Original Article

Obesity and Anxiety Management: A Sense of Coherence Approach

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Abstract

Background: The sense of coherence (SOC) can provide significant knowledge about how a person may handle a potentially stressful situation, such as managing obesity.

Aim: It was to investigate the possible association between obesity and the anxiety management skills

Material and Methods: Sixty-one individuals with non-morbid obesity and 127 non obese individuals (BMI<30Kg/m2) visiting cosmetic centers were enrolled in this cross-sectional study. Participants were randomly selected form a representative sample of the cosmetic centers in the area of Attica. The SOC scale along with questions on sociodemographic data was used as the research tool.

Results: Obesity was statistically significantly (p <0.05) related to the area the cosmetic center was located at, age and existence of a morbid relative. No association between SOC and BMI or the mnorbid/no morbid status was observed.

Conclusions: Anxiety management skills, as defined by SOC scale is not associated with non -morbid Obesity. A possible satisfactory SOC among Obese individuals allows interventions towards increase of self -efficacy during weight loss efforts.

Key words: Obesity, Sense of Coherence, Anxiety

Introduction

Aaron Antonovsky introduced the concepts sense of coherence (SOC) and general resistance resources (GRRs), claiming that peoples' life orientation will have an impact on health (salutogenic model of health).The SOC seems to have an impact on the QoL; the stronger the SOC, the better the QoL. Furthermore, longitudinal studies confirm the predictive validity of the SOC for a good QoL. The SOC concept is actually a health resource, influencing Qo (Skär, Juuso & Söderberg 2014).LMany empirical studies based on Salutogenesis theory have been performed to date. Many of the

hypotheses that constitute the theory have been confirmed. The scientific evidence shows that the Sense of Coherence has a strong correlation with the perceived good health, particularly mental health (Suominen 2008, Eriksson 2007). Also, research has shown that people who have developed a high Sense of Coherence manage illness (mental, physical or social) better than those with low Sense of Coherence (Eriksson 2006). The Sense of Coherence Scale is a valid, reliable and practicable inter-cultural scientific tool for measuring health (Eriksson 2005).

However, despite the empirical evidence supporting the validity of the theory, there has

been criticism. Some researchers question the concept of General Resistance Resources as ambiguous from a theoretical standpoint. The Sense of Coherence has also been criticized in that, theoretically and empirically, it is a concept that is close to the health, at least its functional aspects and, therefore, does not contribute to an actual, new understanding of how good health is maintained. Also, it is not known how exactly the Sense of Coherence develops and how it could be strengthened. It is probably a matter of a complex strengthening process, which is simultaneously characterized by challenges as well as a certain readiness to solve problems which leads to a positive spiral formation. Antonovsky (1996) emphasizes structures that support health rather than specific risk factors. For example, with the improvement of the availability of social support or the reduction of the prevalence of poverty, the reduction of the risk is long-term possible for a number of diseases in comparison with programs that operate individually in risk factors e.g. hypercholesterolemia or smoking. Of course, both ways are needed but usually the structures relating to Salutogenesis are ignored. If this strengthening process is understood, this knowledge could obviously be integrated into interventions aimed at improved understanding, the ability to manage and bestow meaning to people, which again can be of great importance for public health. On the other hand, the Sense of Coherence seems to grow throughout life, however, at present there are only a few long-term studies covering at most 13 years' post–monitoring. This still leaves a number of research questions unanswered (Suominen 2008).

Although moderate level of evidence exists for a positive association between obesity and anxiety disorders, the exact association between these two conditions is not clear yet. The studies about this subject are quite few and they follow different methodology. Furthermore, anxiety disorders share some common elements such as anxiety, avoidance and chronicity, but they also present a great deal of differences in phenomenology, neurobiology, treatment response and prognosis (Lykouras & Michopoulos 2011). The purpose of the present study was to was to investigate the possible association between obesity and the anxiety management skills, based on SOC theory.

Materials and Methods

Sixty-one individuals with non-morbid obesity and 127 non obese individuals (BMI<30Kg/m2) visiting cosmetic centers were enrolled in this cross-sectional study. Participants were randomly selected form a representative sample of the cosmetic centers in the area of Attica.

The population under study came from 9 different areas of Athens, which cover geographically and demographically the largest part of the region of Athens and suburbs. These areas include Peristeri and Aigaleo (western suburbs), Ampelokipoi, Syntagma and Kallithea (centre of Athens), Cholargos (eastern suburbs), Glyfada (south suburbs), Kifissia and Maroussi (north suburbs).

