The Role of Negative, Saboteur, Dysfunctional Thoughts and Attitudes in Weight Loss Success in Obesity

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Abstract

This study have been conducted to investigate the relationship of saboteur, dysfunctional thoughts and attitudes with succesfull weight loss in people with obesity. Dysfunctional Attitudes Scale (DAS), Dysfunctional Diet Related Attitudes Scale for People with Obesity (DASOB), Automatic Thoughts Questionaire (ATQ) and Automatic Diet Related Thoughts Scale for People with Obesity (ATSOB) were used. Four groups with equal number of participants completed mentioned scales (three groups with obesity and "controls" with normal Body Mass Index (BMI) (N=100, Mage=33,28, 76% female). As can be seen in results "Succesful" diet group with obesity differed significantly with lower scores than "unsuccesful" diet group and the group "who are not taking professional diet help" for dysfunctional attitudes related with weight control, and ATQ total scores. "Succesful" diet group with obesity also differed significantly with lower scores than "unsuccesful" diet group and the group "who are not taking professional diet help" in terms of negative self concept, confusion and escape fantasies, loneliness isolation, and giving up helplessness related items. As a conclusion the relationship between having less saboteur, depressif, and dysfunctional cognitions and succesful weight management seems notable. Findings point out the potential importance of mentioned cognitive factors in the maintenance of obesity might have high clinical relevance. More research is needed to conclude whether these cognitive differences that determined post-treatment are a result of the differences in weight loss or a factor contributing to these differences.

Keywords: Obesity; Dysfunctional thoughts; Dysfunctional attitudes; Saboteur beliefs; Weight-loss success.

Fonksiyonel Olmayan, Baltalayıcı ve Negatif Düşünce ve Tutumların Obezitede Kilo Kaybı Başarısındaki Rolü

Özet

Bu çalışma, baltalayıcı, fonksiyonel olmayan tutum ve düşüncelerin obeziteli bireylerde başarılı kilo kaybı ile ilişkisinin araştırılması amacıyla gerçekleştirilmiştir. Fonksiyonel Olmayan Tutumlar Ölçeği (FOTÖ), Obeziteli Bireylerde Diyete İlişkin Fonksiyonel Olmayan Tutumlar Ölçeği (OBFOTÖ), Otomatik Düşünceler Ölçeği (ODÖ) ve Obeziteli Bireylerde Diyete İlişkin Otomatik Düşünceler Ölçeği (OBODÖ) kullanılmıştır. Eşit katılımcı sayısına sahip dört grup sözü edilen ölçekleri tamamlamıştır (obeziteli üç grup ve normal vücut kitle indeksine sahip 'kontroller') (N=100, Yaş Ort.=33,28, 76% Kadın). Sonuçlardan görülebileceği gibi "başarılı" diyet grubu "başarısız" diyet grubundan ve "yardım almayan" gruptan kilo kontrolüne ilişkin fonksiyonel olmayan tutumlar açısından ve otomatik düşünceler toplam puanları açısından anlamlı biçimde düşük ortalamalarla farklılaşmıştır. "Başarılı" diyet grubu "başarısız" diyet grubundan ve "yardım almayan" gruptan olumsuz benlik algısı, karmaşa kaçış fikirleri, yalnızlık izolasyon, vazgeçme çaresizlikle ilgili madde grupları

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açısından da düşük ortalamalarla farklılaşmıştır. Sonuç olarak daha az baltalayıcı, depresif ve fonkiyonel olmayan düşüncelere sahip olmakla başarılı kilo kaybının ilişkisi dikkate değer görünmektedir. Bulguların sözü edilen bilişsel faktörlerin obezitenin sürdürülmesindeki potansiyel önemine dikkat çekmesinin, klinik anlamda büyük önem taşıdığı söylenebilir. Diyet tedavisi sonrasında belirlenmiş bu bilişsel farklılıkların kilo verme başarısına katkıda bulunan faktörler mi olduğu yoksa gerçekleşen kilo kaybının sonuçları mı olduğu konusunun açıklığa kavuşturulabilmesi için daha fazla araştırma yapılması gerekmektedir.

