Objective: To characterize weight-loss claims and disclaimers present on websites for commercial weight-loss programs and compare them with results from published randomized controlled trials (RCTs).

Methods: A content analysis of all home pages and testimonials available on the websites of 24 randomly selected programs was performed. Two team members independently reviewed each page and abstracted information from text and images to capture relevant content, including demographics, weight loss, and disclaimers. A systematic review was performed to evaluate the efficacy of these programs by searching MEDLINE and the Cochrane Database of Systematic Reviews, and the mean weight change from each RCT included was abstracted.

Results: Overall, the amount of weight loss portrayed in the testimonials was extreme across all programs examined (range median weight loss 10.7-49.5 kg). Only 10 out of the 24 programs had eligible RCTs. Median weight losses reported in testimonials exceeded that achieved by trial participants. Most programs with RCTs (78%) provided disclaimers stating that the testimonial’s results were nontypical and/or gave a range of typical weight loss.

Conclusions: Weight-loss claims within testimonials were higher than results from RCTs. Future studies should examine whether commercial programs’ advertising practices influence patients’ expectations or satisfaction with modest weight-loss results.

Introduction

Weight management guidelines by the American Heart Association, American College of Cardiology, and The Obesity Society (AHA/ACC/TOS) have emphasized the need for clinicians to manage patients’ inappropriate weight-loss goals (1). Advertising may cultivate beliefs and attitudes that influence behavior (2); therefore, the promotional practices of commercial weight-loss programs could influence patients’ expectations. For example, advertisements highlighting large weight losses could promote the misconception that these results are common.

In 2002, the Federal Trade Commission (FTC) analyzed the advertising content of weight-loss programs and supplements and found that false or misleading claims were common (3). The most widespread marketing techniques used were consumer testimonials, before and after photos, and misleading claims (e.g., rapid, long-term/permanent, or all-natural/safe weight loss). The FTC discouraged media from disseminating advertisements with false or misleading statements. In 2004, the FTC repeated a content analysis of advertisements for dietary supplements that found fewer advertisements were using false or misleading practices (4). However, this second report did not examine commercial programs.

Our objective was to characterize current weight-loss claims and disclaimers present on websites for commercial weight-loss programs.

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Additional Supporting Information may be found in the online version of this article.
and then to compare these results with available data from the published randomized controlled trials (RCTs) of these programs.

Methods

Identification of commercial weight-loss programs

We generated a list of commercial weight-loss programs from several sources: obesity experts, U.S. News & World Report rankings, and Internet searches (Google and Bing), and we included programs that emphasized nutrition (dietary change and/or meal replacements) and counseling or social support components with or without physical activity, based on information provided on programs’ websites. We excluded programs that focused on issues other than weight loss (e.g., wellness, food addiction), promoted medications or supplements, were not available across the United States, or were residential programs. We excluded programs that did not have a website or ones that contained only minimal content (e.g., blog). We identified 32 commercial weight-loss programs that met these criteria. Because of the large cumulative number of testimonials present, we limited the number of programs for further data abstraction by randomly selecting 24 of these programs by using a random name draw (Supporting Information Table S1). We elected to randomly select programs to capture a broad spectrum available across the marketplace, rather than just focusing on the most popular programs, as lesser-known programs might have different advertising practices. Several programs (e.g., Health Management Resources, Curves) were not selected in the random draw. We abstracted attributes of included programs from their websites in August 2012 (Supporting Information Table S2).

Johns Hopkins Institutional Review Board exempted this study as nonhuman subjects research.

Data abstraction from commercial weight-loss programs’ websites

We performed a content analysis of all testimonials available on commercial weight-loss program websites and their home pages. Prior studies have used content analysis to evaluate images of obesity portrayed in the media (5-7) and to abstract information from community-based weight-loss programs (8). We adapted these strategies for this study. We captured home pages and all webpages featuring testimonials that were available from each program’s website between August 11, 2012, and August 18, 2012. Two staff redacted each page to remove any information that might identify the program (e.g., logos, keywords) and assigned an ID number to the page. These staff did not participate in data abstraction. To reduce any bias that they might have toward a specific program, all data abstractors were blinded to the program identity. Abstractors were only given page ID numbers, only viewed redacted pages that had all program identifying information concealed, and were not told which programs they were abstracting. We developed a coding scheme to abstract relevant content, including participant characteristics (e.g., age, gender), reported weight loss, time period over which weight loss occurred, and presence and type of weight-loss disclaimers (e.g., disclosing typical results, identifying results as nontypical). We documented the presence of disclaimers on both testimonial webpages and home pages to ensure that we did not misclassify a program by failing to note a disclaimer. Two team members independently reviewed each page and abstracted information from text and images. Testimonials that featured groups of people in which individual results could not be identified were excluded (n = 6). Discrepancies between the two coders were resolved through consensus between reviewers or adjudication by a senior investigator (KG) if consensus was not reached.