The study sample comprised 61 people with body mass index (BMI) $\geq$30 kg/m^2 (obese) and 127 people with BMI <30 kg/m^2 (non-obese) who came around the same time period to branches of slimming and cosmetic medicine centres and met the criteria to participate in the study. Obese people came for slimming services while non-obese people for other cosmetic medicine services.

From the 232 people who agreed to participate in the study, 6 were excluded for not providing reliable information on their anthropometric characteristics, 2 because they suffered from adult diabetes mellitus, 12 due to hypothyroidism and 24 because they suffered from polycystic ovary syndrome. These diseases, as they affect body weight, were considered as exclusion criteria for participation in the study so as not to cause confusion on the relationship between stress management and the existence or absence of obesity.

The research tool was a structured questionnaire. The questionnaire in the first part comprised 17 questions on the demographic, socioeconomic, anthropometric and behavioural characteristics of the individuals. The questionnaire given to obese people included 2 additional questions concerning the age when the weight increased >10 kg and the stressful event which is linked to this increase. The second part of the questionnaire included the stress management scale, Sense of Coherence (SOC), which consists of 29 questions. The questionnaire has been weighed in Greek and we received permission from those responsible to use it.

The collection of observations took place during a personal interview using the structured questionnaire described above, which is presented in the annex. Data collection lasted 12 months, from September 2006 to September 2007.

Results

Table 1 presents the demographic characteristics of the population under study: only 1/3 were men, ½ was single, while they were, on average, 35 years old with 13 years of education. Mean BMI value was 27.1 ± 6.3. Interesting are also the results pertaining to the physical activity of individuals, which are presented in table 2: Sedentary life 43%, Walking 26.6%.

As shown in table 3, in the context of simple associations, the existence of obesity was found to be associated statistically more (p<0.05) with the following characteristics: the area of the cosmetic medicine centre, the family situation, the age and the existence of a relative with increased weight.People who haven't been married showed approximately 20% less obesity compared with the married, divorced or widowers. The association of obesity with age was positive, since it has been observed that individuals aged ≥ 40 years had about twice obesity percentages compared with those of younger ages. People who had a relative with increased weight were twice as likely to be obese themselves (Table 3).

Table 1. Demographic and somatometric characteristics of the sample

	Mean±SD	N(%)
Gender		
Male		53(28.2)
Female		135(71.8)
Marital status		
Single		106(56.4)
Married		66(35.1)
Separated or divorced		11(5.9)
Widower		5(2.7)
Age (years)	35.2±11.5	
Years of study	13.4±3.0	
BMI (kg/m^2)	27.1±6.3	

Table 2. Present physical activity

	N(%)
None	81(43.1)
Walking	20(26.6)
Jogging	6(3.2)
Gym	28(14.9)
Walking. Jogging. Gym	16(8.5)
Walking. Gym	7(3.7)

Table 3. Obesity according to demographic and socioeconomic characteristics of the sample

	Obese	Non obese	p
	N (%)	**N (%)**	
Area-Suburb			
Western	12(20.3)	47(79.7)	
Center	19(32.2)	40(67.8)	
Eastern	7(50.0)	7(50.0)	0.012
South	3(18.8)	13(81.3)	
North	20(50.0)	20(50.0)	
Gender			
Άνδρας	19(35.8)	34(64.2)	0.652
Γυναίκα	42(31.1)	93(68.9)	
Family Status			
Single	26(24.5)	80(75.5)	
Married/Separate or divorced or widower	35(42.7)	47(57.3)	0.013
Age			
<40 yrs	31(23.8)	99(76.2)	
≥40 yrs	27(55.1)	22(44.9)	
Education years			
≤ 12 yrs	35(38.0)	57(62.0)	0.184
>12 yrs	24(27.6)	63(72.4)	
Employed			
Yes	52(32.3)	109(67.7)	>0.999
No	9(33.3)	18(66.7)	
Overweight/obese relative			
Yes	40(42.1)	55(57.9)	0.007
No	21(22.6)	72(77.4)	
Physical exercise duration(weekly)-present			
<5 hrs	14(27.5)	37(72.5)	>0.999
≥5 hrs	13(27.1)	35(72.9)	
Physical exercise duration(weekly)-past			
<5 hrs	18(38.8)	29(61.7)	0.244
≥5 hrs	24(27.0)	65(73.0)	
Knowledge about healthy diet			
Bad-modest	22(36.7)	38(63.3)	0.497
Good -Best	39(30.5)	89(69.5)	
Smoking ≥ 1 cigarette per day			
Yes	33(33.3)	66(66.7)	0.906
No	28(31.5)	61(68.5)	
SOC score (Median=131)			
<131	65(68.4)	30(31.6)	0.919
≥ 131	62(66.7)	31(33.3)	
X^2 test, continuity correction for 2x2 tables			