Anahtar Kelimeler: Obezite; Fonksiyonel olmayan düşünceler; Fonksiyonel olmayan tutumlar; Baltalayıcı inanışlar; Kilo kaybı başarısı.

Introduction

According to World Health Organisation (WHO) obesity is a global public health problem which keeps growing seriously (WHO, 1997; 2000). Globaly at least three hundred million adult have body mass index (BMI) 30 or above (BMI≥30kg/m²) which indicates obesity (Abelson, and Kennedy, 2004). Costs which are related with the health problems hosted by obesity are an important percentage of health expenditures (Cawley, and Meyerhoefer, 2012; WHO, 2000). Despite the fact that even partial weight regain is bringing back all of the cardiometabolic risk factors (Beavers, D., Beavers, K., Lyles, and Nicklas, 2013), maintenance of new weight have been informed as possible but not common (Ikeda et al., 2005; Jeffrey et al., 2000; Mann et al., 2007; Wing, & Phelan, 2005).

Calorie reduction diets and exercise planning are informed as most efficient methods to carry out succesfull weight loss (Franz et al., 2007). For most of the 'Health Behavior Models', behavioral intentions are accepted as key content (Armitage & Conner, 2000). It was also claimed that intention-behavior gap can be explained by underlying psychological processes **(**Sniehotta, Scholz & Schwarzer, 2005). According to Aaron Beck's cognitive theory (1967) a person's affective response to an experience is predicted by how that individual is structuring this experience. Judith Beck (2007), has suggested that weight loss success is highly related with dysfunctional, saboteur attitudes and beliefs. Even though diet and exercise planning are informed as most efficient methods to carry out succesfull weight loss (Franz et al., 2007), it was claimed that since they couldn't adhere themselves to application and continuation of the necessary strategies, diet programs couldn't be helpfull for some people. Especially for the people who has negative, dysfunctional thoughts and attitudes which creates obstacles to adherence to these programs (Beck, 2007). The saboteur dysfunctional thoughts and irrational beliefs (like "dychotomic" thoughts as "since I ate something I shouldn't suppose to eat, my whole diet is ruined") have been emphasized by many writers in the literature (Beck, 2007; O'Connor and Dowrick, 1987; Werrij et al., 2009).

The need for more research about overeating, obesity and obesity related beliefs have also been emphasized in the related literature (Coelho, Siggen, Dietre, and Bouvard, 2013). Despite the importance of the weight loss related psychological factors, these factors have not been investigated as much as they should be (Byrne, 2002). Beside, diet related dysfunctional, saboteur thoughts, beliefs and attitudes have not been studied as much as they should be, despite the fact that this information might have high clinical relevance and could be usefull for development of more effective intervention strategies for people with obesity.

In the light of the related literature, the main purpose of this study is investigation of the relationship of saboteur, dysfunctional thoughts, beliefs and attitudes with succesfull weight loss of people with obesity.

Method

Statistical significance level was accepted as $p \leq 0,05$. SPSS 16 statistical programme was used for analysis. One way variance analyses (ANOVA) have been performed to evaluate the relationship among groups in terms of DASOB, ATSOB, DAS and ATQ variables. Independent variable was four groups of the study and dependent variable was mentioned scale scores. Related assumptions were checked and then ANOVA was conducted. Beside, groups are created according to the proposition (Green and Salkind, 2011) that reveals equal number of participants in groups can be accepted as an indicator for safe use of ANOVA. When ANOVA is found statistically significant ($p<0,05$), Tukey post hoc tests have been used to see which groups differs significantly (Green and Salkind, 2011).

Participants

The ethical principles have been followed. Informed consent have been taken from each participant before scales were given. A written information paragraph was provided by the researcher which explains the aim of data collection as a scientific study and promising confidentiality (anonymous usage of the data). Except scale completion participants did not participate any treatment as part of this investigation. Participants have not received any stipend. Data have been collected from March to May in 2016.

