The Development and Testing of the Dieter's Self Efficacy Scale

████████████████

Walden University

███████████

Psych 8316p

August 19, 2012

Abstract

The Dieter's Self efficacy scale was created in order to measure the level of belief that one holds that they are capable of performing the actions needed to effectively diet and that these actions will result in weight loss. The scale was validated was validated on a sample of 548 individuals obtained over the internet. Exploratory factor analysis was performed and three subscales were indicated (knowledge of nutrition, locus of control and determination). The scale was reduced from 60 items to a 30 item scale and criterion related validity was demonstrated on each of the three scales. The scale was created in order to aid in clinical treatment planning and should be a reliable tool for future use.

The Development and Testing of The Dieter's Self Efficacy Scale

Studies show that one of the most important keys to weight loss is a feeling of self efficacy on the part of the dieter (Greene et al 2004 & Linde, Rothman, Baldwin, & Jeffery, 2006). Self-efficacy and health locus of control have been shown to be related to dietary attitude and outcomes (Waller & Bates 1992). Dietary self efficacy has not been specifically defined in the literature thus far nor has there been a brief and comprehensive scale of the construct. The concepts of self efficacy and health related locus of control combined provide a solid operational definition of the term. Self efficacy has been described as,"the belief that one is capable of performing the actions needed to attain certain goals" (Chen, Acton, & Shao, 2010). Health locus of control is described as the belief that one has control over a certain health related outcome (Wallston & Wallston, 1978). Therefore, "dieting self efficacy" is defined as the belief that one is capable of performing the actions needed to effectively diet and that these actions will result in weight loss.

Self efficacy in dieting has been associated with greater weight loss, greater ability to adhere to weight loss goals and long term weight loss maintenance (Linde, Rothman, Baldwin, & Jeffery, 2006). The goal here was to develop and test an instrument which provides a comprehensive, valid and reliable measure of dietary self efficacy for use in a clinical setting. The scale will be utilized in a clinical setting as an aid to treatment planning and will provide direction for intervention.

METHOD

Participants

(N= 548) were recruited through the internet. Subjects were approached via "pop-up" ads which appeared on screen and asked to complete an online questionnaire. The "pop-up" request appeared on websites which were selected for nutritional health, weight loss or diet related subject matter. These included loss programs, aids, books and nutritional products. The "pop-up" explained that the aim of the study was to validate a scale in regard to health and weight loss issues but the concept of dieting self efficacy was not outlined.

Participants were asked to complete a brief and anonymous questionnaire in order to gather biographical information in order to make sure that the subjects met criteria. Criteria included being eighteen years of age and older and also having the desire to lose some weight. Questionnaires from individuals who were over eighteen years of age and who have had experience dieting met the criteria and were included in the sample. The final sample included 436 women and 112 men with an age range of 18-67. Participants who responded were also asked if they had a goal of weight loss. Most participants responded in the affirmative with a mean weight loss goal of 21.3 pounds. Participants were represented from 48 states (no one responded from Hawaii or Arkansas) and income level ranged from $13,900 annually to $69,000 annually with a mean annual income of $42,500. In order to avoid participants who respond more than once, the internet protocol was noted for each responder. With the use of a computer system, any

secondary or continuous responses were discarded. A general request at the end of the

scale was given that individuals not repeat the questionnaire as well.

Item selection and data collection

A highly secured website was utilized in order to ensure that the confidentiality of

all participants was maintained. The data was collected over a period of one month.

Those respondents who did not meet criteria were disallowed. The scale included 60

items pertaining to the construct of dieter's self efficacy. The items were rated on a Likert

type scale and each began the statement with: "I feel that I am capable of"…(ex: adhering

to a diet of my choice, setting and attaining a weight loss goal, etc). Subjects then rated

the statements on a Likert scale which included the following range: 1) all of the time, 2)

most of the time 3) some of the time 4) never. Valence was in a positive direction

throughout the test to reduce confusion and the resulting possibility of having to dismiss

certain items. Three subscales were included in the scale: knowledge of nutrition, locus

of control and determination. Statistical analysis was performed in order to validate each

subscale and the factor analysis was performed in order to attempt to reduce the number

of items. The scale was reduced to thirty items when the results of the factor analysis

(factor analysis and factor extraction) were produced. The decision of which items to

keep was also influenced by the knowledge of the understanding of the construct of

dieters self efficacy and by disallowing redundant items.

RESULTS

The data set included responses from 1146 individuals.

Table 1 provides descriptive statistics for the sample:

Variable	N	Mean	Standard Deviation
Participants income	1146	$44,247.41	$52,992.329
Partner's income	1146	$45,486.10	$45,414.748

Factor analysis using principal axis factoring was utilized on the data set in order to isolate the three factors involved. The scree plot indicated that our hypothesis was correct. The factor analysis shows that there are three distinct valid scales, with 6 items each.

Table 2 provides the statistical analysis of the three isolated factors.

	Initial Eigenvalues			Rotation Sums of Squared Loadings[a]
Factor	Total	% of Variance	Cumulative %	Total
1	3.588	19.935	19.935	2.671
2	2.452	13.620	33.555	1.711
3	1.985	11.030	44.585	2.265

Cronbach's alpha of each scale was estimated as an estimate of reliability. Values for coefficient alpha were ristaking: r=.783, dependence: r=.680 and lifestyle: r=.403. Each indicated satisfactory reliability.

Table 3 provides descriptive and reliability data for the scales.