Data abstraction from systematic review of commercial weight-loss programs

To identify the RCTs of these 24 programs, we updated a 2005 systematic review (9) and have previously published these results (10-12). In brief, we searched MEDLINE and the Cochrane Database of Systematic Reviews from inception to November 2014. We contacted all identified programs to request bibliographies of published studies and reviewed their websites to identify any articles listed for screening.

Two team members independently reviewed and screened articles against our eligibility criteria (Supporting Information Table S3). We included RCTs of adults with overweight or obesity that reported results on an included program regardless of comparator. We included RCTs of at least 12 weeks duration. Two team members serially abstracted data on study design, setting, population characteristics, intervention, and mean weight change from baseline in the commercial arm.

Analysis

By using the content analysis data, we performed descriptive analyses of each program’s population to describe a proportion of testimonials by age group and gender based on information from testimonial images. We also determined the mean age based on the age reported in the testimonial text. For each program, we calculated the median weight change and interquartile range reported by participants from the testimonial text. We determined the proportion of testimonials where weight loss was reported over specific time frames, and we calculated the median weight loss during these time frames for each program (when data available). We calculated the median rather than the mean, as the weight-loss data were skewed. Finally, we determined (1) the proportion of testimonials with any disclaimer and (2) the presence of any disclaimer on the home page, and (3) we characterized the disclaimer types present.

From the systematic review, 10 programs had eligible RCTs out of the 24 included programs. For these 10 programs, we compared the characteristics (age and gender) of testimonial participants to RCT participants by commercial program. We determined the range of reported within-group mean weight change among RCTs by program and time point. Similar to our previous studies (10-12), we did not perform meta-analyses given the heterogeneous study populations, varying analysis types, and lack of variance estimates. We compared the magnitude of median weight change within the testimonials with the mean weight change reported from the RCTs of the 10 programs.

Results

Of the 24 programs examined, all programs had home pages available for review, and 20 programs had testimonials (a total of 735 testimonials were reviewed).
Programs with both testimonials and RCTs

Weight Watchers is an intensive program in which individuals monitor their food intake by tracking points and participating in in-person or online support. Weight Watchers had 24 testimonials, and most were by middle-aged women (Table 1). We identified eight RCTs that evaluated Weight Watchers. Populations included in the RCTs were older than those in the testimonial text, and gender varied somewhat between the groups (Table 2). Median weight loss in the testimonials was 16.9 kg (Figure 1), and most did not specify the weight-loss time frame (Table 3). The ranges of mean weight loss reported in RCTs were lower than the median weight loss reported in testimonials (Table 3). Weight Watchers had disclaimers of typical and nontypical results present (Table 4).

Jenny Craig is an intensive program in which individuals use meal replacements and participate in one-on-one counseling. Jenny Craig had 24 testimonials, of which 22 reported the weight loss achieved, and most were by young women (Table 1). We identified three RCTs that evaluated Jenny Craig. Populations included in the RCTs were older than those in the testimonial text, and gender varied somewhat between the groups (Table 2). Median weight loss in the testimonials was 35.7 kg (Figure 1), and most did not specify the time frame over which the weight loss occurred (Table 3). The ranges of mean weight loss reported in RCTs were lower than the median weight loss reported in testimonials (Table 3). Jenny Craig had a disclaimer of typical results present (Table 4).

Nutrisystem is an intensive program in which individuals use meal replacements and have in-person or online support. Nutrisystem had 47 testimonials, and most were by middle-aged women (Table 1). We identified three RCTs that evaluated Nutrisystem. Populations included in the RCTs were older than those in the testimonial text, and gender varied somewhat between the groups (Table 2). Median weight loss in the testimonials was 28.2 kg (Figure 1), and most did not specify the time frame over which the weight loss occurred (Table 3). The ranges of mean weight loss reported in RCTs were lower than the median weight loss reported in testimonials (Table 3). Nutrisystem displayed disclaimers of typical and nontypical results (Table 4).