The definiton of the “succesful weight loss” is accepted as maintenance of ten percent weight loss for a year (Wing & Hill, 2001). Based on this, the people with obesity who lost at least 10% of their begining weight and who were succesfully maintained it for one year were assigned to the “succesful” dieters group. The group with obesity who couldn’t maintained

weight loss or couldn't loose weight was assigned to the group "unsuccesful" dieters. "Succesful" and "unsuccesful" weight loss groups with obesity have been taken from self-referred patients of a private practicing nutrition and diet clinic. Members of these two groups were individuals with obesity who applied to have a calorie reduction diet help from a professional nutritionist.

There were four groups and 25 participants in each group who answered the inventories. There were three groups with obesity (Body Mass Index; BMI≥30kg/m²) and one group with "normal BMI" (18,5kg/m²≤ BMI ≥24,9kg/m²).

All subjects participated voluntarily; 76 of them are female and 24 of them are male (6 male subjects for each group, which means groups are matching in terms of gender). The age range is between 18 and 56 (M=33,28 and SD=10,20), (see Table 1 for demographics).

Table 1. ***Demographics of participants***

	Group 1	Group 2	Group 3	Group 4
Female	19	19	19	19
Male	6	6	6	6
MeanAge	33,64	31,24	35,24	33,00
SD	10,547	9,479	11,072	9,853

Group 1:Succesfull dieters with obesity; Group 2:Unsuccesfull dieters with obesity; Group 3:group with obesity who are not taking professional diet help; Group 4:Normal BMI controls

Instruments

Dysfunctional Diet Related Attitudes Scale for People with Obesity (DASOB)

DASOB is a 18 item self report inventory, which rated on a seven point (1-7) likert scale, and assessing diet related dysfunctional attitudes for people with obesity. Cronbach alpha for DASOB is 0,883. In terms of split-half reliability, correlation between two halves is 0,594 (Okumuşoğlu, 2015). DASOB was constructed by using the dysfunctional attitude examples which are derived from literature (O'Connor and Dowrick, 1987; Werrij et al., 2009; Beck, 2007; Beck, 2010, p.222) and consistent with author's clinical experiences. Scale has items such as "I should diet absolutely or I should not diet."; "Since I am too stressfull right now, I have right to eat this food." etc.) (Okumuşoğlu, 2015).

Automatic Diet Related Thoughts Scale for People With Obesity (ATSOB)

ATSOB is a 17 item self report inventory which rated on a five point (1-5) likert scale which is constructed to assess self deceiving, saboteur dysfunctional automatic thougths related with dieting. Cronbach alpha for ATSOB is 0,829. In terms of split-half reliability, correlation between two halves is 0,582 (Okumuşoğlu, 2015). Scale was constructed by using

dysfunctional, self deceiving, saboteur thougths related with dieting which are emphasized at literature (O'Connor and Dowrick, 1987; Werrij et al., 2009; Beck, 2007; Beck, 2010, p.188) and consistent with author's clinical experiences. (ATSOB include items such as "I can eat this because everyone is eating."; "I can eat this because it is not a whole piece." etc.)

Dysfunctional Attitudes Scale (DAS)

The DAS is a 40 item self report inventory, which rated on a seven point likert scale, assesing depressive dysfunctional thoughts, assumptions and beliefs (Weisman, and Beck, 1978). Turkish reliability and validity of DAS was conducted by Şahin and Şahin (1992a).

Automatic Thoughts Questionaire (ATQ)

The ATQ is a 30 item self report inventory, which rated on a five point likert scale, assesing negative thoughts and negative self evaluations which frequently associates with depression (Hollon, and Kendall, 1980). Turkish reliability and validity of the ATQ was conducted by Şahin and Şahin (1992b). The factor analysis of ATQ revealed five factors as item groups of automatic thoughts which are related with negative self concept, confusion and escape fantasies, personal maladjustment-desire for change, loneliness/isolation and giving up/helplessness (Şahin and Şahin,1992b).