Scale	N of Items	Cronbach's Alpha	Variance	Mean	Std. Deviation
Ristaking	6	.783	25.230	17.0846	5.02299
Dependence	6	.680	20.767	14.2487	4.55707.
Lifestyle	6	.403	11.347	16.8316	3.36855

Three variables were chosen at random and correlated with three separate scales.
The hypothesis that participant income and the dependence scale would have a significant
correlation was confirmed r=-.192, p<.01 two tails. The hypothesis that participant age
and the risk scale would have a significant correlation was not confirmed r= 0.16, p>.01
two tails. The hypothesis that participant age and lifestyle scale would have a significant
relationship was confirmed r=.-108, p>.01 two tails.

Table 4 provides the correlation statistics of three variables /scales

Variables / scales	correlation coefficient	significance
Partic income/dep scale	(-.192)	significant at the 0.01 level (2-tailed).
Partic age / risk	(.016)	not significant at the o.o1 level (two tailed)
Partic age/ lifestyle	(-.108)	significant at the 0.01 level (2-tailed).

Discussion

The present scale was created in order to measure the construct of dieter's self efficacy for use in clinical treatment planning. A feeling of self efficacy is an essential ingredient in weight loss and maintenance (Greene, et al 2004 & Linde, Rothman, Baldwin, & Jeffery, 2006). Therefore, knowledge of one's measure of dieting self efficacy is essential to successful weight loss intervention.

The scale was shown to have sound construct validity and to be a reliable measure. The sample was adequately large, based on calculation of the sample size needed. The internet provides a convenient source for sampling and an adequately large sample size was obtained based on test specifications. The sample generated was also diverse and spanned many socioeconomic and geographical groups. The use of samples obtained from the internet is controversial and there may be some concern in regard to validity. For example, the disinhibiting effects of taking an online test in one's home may affect the answers given. Also, certain groups may be under-represented as they may not have access to the internet or be prone to take computer quizzes. It would be useful to gain additional sample characteristics in order to test reliability in different subgroups based on alternative variables such as gender, age, culture and economic status. The scale will need to be utilized within a variety of groups in order to confirm reliability as an ongoing process.

References

Greene G, Fey-Yensan N, Padula C, Rossi S, Rossi J & Clark P(2004) Differences in

psychosocial variables by stage of change to fruits and vegetables in older adults.

Journal of the American Dietetic Association 104, 1236–1243.

Chen, Acton, & Shao (2010). The impact of self-efficacy on behavior change and weight

change among overweight participants in a weight loss trial. *Health Psychology*,

25(3), 282-291. doi:10.1037/0278-6133.25.3.282

Linde, J. A., Rothman, A. J., Baldwin, A. S., & Jeffery, R. W. (2006). The impact of self-

efficacy on behavior change and weight change among overweight participants in

a weight loss trial. *Health Psychology*, *25*(3), 282-291. doi:10.1037/0278-

6133.25.3.282

Waller K & Bates R (1992) Health locus of control and self-efficacy beliefs in a healthy

elderly sample. *American Journal of Health Promotion* 6, 302–309.

Wallston BS & Wallston KA (1978) Locus of control and health: a review of the

literature. Health Education Monographs 6, 107–117.

Appendix A : Test

Dieter's Self Efficacy Scale

All questions items begin " I feel that I am capable of "…. and responses should be one of these four items:

 1) ALL OF THE TIME   2) MOST OF THE TIME
3) SOME OF THE TIME   4) NEVER

Subscales : knowledge of nutrition, locus of control, determination

Items with a D after it were dismissed from the test after review.

I feel that I am capable of …….
1) controlling the amount of food that I eat
2) adhering to a diet plan of my choice
3) limiting my portion sizes
4) keeping track of what I eat
5) making healthier choices **D**
6) adhering to my diet when I am socializing
7) budgeting for any specialty food items I may need D
8) charting my progress honestly D
9) contacting my doctor or other expert when I have questions D
10) becoming more active
11) keeping an activity log D
12) making healthy decisions while grocery shopping
13) eating different foods than those around me D
14) limiting my calorie intake D
15) making diet appropriate choices when in a restaurant
16) increasing my physical health D
17) budgeting for any diet aids I may need (books, journals, exercise equipment)
18) charting my food choices daily D
19) walking when possible instead of driving D
20) losing the amount of weight I want to lose
21) improving my physical health through dieting D
22) controlling the size I wish to be
23) accessing weight loss information
24) eating the foods that are outlined by a diet plan of my choice
25) accessing the foods outlined by a diet plan D
26) consistently following my diet with or without the support of those around me
27) remaining on my diet until I have reached my goals
28) controlling my success at the scale
29) becoming a fit person D
30) choosing exercises that I want to do consistently D
31) controlling my weight long term

32) managing my impulses to "cheat"   D
33) getting back on my diet after a slip D
34) preparing the food I need to eat
35) spending the time to exercise daily
36) eating foods that I haven't tried before if they are a part of the diet plan D
37) understanding or finding out about the rules of my diet plan
38) making diet appropriate choices when I am in a hurry
39) resisting temptation of my favorite foods D
40) following the advice of the dieting expert (doctor, author, technician, etc) D
41) exercising more often
42) adjusting my schedule to accommodate an exercise routine D
43) making lasting dietary changes D
44) managing places that have triggered my over eating in the past (ie: parties)
 45) reviewing my own success and adjusting behavior accordingly
46) creating challenges for myself to improve my fitness level
47) asking for support from peers D
48) drinking the necessary amount of water
49) reviewing my progress weekly D
50) restricting my intake of alcoholic beverage D
51) following the weight loss advice of others D
52) trying new types of exercise D
53) making sacrifices in order to meet my weight loss goals
54) measuring my food servings D
55) learning more about nutrition
56) managing people who attempt to sabotage my efforts D
57) creating and achieving small weekly weight loss goals D
58) restricting negative self talk
59) having self control in regard to my food intake D
60) managing emotional eating