Christian Weight Loss Books

Using this framework of traditional versus biobehavioral messages, several current Christian weight loss books can be evaluated. The present study will suggest some hypothesized effects of each of the books reviewed. The purpose of the review is to assist clinicians who work with Christian clients in selecting weight loss books for bibliotherapy.

God's Answer to Fat . . . Lose It!

At the beginning of Hunter's (1976) book is the instruction to pull out that sweet tooth in the name of Jesus and to replace it with a wisdom tooth. This seems to be a fitting summary of the emphases presented in the book. Much of the book is anecdotal in that Hunter was herself overweight prior to writing the book.

In the midst of this traditional message of low calorie dieting is an occasional behavioral principle that is helpful. For example, she identifies the potential damage in teaching children to clean their plates or in representing

food-wasting as a sin to children. Similarly, she notes the danger of rewarding children with food.

Hunter advocates a spiritual yieldedness that will take away the desire for food. "Take delight in the Lord and he will give you the desires of your heart" (Ps. 34:4). In addition, she suggests a "Daniel fast" of only vegetables and water for at least ten days (see Daniel 1:8-17). She concludes that diets fail because they are done in the flesh and not in the spirit (Romans 7:21-25).

This sort of approach is clearly of the traditional variety, emphasizing diet over lifestyle changes. While the spiritual significance of her argument cannot be empirically tested, it seems to increase the risk of guilt if dieting fails. Of course if dieting is successful, this message may lead to a sense of spiritual victory. But existing data suggest dieting is rarely successful (Stunkard & Penick, 1979), so guilt seems to be the more likely outcome. The ineffective dieter may not only think of himself or herself as a failure at self-discipline, but also as a spiritual failure.

Based on the results of the present study, this book might be expected to have some motivational benefits. Moreover, it may reduce feelings of helplessness in readers because there appears to be an answer to the problem of obesity. However, it will probably result in self-defeat and increased guilt for those who have attempted numerous diets in the past.

Free To Be Thin

Chapian & Coyle's (1979) book is introduced, "If you are really serious about being right with God and if you mean business about pleasing Him, living for Him and eating for Him, then He is ready to help you" (pp. 9-10). The authors conclude that, since many have tried numerous diets that do not appear to work, excess weight is a spiritual problem. Being overweight is a result of lusting for food, and lust is sin.

Chapian & Coyle do not overemphasize dieting. In fact, they state that their approach is not a diet and they point out the danger of fad diets. Rather, it is a training program to

help bring eating habits under the power of the Holy Spirit. They recommend making a covenant with God and then making a commitment to him and his will. Each chapter ends with a prayer that consists of the material contained within each chapter.

There are several references in the book to self-control. The descriptions of self-control, however, imply a spiritual willpower rather than implementation of behavioral strategies. Their three easy steps to self-control are to "realize you do have self-control," "stop being hard on yourself," and "rejoice in the self-control you do have" (p. 120).

While this approach does criticize fad dieting, it seems to be most consistent with the traditional message described above. There is a strong emphasis on spiritual willpower and changing eating behavior. There is little in this book consistent with the biobehavioral message. That is, there is little or no emphasis on stimulus control, contingency management, exercise, or biological mechanisms of energy balance. Thus, it could be anticipated that the book might reduce initial feelings of helplessness and provide motivation for those who have not been overweight for a prolonged period of time. However, it will probably have the traditional message effects of increasing self-blame and decreasing behavioral motivation for those who have been overweight since early in life. This might be especially true since there is a significant emphasis on spiritual resources. The assiduous dieter might feel spiritual defeat as well as behavioral defeat after reading this book.

There's More to Being Thin Than Being Thin

Another book by Coyle & Chapien (1984), this approach is very similar to that of their first book. There is, again, an emphasis on obesity as a spiritual problem that can be corrected by recognizing and claiming God's power over sin. Compared to their previous book, there is more attention on spiritual growth and obedience and less attention on the mechanics of weight loss. However, near the end of the book a seven-day F.A.D. (faith

applied daily) diet is recommended. It begins with a day of liquids only then adds high protein or high fiber foods each day. A particular Bible study is prescribed for each day of the diet.

This book is so similar to their first that an analysis based on the traditional vs. biobehavioral distinction is essentially identical to the analysis of their first book. It is a spiritual approach that emphasizes willpower and dieting and overlooks biobehavioral principles.

Slimming Down and Growing Up

This book, also by Coyle & Chapian (1985), is designed to be used by children and their parents. It is a 30-day program designed to teach scriptural eating patterns that the children can use the rest of their lives. If these guidelines are followed one will not be dieting but will be learning God's way to eat.

This book has some helpful behavioral recommendations for parents. For example, parents are advised to dish plates before bringing them to the table, to stop rewarding eating all the food on one's plate, and to recognize emotional motivations for eating. In addition, a food monitoring program is endorsed where all food intake is recorded and goals for future food intake are set. Some contingency management strategies are also introduced with the goal of establishing useful reinforcing stimuli for children.