Medifast is an intensive meal replacement program. Medifast had 48 testimonials, of which 40 reported the weight loss achieved, and most were by middle-aged women (Table 1). We identified one RCT that evaluated Medifast. The RCT population was similar in age to that in the testimonial text but had fewer women than those in the testimonials (Table 2). Median weight loss in the testimonials...
### TABLE 2 Population characteristics of individuals from testimonials, as abstracted from testimonial text and image for age and gender, respectively, compared with characteristics of participants from randomized controlled trials of commercial weight-loss programs

|                      | Testimonials\(^a\) | Randomized controlled trials |
|----------------------|--------------------|-----------------------------|
|                      | N                  | Mean age (range)            | N (N trials) | Mean age \(^b\) (range) | % Female |
| Weight Watchers      | 24                 | 37.4 (100%)                | 1,012 (8)    | 46.3 (37–51)             | 58-100   |
| Jenny Craig          | 24                 | 37.7\(^c\) (88%)          | 517 (3)      | 47.5 (42–57)             | 47-100   |
| Nutrisystem          | 47                 | 43.0\(^c\) (19%)          | 98 (3)       | 54.1 (52–56)             | 58-100   |
| Medifast             | 48                 | 36.6\(^c\) (35%)          | 45 (1)       | 46.3 (37–70)             | 33       |
| OPTIFAST             | 12                 | NR (NA)                   | 123 (4)      | 46.6 (38–54)             | 9-100    |
| Slimfast             | 4                  | 29.5 (100%)               | 346 (8)      | 49.7 (37–70)             | 35-100\(^d\) |
| Atkins               | 82                 | 39.7\(^c\) (91%)          | 614 (9)      | 46.2 (41–54)             | 9-100    |
| Biggest Loser Club   | 35                 | 42.5\(^c\) (31%)          | 99 (1)       | 42 (NA)                  | 59       |
| eDiets               | 11                 | 40.9\(^c\) (18%)          | 23 (1)       | 44 (NA)                  | 100      |

\(^a\)Data on age captured from text of testimonials, while gender captured from images presented in testimonials. Parentheses provide percent of testimonials that reported age in text and had images available for gender abstraction.

\(^b\)Data reported are weighted mean age from relevant arm in randomized controlled trials when more than one trial available, and range of mean ages reported in trials is in parentheses.

\(^c\)Not all testimonials stated age of participant, so results presented are determined from available data.

\(^d\)Not all randomized controlled trials included for this program reported this characteristic.

NA, not applicable; NR, not reported.

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**Figure 1** Median and interquartile range of reported weight losses in testimonials, by commercial program. Boxplots for each program display the median and interquartile range of weight losses reported by individuals in testimonials. Commercial programs with eligible randomized controlled trials (RCT) are presented on the left in dark gray, and programs without such trials are presented on the right in light gray.
### TABLE 3 Comparison of weight change (kg) between individuals in testimonials and participants from randomized controlled trials of commercial weight-loss programs by time point

