

The Personality (Temperament and Character) Factors Related with Weight Loss Success in Obesity

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Abstract- *The main purpose of this study is investigation of relationships of the personality (temperament & character) factors with successful weight maintenance. Temperament and character was measured by Temperament and Character Inventory (TCI). Four groups of subjects as “successful obesese”, “unsuccessful obesese”, “obesese who does not look for professional help” and “normal controls” -32 subjects for each, and 128 for total- were used. The obesese who lost at least 10% of their initial weight and who were successfully maintained 10% less weight for one year were assigned to the group “successful obesese” and the obesese who couldn’t maintained weight loss were assigned to the group “unsuccessful obesese”. These two groups were chosen from patients of a private clinic and other two group from general population. One way variance analysis indicated that “successful obesese” differed significantly with higher mean scores on Self Directedness (TCI), and Cooperativeness (TCI) character subscales than “obesese who does not look for professional help”. Results also pointed out that “normal controls” differed significantly by having lower Harm Avoidance (TCI) temperament subscale mean scores than “unsuccessful obesese” and “obesese who does not look for professional help”.*

Keywords: *Weight-loss success; Obesity; Personality; Temperament; Character, healthy weight maintenance*

I. INTRODUCTION

Obesity accepted as a global public health problem (World Health Organisation; WHO, 1997). It has been estimated that globally one billion adult is overweight and three hundred million of them are obese (Abelson, and Kennedy, 2004). Diseases hosted by obesity is responsible from an important percentage of health expenditures; for example it is informed that in United States of America 21% of health related budget have been used for obesity related diseases (Cawley, and Meyerhoefer, 2012). Weight loss and maintenance of new weight have been informed as possible but not common (Ikeda et al., 2005; Wing, and Phelan, 2005). Even if some weight loss succeeded, generally new weight couldn’t be maintained (Jeffrey et al., 2000; Mann et al., 2007). It has been emphasized that even partial regain of lost weight is bringing back all of the cardiometabolic risk factors by adding more risk on them (Beavers, D., Beavers, K., Lyles, and Nicklas, 2013). These studies are only some of the studies which emphasize the importance of weight loss success and maintenance of healthy weight.

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On the other hand, there are lots of studies which emphasize importance of personality factors in weight loss success (Björvell et al., 1994; Björvell et al., 1985; Hartz, Kalkhoff, Rimm, and McCall, 1979; Jönsson et al., 1986; Sullivan et al., 2007). Obesity and eating behaviours which have effect in controlling obesity was informed as highly related with personality characteristics (Kazem et al., 2013). Gruzca, Przybeck, and Cloninger’s (2007) study indicates that Self Directedness can differentiate binge eater obesese from non-binge eater obesese. Some other studies indicated that “binge eaters” weight loss intervention success outcomes are rarer than other obesese and “binge eaters” have higher Harm Avoidance scores than non-bingeing obesese (Aydin, 2012; Grave et al., 2013). It is also suggested that obesese in general society (who does not look for professional help) have lower Self Directedness mean scores than other obese groups who are taking treatment (Fassino, Piero, Gramaglia, and Abbate-Daga, 2004; Sullivan et al., 2007). It was shown that obesese who has high otocontrol will have more successful weight loss results (Jokela et al., 2013). In related literature it is also emphasized that high scores at Self Directedness character subscale have negative correlation at blood oxygen levels at right amygdala which is related with interpretation of appetite clues (Grim et al., 2012). The diverse damaging effects of negative labeling (Puhl, and Heuer, 2009) on obese people, and suggestions about the connection between personality disorders and pathological eating (Killgore and Yurgelun-Todd, 2006) are also important issues which requires attention. Beside, weight loss success was informed as an important factor which leads to certain personality changes (Ryden et al., 2004). Since it is highly related with weight loss success it is also suggested that personality should be assessed before any weight loss treatment planning in order to be able to handle successful treatment outcomes (DePanfilis et al., 2008). In the light of the related literature, the main purpose of this study is detection of the personality (temperament and character) factors which coexist with successful weight maintenance and also with weight loss success in obesity.