Table 4. Multiple logistic regression model for obesity

Independent Variables	N	e^B	95% CI./ e^B	p
	179			
Constant		0.468		0.127
Suburbs				
Western/ others		0.296	0.11 / 0.76	0.012
Age				
<40 yrs/ ≥40 yrs		3.572	1.4 / 8.6	0.005
Family status				
Single /other		0.77	0.34 / 1.75	0.546
Overweight/obese relative				
Yes		2.46	1.21 / 4.97	0.012

On the other hand, obesity was not associated statistically more (p≤0.05) with sex, education as this is reflected in the years of study, whether someone is employed or unemployed, the duration of physical activity at present and in the past, the knowledge on healthy eating, smoking habit, and their capacity to manage stress as this is evaluated with the SOC scale scores. In the logistic regression model, only age, place of residence and obese relative were related to Obesity (Table 4).

Discussion

In this study, obesity and stress management, as measured by the sum of the Sense of Coherence Scale, had not a statistically significant association. These research findings are in agreement with the findings of Von Lengerke et al. (2004, 2007) which found no significant differences between normal-weight, overweight and obese respondents with regard to the Sense of Coherence and other psychological dimensions. However, Bjorvell et al. (1994) found an indirect relationship with the use of Karolinska Scales of Personality questionnaire. The questionnaire showed generally higher totals in most subscales in the group of obese people in comparison to the control group. Moreover,when morbid obesity is under study results indicate that a low SOC score was more common among subjects with a high BMI value. This finding is consistent with Antonovsky's theoretical framework that describes that SOC is influenced by degree of illness. A low SOC score, therefore, suggests that obese people require more support for health management. It is possible that obese but not morbid obese individuals retain an adequate reservoir of skills and internal resource to manage successfully with change and weight loss. This could also be a sign that some obese persons are eligible for interventions demanding a relative stable psychological background (Teixeira et al.,2015).

Age was another variable/feature that seemed to have statistically significant association with obesity. This finding is in agreement with the existing scientific knowledge (Fagermoen, Hamilton & Lerdal, 2015). Age is one factor that influences the energy consumption and its combination with environmental factors, such as lack of physical activity, can contribute to weight gain.

The fact that obesity was related to low socioeconomic suburbs is in accordance with previous findings that weight rises with age but is inversely related to SES at given ages (Skär, Juuso & Söderberg 2014).

Also, this study showed a statistically significant association of obesity with the existence of a relative with increased weight. The existence of hereditary obesity is scientifically proven as it

has been found that a percentage of people with obese parents shows reduced fat burning even before weight gain. It is possible that this family association with obesity is due partly to gene factors and partly in a similar way of life, like the way of eating and "patterns" of physical activity (Lobstein 2004). Another study, during the literature search, by Blisset et al. (2010) posed a psychological - behavioural parameter. The emotional overeating behaviour, by eating more foods rich in sugar without being hungry, may occur in children with negative mood when mothers use food for emotional reasons.

The authors of the Cochrane systematic review on psychological interventions concluded that people who are overweight benefit from psychological interventions, particularly behavioural and cognitive - behavioural strategies to enhance weight loss (Shaw et al., 2006, Milner et al.,2009). These were particularly useful when combined with diet and exercise strategies. The bulk of the scientific evidence supported the use of behavioural and cognitive - behavioural strategies. The authors found that other psychological interventions were less systematically evaluated for their efficacy as weight loss treatments (Milner et al., 2009).

There are still large gaps in our understanding of the role played by diet, exercise and psychological treatment to reduce weight.

Moreover, the long-term change in the quantity of food consumption and the type of food by the overweight person without causing reduction in energy consumption which is due to diet, and the relapse management in diet and physical activity behaviours to the levels before the intervention are ongoing challenges (Shaw et al.,2006, Milner et al.,2009).

The present study included individuals that had already decided to take initiative towards weigh loss. It is possible that these persons have a strong SOC. However this may not be the case among all non morbid individuals and this is a serious limitation of our study. Future studies on non morbid obese individuals should include larger and more representative sample for definite conclusions to be drawn.

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