| Time point, mo | Testimonials<sup>a</sup> | Randomized controlled trials<sup>b</sup> |
|---------------|--------------------------|------------------------------------------|
|               | N  | Median weight change, kg (IQR) | N (N trials) | Range mean weight change, kg |
| Weight Watchers | Unspecified | 16 | -14.7 (-11.1, -23.5) | 0 | - |
| 3-5           | 2  | -9.5 (-9.5, -9.5) | 520 (5) | -3.8 to -6.1 |
| 6-11          | 5  | -30.5 (-27.7, -31.3) | 488 (5) | -3.5 to -6.6 |
| 12-23         | 2  | -33.3 (-27.0, -39.5) | 797 (6) | -3.0 to -9.1 |
| ≥ 24          | 1  | -96.3 | 211 (1) | -2.9 |
| Jenny Craig   | Unspecified | 16 | -41.1 (-27.2, -69.0) | 0 | - |
| 3-5           | 1  | -11.4 | 0 | - |
| 6-11          | 2  | -22.0 (-20.1, -24.0) | 517 (3) | -7.2 to -11.1 |
| 12-23         | 2  | -43.4 (-34.9, -51.9) | 517 (3) | -6.6 to -10.1 |
| ≥ 24          | 1  | -30.9 | 331 (1) | -6.2 to -7.4 |
| Nutrisystem   | Unspecified | 44 | -27.7 (-18.4, -39.9) | 0 | - |
| 3-5           | 0  | - | 97 (3) | -5.5 to -8.2 |
| 6-11          | 1  | -34.1 | 84 (2) | -7.3 to -10.8 |
| 12-23         | 1  | -25.9 | 0 | - |
| ≥ 24          | 1  | -49.5 | 0 | - |
| Medifast      | Unspecified | 23 | -33.2 (-21.4, -48.0) | 0 | - |
| 3-5           | 4  | -21.6 (-20.2, -24.2) | 28 (1) | -13.5 |
| 6-11          | 10 | -40.2 (-27.0, -45.5) | 26 (1) | -8.9 |
| 12-23         | 1  | -22.7 | 0 | - |
| ≥ 24          | 0  | - | 0 | - |
| OPTIFAST      | Unspecified | 10 | -35.2 (-30.5, -44.7) | 0 | - |
| 3-5           | 1  | -31.8 | 112 (4) | -11.5 to -21.3 |
| 6-11          | 0  | - | 108 (4) | -11.1 to -22.4 |
| 12-23         | 1  | -63.6 | 41 (1) | -8.3 |
| ≥ 24          | 0  | - | 0 | - |
| Slimfast      | Unspecified | 4  | -21.6 (-13.4, -30.7) | 0 | - |
| 3-5           | 0  | - | 163 (4) | -5.6 to -7.1 |
| 6-11          | 0  | - | 199 (5) | -4.8 to -9.0 |
| 12-23         | 0  | - | 136 (4) | -4.4 to -10.7 |
| ≥ 24          | 0  | - | 32 (1) | -10.5 |
| Atkins        | Unspecified | 42 | -36.4 (-25.9, -47.5) | 0 | - |
| 3-5           | 6  | -18.2 (-17.8, -18.2) | 271 (4) | -5.2 to -9.5 |
| 6-11          | 13 | -31.8 (-27.3, -39.5) | 502 (8) | -3.2 to -12.2 |
| 12-23         | 13 | -45.5 (-36.4, -72.7) | 367 (6) | -2.1 to -10.9 |
| ≥ 24          | 6  | -55.7 (-47.0, -86.5) | 48 (2) | -4.7 to -6.3 |
| Biggest Loser Club | Unspecified | 5  | -63.2 (-44.0, -76.3) | 0 | - |
| 3-5           | 17 | -45.0 (-22.7, -74.1) | 99 (1) | -2.1 |
| 6-11          | 3  | -31.8 (-30.7, -35.0) | 0 | - |
| 12-23         | 0  | - | 0 | - |
| ≥ 24          | 0  | - | 0 | - |
| eDiets        | Unspecified | 4  | -13.9 (-12.7, -14.2) | 23 (1) | -0.8 |
| 6-11          | 1  | -10.9 | 0 | - |
| 12-23         | 5  | -34.1 (-25.5, -40.0) | 23 (1) | -1.2 |
| ≥ 24          | 0  | - | 0 | - |

<sup>a</sup>Not all testimonials reported weight loss achieved.

<sup>b</sup>If a trial had more than one result presented during a time period, we only included last observation reported during that period in our reporting of mean weight change ranges. We included results from intention-to-treat analyses unless only completers’ analysis results reported in our presentation of mean weight change ranges.

IQR, interquartile range.
was 30.9 kg (Figure 1), and most did not specify the time frame over which the weight loss occurred (Table 3). The range of mean weight loss reported in the RCT was lower than the median weight loss reported in testimonials (Table 3). Medifast had disclaimers of typical and nontypical results present (Table 4).

OPTIFAST is an intensive meal replacement program that is typically delivered in a physician-supervised setting. OPTIFAST had 12 testimonials, and most were by middle-aged women (Table 1). We identified four RCTs that evaluated OPTIFAST. Populations included in the RCTs varied somewhat with respect to gender compared with the testimonials (Table 2). Median weight loss in the testimonials was 35.2 kg (Figure 1), and most did not specify the time frame over which the weight loss occurred (Table 3). The ranges of mean weight loss reported in RCTs were lower than the median weight loss reported in testimonials (Table 3). OPTIFAST had disclaimers of typical and nontypical results present (Table 4).