Procedure

Every participant is enrolled voluntarily. Informed consent was obtained from each participant. Self report inventories were given in random order to prevent any possible sequence effect. "Succesful" and "unsuccesful" dieting groups and other participants who are reached according to availability principle (through snowball sampling method) completed the scales in the diet clinic, in a room which was assigned for this purpose. Scales were administered by researcher. Aproximately 50 to 80 minutes are required to complete inventories. There were no participants rejecting to complete the tests.

Results

Analyses of variance by using group as ındependent variable ANOVA with DASOB and group

ANOVA have been found statistically significant for DASOB scores $F(3,96)=4.692$, $p<.005$, $\eta^2=.128$. "Successful" weight loss group with obesity ($M=55.9200$, $SD=13.7656$) differed significantly from "unsuccessful" group ($M=67.6400$, $SD=14.0264$ and the group "who are not taking professional help" ($M=71.0400$, $SD=9.5676$) for DASOB scores.

ANOVA with ATSOB and group

ANOVA have been found statistically significant for ATSOB. $F(3,96)=4.830$, $p<.005$, $\eta^2=.131$. "Successful" group with obesity (M=42.4000, SD=9.1969) and "normal controls" (M=42.9200, SD=9.6216) both, differed significantly from the group with obesity "who are not taking professional help" (M=49.4800, SD=5.9590) for ATSOB score.

ANOVA with DAS total and DAS subscales and group

ANOVA have not been found statistically significant for DAS subscales and for DAS total in terms of differences among mentioned groups.

ANOVA with ATQ total and ATQ subscales and group

ANOVA have been found statistically significant for ATQ total. $F(3,96)=8.188$, $p<.001$, $\eta^2=.204$. "Successful" group with obesity (M=67.6800, SD=21.7211) differed significantly from both, "unsuccesful" (M=86.0000, SD=13.9761) and the group "who are not taking professional help" (M=90.2800, SD=12.2696) for ATQ total score.

In terms of analysis with subscales ANOVA have been found statistically significant for ATQ negative self concept subscale, $F(3,96)=7.421$, $p<.001$, $\eta^2=.188$. The "Successful" group with obesity (Mean=21.3600, SD=9.0548) differed significantly from "unsuccessful" group (M=28.7200, SD=6.3542) and the group "who are not taking professional help" (M=29.7200, SD=3.9845) for ATQ negative self concept subscale. Beside "normal controls" also differed significantly from the group with obesity "who are not taking professional help" (M=29.7200, SD=3.9845) for ATQ negative self concept subscale.

ANOVA have been found statistically significant for ATQ confusion and escape fantasies subscale. $F(3,96)=54.202$, $p<.05$, $\eta^2=.116$. "Successful" group (M=15.5200, SD=5.6651) differed significantly from "unsuccessful" group (M=17.9200, SD=3.3281) and the group with obesity "who are not taking professional help" (M=18.5200, SD=3.2161) for ATQ confusion and escape fantasies subscale.

ANOVA have not been found statistically significant for ATQ personal maladjustment-desire for change subscale.

ANOVA have been found statistically significant for ATQ loneliness isolation subscale. $F(3,96)=7.419$, $p<.001$, $\eta^2=.188$. "Successful" group (M=8.4800, SD=2.7251) differed significantly from "unsuccessful" group (M=10.6400, SD=1.8000) and the group with obesity "who are not taking professional help" (M=11.5600, SD=2.2745) for ATQ loneliness isolation subscale.

ANOVA have been found statistically significant for ATQ giving up helplessness subscale. $F(3,96)=7.349$, $p<.001$, $\eta^2=.187$. "Successful" group (M=8.4400, SD=3.3050) differed

significantly from "Unsuccessful" group (M=11.6800, SD=2.7037) and the group with obesity "who are not taking professional help" (M=11.8400, SD=1.9510) for ATQ giving up helplessness subscale scores.

All statistically significant ANOVA results among four groups can be seen in Table 2.