II. METHODS

There are 128 volunteer participants in the study; four groups and 32 participants in each group. There are three obese groups (Body Mass Index; $BMI \geq 30$) and one “normal controls” group ($18,5 \leq BMI < 24,9$). The obesese who lost at least 10% of their beginning weight and who were successfully maintained it for one year were assigned to the group “successful obesese”. The obesese who couldn’t maintained weight loss or couldn’t loose weight was assigned to the group “unsuccessful obesese”. “Successful

obeses” and “unsuccessful obesees” were taken from volunteered patients of a private practicing nutrition and diet clinic. Patients who are coming to the clinic at least for 2 years in weekly basis were selected from this center and they asked either they want to be volunteer or not. “The obesees who doesn’t look for professional help” for weight loss have been found from general population according to availability principle. The “normal controls” ($18,5 \leq \text{BMI} \leq 24,9$) have also been found from general population according to availability principle. All subjects were participated voluntarily; 99 of them are female and 29 of them are male and 62 of them are married and 66 of them are not married. In terms of educational level of participants; there are 15 primary, 37 high school, 56 graduate and 20 postgraduate degrees. The age range is between 18 and 58 ($M=33,71$ and $SD=10,18$).

III. INSTRUMENTS

Temperament and Character Inventory (TCI)

TCI is a 240 item self report inventory assessing temperament and character (Cloninger, Svrakic, and Przybeck, 1993). Turkish reliability and validity of the TCI was conducted by Arkar (2004) and Köse et al. (2004).

IV. PROCEDURE

The study protocol followed the ethical guidelines of Turkish Psychological Association. Every participant was volunteer, and informed consent was obtained from each participant.

V. RESULTS

ANOVA with TCI subscales and group

ANOVA have been found statistically significant for Harm Avoidance subscale of TCI. $F(3,124)=4.795$, $p<.005$, $\eta^2=.104$. “Normal controls” ($M=14.812$, $SD=6.034$) differed significantly from “unsuccessful obesees” ($M=18.187$, $SD=3.146$) and “obeses who does not look for professional help” ($M=17.968$, $SD=2.206$). ANOVA have also been found statistically significant for Self Directedness subscale of TCI. $F(3,124)=4.360$, $p<.05$, $\eta^2=.095$. “Successful obesees” ($M= 25.281$, $SD=7.531$) differed significantly from “obeses who does not look for professional help” ($M=20.656$, $SD=3.525$) for Self Directedness subscale. ANOVA have also been found statistically significant for Cooperativeness subscale of TCI, $F(3,124)= 3.551$, $p<.05$, $\eta^2=.079$. “Successful obesees” ($M=24.593$, $SD=6.205$) differed significantly from “obeses who does not look for professional help” ($M=20.968$, $SD=3.523$) for Cooperativeness subscale.

ANOVA with obese group data to assess the relationship between “reason for weight loss desire” and “change in BMI”

ANOVA by using “successful”, “unsuccessful”, and “who does not look for help” obese groups was conducted to evaluate the relationship between “reason for weight loss desire” and BMI difference among obese groups. Independent variable, “reason for weight loss desire” included three levels: “esthetic”, “health”, and “no reason”. The dependent variable was the “change in BMI”. The ANOVA has been found significant, $F(2,93)=31.797$,

$p<.001$, $\eta^2=.406$. Post hoc tests revealed that “Health” reasons ($M=4.306$, $SD=3.206$) differed significantly from “esthetic” reasons ($M=1.516$, $SD=1.831$) and “no reason” ($M=0.00$, $SD=0.00$) for “change in BMI”.

ANOVA with obese group data to assess the relationship between the “BMI before” and belonging to one of three obese groups of the study

A one way analysis of variance was conducted by using obese group data to evaluate the relationship between belonging one of three obese groups of the study and “BMI before”. “Successful obesees”, “unsuccessful obesees”, and “obeses who does not look for help” were constructed three level of the independent variable and “BMI before” was dependent variable. The ANOVA have been found statistically significant, $F(2,93)=8.778$, $p<.001$, $\eta^2=.159$. Post hoc tests revealed that, “Obeses who does not look for help” ($M=32.424$, $SD=2.405$) differed significantly from “successful obesees” ($M=36.436$, $SD=6.553$) and “unsuccessful obesees” ($M=37.272$, $SD=4.971$) in terms of “BMI before”. No statistically significant differences was found between “successful” and “unsuccessful” obese groups in terms of BMI before.