SlimFast is a self-directed meal replacement program with online support available. SlimFast had four testimonials, and all were from young women (Table 1). We identified eight RCTs that evaluated SlimFast. Populations included in the RCTs varied somewhat with respect to age and gender compared with the information in the testimonial text and images (Table 2). Median weight loss in the testimonials was 21.6 kg (Figure 1), and none specified the weight loss time frame (Table 3). The ranges of mean weight loss reported in RCTs were lower than the median weight loss reported in testimonials (Table 3). SlimFast had no disclaimers present (Table 4).

Atkins is a self-directed low-carbohydrate diet with online support available. Atkins had 82 testimonials, and most were from young or middle-aged women (Table 1). We identified nine RCTs that evaluated Atkins. Populations included in the RCTs varied with respect to age and gender compared with the testimonial text and images (Table 2). Median weight loss in the testimonials was 36.4 kg

**TABLE 4** Presence and type of disclaimers present in testimonials or on home pages of commercial weight-loss programs obtained from text abstraction, reported by program

| Program                      | Any disclaimer present on testimonials, % | Any disclaimer present on home page | Disclaimer type(s) presenta |
|------------------------------|------------------------------------------|-------------------------------------|-----------------------------|
| Weight Watchers              | 100%                                     | No                                  | Nontypical results, Typical results |
| Jenny Craig                  | 92%                                      | No                                  | Typical results             |
| Nutrisystem                  | 100%                                     | Yes                                 | Nontypical results, Typical results |
| Medifast                     | 100%                                     | Yes                                 | Nontypical results, Typical results |
| OPTIFAST                     | 100%                                     | Yes                                 | Nontypical results, Typical results |
| SlimFast                     | 0                                        | No                                  | -                           |
| Atkins                       | 0                                        | No                                  | -                           |
| Biggest Loser Club           | 86%                                      | Yes                                 | Typical results             |
| eDietz                       | 100%                                     | Yes                                 | Typical results             |
| **Programs with both testimonials and randomized controlled trials** |
| Best Life                    | 100%                                     | Yes                                 | Nontypical results, Typical results, Nonspecific |
| Body for Life                | 98%                                      | No                                  | Typical results, Nonspecific |
| Calorie King                 | 0                                        | No                                  | -                           |
| Daily Burn                   | 14%                                      | No                                  | Nontypical results, Typical results |
| Dukan Diet                   | 0                                        | No                                  | -                           |
| Flat Belly Diet              | 0                                        | No                                  | -                           |
| Jillian Michaels             | 95%                                      | Yes                                 | Nontypical results, Nonspecific |
| LA Weight Loss               | 0                                        | No                                  | -                            |
| My Fitness Pal               | 0                                        | No                                  | -                            |
| South Beach Diet             | 0                                        | No                                  | -                            |
| Spark People                 | 0                                        | Yes                                 | Typical results             |
| **Programs with testimonials and without randomized controlled trials** |
| Alere Weight Talk            | NA                                       | Yes                                 | Typical results             |
| Fat Secret                   | NA                                       | No                                  | -                            |
| Lose It                      | NA                                       | Yes                                 | Typical results             |
| Traineo                      | NA                                       | No                                  | -                            |
| **Programs without testimonials** |

*Nontypical results* disclaimer includes those stating that results achieved by person in testimonial are not typical results for program participants. *Typical results* disclaimer includes those stating typical weight loss results achieved with the program. *Nonspecific* disclaimer includes those making statements such as results vary, your fitness goals may be different, etc.

aNot all disclaimer types present in all disclaimers or all website locations.

NA, not applicable.
Among all commercial programs with RCTs, we found that the mean weight loss reported in RCTs was lower than the median weight loss reported in testimonials (Table 3). Atkin had no disclaimers present (Table 4).