Table 2. ***Statistically significant ANOVA results among four groups***

	Sum of squares	Mean of squares	F	p≤0,05	η²	df
DASOB	3150,670	1050,223	4,692	0,004	0,128	3,96
ATSOB	983,600	327,867	4,830	0,004	0,131	3,96
ATQ	7476,590	2492,197	8,188	0,000	0,204	3,96
ATQNSCON	1153,790	384,597	7,421	0,000	0,188	3,96
ATQCESFAN	237,230	79,077	4,202	0,008	0,116	3,96
ATQLONIS	127,240	42,413	7,419	0,000	0,188	3,96
ATQGIVUPHLP	186,110	62,037	7,349	0,000	0,187	3,96

Group 1:Succesfull dieters with obesity; Group 2:Unsuccesfull dieters with obesity; Group 3:Obese group who are not taking professional help; Group 4:Normal BMI controls/ Scales:DASOB:Dysfunctional attitudes scale related with obesity; ATSOB:Automatic thoughts scale related with obesity; ATQ:Automatic Thought Scale; ATQNSCON:ATQ subscale related with negative self consept thoughts; ATQESFAN: ATQ subscale related with confusion and escape fantasies; ATQLONIS:ATQ subscale related with loneliness and isolation thoughts; ATQGIVUPHLP: ATQ subscale related with giving up helplessness thoughts.

Conclusion

The relationship between having less depressive, saboteur, distorted, and dysfunctional cognitions and succesful weight management seems noteworthy. In terms of total general negative automatic thoughts (ATQ total scores) "succesful" dieters with obesity have lower means than "unsuccesful" group and the group "who are not taking professional help". It suggests a relation between having less depressive thoughts and succesful weight management. This finding is consistent with the literature (Puhl, and Heuer, 2009; Quinlan, Hoy, and Costanzo, 2009; Wang, Brownell, and Wadden, 2004) that points out labeling has negative effects on psychological states of people with obesity. The view which suggests succesful weight loss also brings psychological benefits to the patient (Barton, Walker, Lambert, Gately, and Hill, 2004) can be considered as paralel with these findings. It can be thought that perhaps the people with obesity who are more resistant to the effects of negative labeling could be able to reach their weight loss targets. It is obvious that these comments should be handled by caution because of the cross sectional nature of the present study.

In the present study lower "negative self concept" mean scores than other two groups with obesity have found for "successful" dieters. "Normal BMI" group differed with lower "negative self concept" scores than group with obesity "who are not taking professional help". Especially in today's world, negative labeling creates a troublesome climate for obese people and leads an increase in automatic thoughts which related with negative self concept, and probably a vicious cycle has been created. It can also be said that, these results of the present study seems paralel with the Chambers and Swanson's (2012) study which suggests perceived

increase in self control and self efficacy increases the weight management success. The mentioned results of the present study also seems paralel with the study in which a negative correlation between self respect and having difficulties in terms of satisfaction postpone and planned action was informed (Sarısoy, Atmaca, İş, Gümüş, and Pazvantoğlu, 2013).

"Successful" dieters with obesity differed with lower "confusion and escape fantasies" scores than other two groups with obesity. It indicates that there is a relationship between having less "confusion and escape fantasy" related negative, depressive automatic thoughts and seeking for diet help and being succesful.

According to Byrne, Cooper and Fairburn (2003) using food for mood management is one of the characteristic factors which leads relaps. In movies characters are using chocolate and ice cream as 'break-up mood healers', and even this can be accepted as a clue for existence of general opinion among people for "comforting foods". In the present study "successful" dieters with obesity differed with lower "loneliness isolation" scores than "unsuccesful" group and the group "who are not taking professional help". These findings are consistent with the study (Jönsson et al., 1986) that emphasize low degree of socialization is predictor of inefficiency for weight loss protection.