VI. CONCLUSIONS

The main purpose of this study is investigation of relationships of the personality (temperament & character) factors with successful weight maintenance. Temperament and character was measured by Temperament and Character Inventory (TCI). “Normal controls” mean scores was lower at Harm Avoidance temperament subscale than “unsuccessful obesees” and “obeses who does not look for professional help”, but there was no significant difference between “normal controls” and “successful obesees”. When it is thought that high scores at Harm Avoidance related with vulnerability to depression, anxiety and low self respect, its relationship with unsuccessful efforts of weight loss and also with undesire for taking professional help can better be understood. This finding can be accepted as consistent with the studies which indicates “binge eaters” whose weight loss intervention success outcomes are rarer than other obesees have higher Harm Avoidance scores than non-bingeing obesees (Aydın, 2012; Grave et al., 2013). Results showed that “successful obesees” have significantly higher means on Self Directedness character subscale of TCI, than “obeses who does not look for professional help”. Parallel with this result, in related literature it was shown that obesees in general society (who does not look for professional help) have lower Self Directedness mean scores (Fassino, Piero, Gramaglia, and Abbate-Daga, 2004; Sullivan et al., 2007). This finding is parallel with the study (Jokela et al., 2013) which suggests obesees who has high self control will have more successful weight loss results. This result is also consistent with Grucza, Przybeck, and Cloninger’s (2007) finding which indicates that Self Directedness can differentiate binge eater obesees from non-binge eater obesees. This result is also consistent with the study (Grim et al., 2012) which emphasize high scores at Self Directedness character subscale have negative correlation at blood oxygen levels at right amygdala which is related with interpretation of appetite clues. Results showed that “successful obesees” have significantly higher means on Cooperativeness

character subscale of TCI, than “obeses who does not look for professional help”. This finding is consistent with Sullivan et al.’s (2007) results. High scores on Cooperativeness seems to have a relationship with looking for help and using that help successfully to reach the target. People who has high scores on Cooperativeness are people who has beter communication skills, who can empathize with others and who are able to use win-win approaches in interpersonal relationships. It can be said that as a result of beter communication abilities, “succesfull obesese” could be able to get maximum benefit from their weight loss treatment. It is possible to suggest that since who have high scores on cooperativeness are people who can empathize with others, they empathized with dietitian too. Probably they approached the treatment process as a win-win condition; while helping themselves, by helping the dietitian to reach his/her target which is succesfull weight loss of the patient. According to this study’s results statistically significant differences was found in terms of Harm Avoidance, Self Directedness and Cooperativeness subscales. These three dimension are three of the four subscales which pointed out as best predictors of existence of any personality disorder (Arkar, 2004). These may be accepted as an another alarming clue about the diverse damaging effects of negative labeling (Puhl, and Heuer, 2009) on obese people. The study (Killgore and Yurgelun-Todd, 2006) which suggests there is a connection between personality disorders and pathological eating can also be accepted as paralel with this study’s findings. The personality differences which was found between “succesfull obesese” and others was paralel with suggestions of Kazem et al. (2013) and DePanfilis et al. (2008) which indicate consequently that personality has effect on eating behaviors of people and personality should be assessed before any weight loss treatment planning. On the other hand it should be kept in mind that weight loss itself may create changes in personality (Ryden et al., 2004). In terms of “BMI before” no statistically significant difference was found between succesfull and unsecsesfull obese groups; and is suggests that being succesfull or unsecsesfull was not a result of differences among subjects in terms of “BMI before” which was the initial weight of the subjects. In terms of change in BMI, obesese who informed health reasons as a reason for weight loss desire realized greater change in BMI than the obesese who informed esthetic or no reason as reasons for weight loss. This finding is paralel with literature (Colvin, and Olson, 1983) which suggests having a triggering health reason leads to success in weight loss attempts. As a conclusion, results of this study pointed out the existence of certain differences in terms of personality (temperament and character) factors with succesfull weight maintenance among “succesfull obesese”, “unsecsesfull obesese”, “obesese who does not look for professional help” and “normal controls”. The scale which was used in this study is a self report inventory and like all other self report inventories always there may be limitations which may come from tendencies of people to give socially desirable answers. On the other hand subjects were given the questinaire after being “succesfull” or “unsecsesfull” in terms of weight maintenance. Therefore it is obvious that the differences which were found among

groups does not create opportunity to talk about causality. To be able to talk about causality, a longitudinal study is needed. But by looking at the very low success rates in obesity treatment, attrition rates may be more than needed to perform a longitudinal study.

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