The Biggest Loser Club is a self-directed program that encourages calorie tracking and offers online support. The Biggest Loser Club had 35 testimonials, and most were by middle-aged women (Table 1). We identified one RCT that evaluated the Biggest Loser Club. The RCT population was similar to those in the testimonial text and images with respect to age and gender (Table 2). Median weight loss in the testimonials was 49.5 kg (Figure 1), and most reported a weight-loss time frame of 3 to 5 months (Table 3). The range of mean weight loss reported in the RCT was lower than the median weight loss reported in testimonials (Table 3). The Biggest Loser Club included disclaimers of typical results (Table 4).

eDiets is a self-directed program that encourages calorie tracking and meal planning as well as offering online support. eDiets had 11 testimonials, and most were by young women (Table 1). We identified one RCT that evaluated eDiets. The RCT population was similar to those in the testimonial text and images with respect to age and gender (Table 2). Median weight loss in the testimonials was 14.1 kg (Figure 1). Half of the participants reported a weight-loss time frame of 3 to 5 months, and the remaining half had a time frame of 12 to 23 months (Table 3). The range of mean weight loss reported in the RCT was lower than the median weight loss reported in testimonials (Table 3). eDiets had disclaimers of typical results (Table 4).

**Programs with testimonials and without RCTs**

Eleven programs only had testimonials: Best Life (n = 4), Body for Life (n = 201, of which 154 reported the weight loss achieved), Calorie King (n = 69), Daily Burn (n = 7), Dukan Diet (n = 55), Flat Belly Diet (n = 12, of which 10 reported the weight loss achieved), Jillian Michaels (n = 21), LA Weight Loss (n = 29), My Fitness Pal (n = 22, of which 18 reported the weight loss achieved), South Beach Diet (n = 9), and Spark People (n = 21). In these programs, testimonials were typically provided by young or middle-aged adults (Table 1). Women provided most programs’ testimonials, with the exception of Body for Life (42%) and Daily Burn (29%). Median weight loss varied across these programs (Figure 1) and ranged from 10.7 kg for Body for Life to 48.9 kg for Best Life. The time frame over which weight loss occurred was variably specified across programs (0%–65% had a specified time frame; Supporting Information Table S4). Only five of these programs provided disclaimers of any kind on their websites (Best Life, Body for Life, Daily Burn, Jillian Michaels, and SparkPeople; Table 4).

**Programs without testimonials**

Four programs did not use testimonials: Alere Weight Talk, Fat Secret, Lose It, and Traineo. Only Lose It, which offers calorie tracking and online support, had an eligible RCT that reported a mean weight loss of 1.8 kg at 6 months. Only Alere Weight Talk and Lose It provided disclaimers of typical results (Table 4).

**Discussion**

Among all commercial programs with RCTs, we found that the median weight losses reported in testimonials exceeded those achieved by the trial participants for these programs. To our knowledge, this is the first content analysis of online advertisements for weight-loss programs that compares results with RCTs. While some population characteristics differed between individuals in testimonials and trial participants, and the time frame over which weight losses occurred was unknown for many testimonials, these factors are unlikely to explain the large differences in the magnitude of weight losses seen. In fact, most of these programs provided disclaimers stating that the testimonial’s results were nontypical and gave a range of typical weight loss consistent with that found in the RCTs.

Regardless of whether an RCT was available for comparison, the amount of weight loss portrayed in the testimonials was extreme across all programs examined (median weight loss ranged from 10.7 to 49.5 kg), especially when considering that participants in the Diabetes Prevention Program and Look AHEAD trials only achieved weight losses of 6.8 kg (7.2%) and 8.6 kg (8.6%) at 1 year, respectively (13,14). The AHA/ACC/TOS guidelines recommend a sustained weight loss of 3% to 5% to produce clinically significant health benefits, including reductions in triglycerides and hemoglobin A1c. Further weight loss can reduce blood pressure and improve low-density lipoprotein cholesterol and high-density lipoprotein cholesterol (1). The amount of weight loss reported in the testimonials far exceeds that recommended as clinically meaningful weight loss in these guidelines.