"Successful" dieters have lower "giving up-helplessness" mean scores than "unsuccesful" group and the group "who are not taking professional help". This finding is consistent with Cooper, and Fairburn's (2001) suggestion which says dieters who could not be able to reach their target weight, gives up and left usefull habits which are important for succesfull weight management. This finding is also paralel with the suggestion (McCann et al., 1992) which says overweight people shows "opposite regulatory" eating behaviors which means high calorie food intake leads to more food intake. The mentioned finding of the present study is also paralel with the study which points out that adherence to weight-loss strategies such as eating less were higher among the participants who lost at least five kilograms (Guendelman, Ritterman-Weintraub, & Kaufer-Horwitz, 2017).

According to Kuijer, and Boyce (2014) food and eating have relationship with contradictory emotions; at one side there is pleasure and enjoyment and at the other side there is anxiety and guilt. Even thought at first glance guilt seems as if it includes motivation potential for behavioral change, in fact guilt leads to feelings of desperation and lack of control. Desperation and lack of control feelings may act as a mechanism which feeds "giving up helplessness" thoughts. This result is also consistent with Wing, and Phelan's (2005) suggestion which says people who are succesfull at weight maintenance are the people who does not give up from useful strategies. Findings are also paralel with the study which points

out that self control and self efficacy are commonly studied psychological factors in the studies which investigates psychological constructs that are related with weight loss success in obesity (Lazzeretti, Rotella, Pala, & Rotella, 2015) .

The suggestions which emphasize weight loss succes is related with dysfunctional thoughts, attitudes and cognitive distortions (Beck, 2007; O'Connor, and Dowrick, 1987; Stahre, Tarnell, Hakanson, and Hallstrom, 2007; Werrij et al., 2009) and the studies (Gagnon, Daelman, and McDuff, 2013) which emphasize dysfunctional beliefs that causes adoption of ineffective mood regulation strategies are consistent with results of the present study. Findings of the present study are paralel with the literature (Beck, 2007; Byrne, 2002) which emphasize the importance of psychological factors in terms of weight loss success.

In terms of general dysfunctional attitudes that was measured by DAS (Weisman, and Beck, 1978), analysis do not revealed any statistically significant differences among groups. It is accepted as paralel with the literature which suggests that predictor of succes in weight loss is *diet related* dysfunctional, distorted thoughts and attitudes of that person (Beck, 2007; O'Connor and Dowrick, 1987; Werrij et al., 2009). Hence, it is accepted as a support for the approach that used in this study; which suggests measurement of diet related thoughts, beliefs and attitudes by using specified scales such as DASOB and ATSOB will be more informative. The scales which used in this study are self report inventories and like all other self report inventories there may be limitations which may arise from tendencies of people to give socially desirable answers. Beside, subjects were given questionaires after being "successful" or "unsuccesful" in terms of weight maintenance. Literature indicates that weight loss success leads to improvements in psychosocial functioning and psychology of people (Barton, Walker, Lambert, Gately, and Hill, 2004; Karlsson, Taft, Rydén, Sjöström, and Sullivan, 2007). By keeping this in mind, it is obvious that the differences which were found among groups does not create opportunity to talk about causality.

As a conclusion, results of this study pointed out the existence of certain differences among "succesful" dieters with obesity and the other groups in terms of cognitive factors -as having less depressive, saboteur, distorted, & dysfunctional cognitions- related with succesfull weight maintenance.

This present study's results indicated that, "successful" weight loss maintainers get lower scores on diet related dysfunctional attitudes scale (DASOB) than two other groups with obesity. Results of the present study also indicated that "succesful" dieters with obesity and people with "normal BMI" have lesser diet related negative automatic thoughts (lower

ATSOB scores) than group with obesity "who are not taking professional help". Findings of the present study implies a potential especially for DASOB to be a possible usefull device to predict the patients who might need extra interventions (as psychoeducation; psychotherapy) beside diets with calorie reduction method to be succesful at weight management. To investigate this possibility, more future research with longitudinal designs are needed. It is obvious that there is need for more research to be able to conclude whether the cognitive differences that determined post-treatment are a result of the differences in weight loss or a factor contributing to the differences in weight loss. It is hoped that the results of the presented study will add and contribute to the related knowledge which will guide future research.

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