Also, some helpful biobehavioral strategies are introduced, including recommendations to eat regular smaller meals, to use lowfat foods, and to eat high fiber grains, fruits, and vegetables. In addition, there are a few references to exercise as an important complement to changing eating patterns.

This book seems to be much more biobehaviorally oriented than the earlier books by these authors. There remains a strong willpower emphasis that could produce guilt with failure, but the book does emphasize behavioral principles that help to operationalize the recommendations. Since childhood-onset obesity may lead to different attributional and behavioral consequences, as suggested in the present study, this additional emphasis on

biobehavioral factors seems particularly appropriate. It might be a useful book for children and parents who desire to work together on weight loss.

The Diet Alternative

This book by Hampton (1984) begins with the warning that Satan tries to be in charge of our lives and that he will do anything in his power to make us fail. Similarly, with weight loss, until the spirit of overeating is gone, there can be no victory over one's weight problem. She concludes that dieting is not the answer because "Jesus never put a glutton on a diet" (p. 18).

Just as drunkenness is sin, Hampton concludes that gluttony is sin and that the glutton's "spirit and soul . . . [are] in condemnation" (p. 21). Unlike Chapian and Coyle, Hampton concludes that fasting is a useful biblical response to being overweight. Fasting attacks the physical habit as well as attacking the spiritual force of gluttony.

Hampton includes a table showing the days of stored calories for individuals from 5 to 110 pounds overweight. This is provided as evidence that hunger will decrease with yieldedness to God. This assumes that hunger cues are based upon fat stores and neglects the role of metabolic adaptation in weight loss (see McMinn, 1984).

A seven-day plan is given that includes a daily prayer for yieldedness to God and alternatives to eating lunch or dinner. This plan will be aided with "a supernatural ability to fast" (p. 86).

While this book appears to be the result of sincere concern and may contain many spiritual truths, it advocates a simplistic, somewhat impulsive style to weight loss that has the potential for physical and emotional damage. To suggest that fasting is the answer to weight loss that God provides is to ignore other aspects of God's truth that have been revealed through scientific study. The metabolic alterations that occur with repeated extreme caloric restriction will make maintenance of weight losses extremely difficult (McMinn & Katahn, 1986a, 1986b). Moreover, the strong emphasis on spiritual willpower will

almost certainly result in feelings of defeating self-blame and helplessness for those who are unable to succeed with this weight loss approach. Again, this will be especially true for those with an early age of obesity onset. There is no emphasis on biological realities or behavioral strategies in this book, and its potential usefulness seems minimal compared to its potential damage for overweight clients.

The No Diet Fitness Book

This book by Kuntzleman & Runyon (1985) is a welcome addition to the Christian weight loss book market. It is written by scholars and includes information that is both scientifically accurate and spiritually sensitive.

The role of heredity is emphasized in determination of body fat. Sex differences, pregnancy, and adipocyte number are considered as predetermining factors of body fat. The authors conclude that obesity is more a product of a sedentary life-style than a result of gluttony. Therefore, dieting is not the answer.

The dangers of the "yo-yo" effect and repeated dieting are emphasized and documented. The hazards of body wraps and other dehydration techniques are similarly noted. Cautions are also outlined for the use of aerobic exercise programs.

The current theories of appetite control and setpoint are reviewed in some detail by the authors. There is also a sensitive treatment of emotional contributors to appetite. While the book emphasizes exercise much more than eating changes, some behavioral strategies such as goal setting and monitoring are recommended for both eating and exercise. While the book has some slightly dated information (e.g., presenting Sheldon's endomorph, mesomorph, ectomorph typology as state-of-the-art, and stating that fat cells cannot be removed once they are generated), it is generally an accurate and comprehensive statement of the biobehavioral message regarding weight loss. According to the results of the present study, it might be expected to discourage those who have been overweight a short time. This is not particularly surprising since long-term exercising is not appealing to

many overweight persons. However, for those who have been overweight since childhood, this book would be expected to reduce self-blame and perhaps to increase behavioral motivation. It seems likely that these are the individuals who have tried the traditional willpower approaches and have failed. The prospects of a new approach that includes more than willpower is perhaps encouraging under these circumstances.

Summary

The study demonstrated that traditional weight loss information reduces self-reported helplessness, that any message about weight management seems to have some motivational effect, and that overweight individuals respond differently to traditional and biobehavioral messages depending upon age of onset.

Results have been used to review several Christian weight loss books and to predict what effects each of the books might have on learned helplessness, self-blaming attributions, and behavioral motivation. Of the six books reviewed, four are primarily comprised of the traditional message regarding weight loss, one is comprised of the biobehavioral message, and one contains elements of both. On the basis of scientific rigor and emotional consequences, *The No Diet Fitness Book* by Kuntzleman and Runyon (1985) seems to be the clear choice for bibliotherapy in Christian weight loss.

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