Our results raise the question of whether viewing these large weight losses in testimonials might influence patients’ expectations. Pictures better communicate messages in advertising compared to text alone (15), which is critical when most people spend less than 15 seconds actively on a webpage (16). Testimonials are likely to be an effective strategy. However, a complex relationship exists between consumer expectations and advertising claims. Marketing research has suggested that consumers’ product ratings tend to assimilate toward the advertised results until expectations reach a very high level, and the consumers’ experience begins to contrast with the advertised expectations, which leads to lower product evaluations (17). Similarly, the large magnitude of weight losses portrayed in testimonials might set consumer expectations unrealistically high and produce dissatisfaction with achieving typical weight loss. Prior studies have documented that unrealistic weight-loss goals are common (18-24). However, results have been mixed for whether these beliefs negatively impact weight loss or retention. Unrealistic weight-loss expectations have little effect on outcomes in clinical trials (18-22) but have been associated with greater dropout and dissatisfaction among commercial participants (23,24). Commercial participants may be more sensitive to experiencing a discrepancy between expected and actual outcomes given that they are paying for the program. This question of whether commercial program testimonials influence expectations is presently conjecture, as our study did not evaluate patient perceptions. Our results highlighted the need to investigate whether viewing advertisements alters patient weight-loss expectations and satisfaction with modest weight-loss results.

In 2009, the FTC released guidelines that required any advertisement that featured consumer testimonials to convey a disclaimer of typical or atypical results (25). Implementation of these guidelines does not seem to be common practice in health care industry advertising. Vater and colleagues found that only 15% of testimonials included a disclaimer of typical or atypical results for cancer treatment advertisements (26). In this study, we found that 58% of commercial weight-loss programs provided some type of disclaimer.
While this percentage is higher than cancer treatment advertisements, a substantial number of programs did not adhere to the FTC guidelines. Weight Watchers, Jenny Craig, and Nutrisystem have dominated the market share (72% in 2014) of the commercial weight-loss industry (27) and, therefore, are likely to enroll the vast majority of people; all had disclaimers. In addition, a greater proportion of programs that conducted RCTs provided disclaimers on their websites compared with programs without RCTs (78% vs. 45%, respectively). Undertaking RCTs and providing disclaimers may be related to a business need to manage consumer expectations and maintain brand loyalty; if inflated expectations are unmet, then the brand’s reputation and repeat sales suffer. This need may be particularly relevant to popular programs. While these programs are following the FTC guidelines, other programs are not and may warrant regulatory enforcement. As we assessed advertisements from 2012, reassessment of disclaimer status should occur by the FTC or others prior to any action, as companies may have since added disclaimers.

Our study had several limitations. While we thoroughly examined the online advertising of selected programs, we did not examine their print or television advertisements. Given the large number of testimonials across programs, we had to limit our abstraction to a subset of the eligible programs, which could have different advertising practices than those programs not captured. Future analyses might consider randomly selecting testimonials from each program or limiting to the testimonials present on home pages to capture data from all programs. We also did not include programs that promoted supplements, which were out of scope for this study. Future studies may consider examining dietary supplements. We captured website content in 2012, and commercial programs’ advertising practices may have changed. We reviewed these same programs’ websites in April of 2017 and found that most programs still use testimonials (16 of 21 programs with active websites), with only two programs that previously featured testimonials no longer using them (eDiets and Calorie King). Three programs no longer had accessible websites (Biggest Loser Club, Best Life, and Alere Weight Talk). We used a consensus approach during the content analysis, which prevents us from calculating inter-rater reliability estimates. We identified an individual’s age through both image and text abstraction in the testimonials. We assigned age groups (Table 1) by examining the testimonial image, which enabled us to have a rough estimate of the age of all individuals with an image. However, this assignment may be inaccurate and subject to abstracter bias. In contrast, the stated age in testimonial text (Table 2) is likely to be reliable; however, there were more missing data for some programs. We attempted to characterize race and ethnicity from testimonial images; however, it was difficult to determine. Our confidence in this data was limited, and, therefore, we did not present these results. We were not able to directly compare the RCT results to testimonial results through statistical testing given the limitations of the available data. Finally, we did not assess how viewing these testimonials and disclaimers affects an individual’s beliefs and expectations about weight loss. Future research should directly assess the relationship between viewing extreme weight losses in testimonials and expected weight-loss beliefs.

Conclusion

For all commercial weight-loss programs, the weight losses reported in testimonials exceeded that achieved by participants in RCTs evaluating these same programs. These weight losses also exceeded that achieved by Diabetes Prevention Program and Look AHEAD participants as well as the amount of weight loss recommended by the AHA/ACC/TOS guidelines. Future studies should examine whether commercial programs’ advertising practices influence patients’ expectations or satisfaction with modest weight-loss results.

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