

Alexithymia and obesity: controversial findings from a multimethod assessment

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Abstract. – OBJECTIVE: The aim of the study is to assess alexithymia levels in obese patients using a multimethod measurement (TAS-20 and TSIA) to evaluate both possible differences between the two instruments and their relationship with body weight.

PATIENTS AND METHODS: 54 obese patients, seeking surgical treatment, were enrolled. They completed a socio-demographic questionnaire, 20-items Toronto Alexithymia Scale and the Toronto Structured Interview for Alexithymia.

RESULTS: Data analysis showed a significant positive association between TAS-20 and TSIA total scores ($r=.28$, $p<.05$), but only the TSIA score was positively related to body weight ($r=.39$; $p<.001$). Multivariable linear regression models showed the predictive effects of TSIA total score ($\beta=.41$; $p<.001$) and difficulty in identifying feelings (DIF) ($\beta=.56$; $p<.001$) respectively on weight.

CONCLUSIONS: The findings showed a different association between body weight and alexithymia according to the instrument employed to evaluate alexithymia, supporting the importance of a multimethod assessment in some clinical conditions.

Key Words:

Alexithymia, Obesity, Multimethod assessment, TSIA.

Introduction

Obesity is a public health concern worldwide and over the past three and half decades, the prevalence of obesity has nearly doubled¹. This is alarming considering that obesity, defined as Body Mass Index (BMI) ≥ 30 kg/m², is associated with a marked increase in mortality² often caused by medical co-morbidities, such as diabetes and cardio-vascular disease^{3,4}. Obesity is a highly complex and multifactorial disease char-

acterized by genetic, biological, psychological, social, cultural and environmental factors. Recently the literature has focused on psychological factors associated with obesity and, in this field, several studies^{5,6} were attempted to identify the psychological factors that can limit the efficacy of weight loss treatment. In this direction, one of the most investigated psychological constructs is alexithymia⁷. The term alexithymia, literally no words for feelings, was introduced by Nemiah et al⁸, and it is characterized by difficulty in identifying subjective feelings, difficulty in verbally describing feelings to other people, restricted imaginal processes, and an externally orientated cognitive style. Several empirical studies^{9,10} have yielded evidence that alexithymia is associated with a variety of somatic disorders and have a negative influence on treatment outcomes. Much has also been written about the relation between alexithymia and eating disorders¹¹; on the other hand, however, it still remains difficult to say exactly how an emotion affects eating habits¹².

As specifically regards the relationship between alexithymia and obesity, the literature revealed contrasting results. In fact, as shown by a recent review⁷, some investigators indicated that alexithymia levels were significantly higher in obese patients than in controls¹³, in others studies such differences did not emerge¹⁴ whereas other research¹⁵ reported high alexithymia levels only in obese patients with psychopathological characteristics. It should be noticed that in all these studies, alexithymia was assessed by a self-report instrument, the 20-item Toronto Alexithymia Scale (TAS-20)¹⁶, the most widely used instrument to assess alexithymia. The TAS-20 shows the limitations of a self-report test: some individuals, with specific features, may not be able to accurately rate their deficits in emotional awareness on a self-report measure. Another limitation

is the absence of items directly investigating reduced fantasy and imaginal thinking that are both important features of the alexithymia construct¹⁷. To overcome these limitations, Bagby et al¹⁸ developed a new instrument for alexithymia assessment, the Toronto Structured Interview for Alexithymia (TSIA). This interview is composed by 24 items and has four subscales to assess the four salient facets of the alexithymia construct: difficulty in identifying feelings (DIF); difficulty in describing feelings (DDF); externally orientated thinking (EOT); and imaginal processes (IMP). The TSIA shows two principal strengths: a) it is the interviewer who attributes a score to each item, thus overcoming self-evaluation; b) the interviewer asks a set of prompts and probes for each question to explore the coherence of the responses given, obtaining a more accurate understanding of the meaning of the responses.

In this direction Taylor and Bagby¹⁹ have long recommended using a multimethod approach to assess this construct. Several groups of research used both, TSIA and the TAS-20, finding that the TSIA appears to be more sensitive for assessing alexithymia and yields more consistent results²⁰⁻²². This is in line with Eid and Diener²³ who recommend the use of a multimethod approach in investigating psychological constructs, recognizing both the shortcomings self-reports and the importance of an examination of the convergences and divergences between measures in the increment of the knowledge on constructs.

To our knowledge, there are few studies in the international literature using both TAS-20 and TSIA to assess alexithymia, and this is the first study in obese group seeking surgical treatment. Therefore, the aim of this study is to verify the convergent validity between TAS-20 and TSIA in obese populations. The hypothesis is to find differences in the sensibility and the ability to detect the intensity of alexithymia levels between the two instruments in this specific clinical population. A further aim is to investigate the relationship between alexithymia and obesity, as measured by body weight.

Patients and Methods

Participants and Procedure

Ethical approval for the study was obtained by the Ethical Committee of the Department of Dynamic and Clinical Psychology, Sapienza, University of Rome. All participants gave their

written informed consent. The work was carried out in accordance with the Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans.

Participants were 54 obese patients (Table I) scheduled for bariatric surgery and eligible according to international guidelines²⁴. Participants were recruited in the Bariatric Centre of Excellence, ICOT Hospital, in Latina; they were enrolled according to the following exclusion criteria: a BMI ranging below 30, the presence of acute and/or past psychiatric disorders or substance abuse, ignorance of the Italian language, presence of level of education less than eight years and antecedent bariatric surgery. The presence of the exclusion criteria was evaluated during a pre-operative psychological assessment carried out by clinical psychologists.

During the last day of psychological assessment before the surgery, each patient was asked to participate in this study. The patients who agreed to participate were asked to read and sign informed consent forms and to complete the questionnaires and then to have an interview in a quiet room. The interviews were audio-recorded and transcribed, and the scores were attributed by two independent evaluators (including the interviewer). In the same date, the patients' weights were measured on-site.

Table I. Socio-anamnestic characteristics' sample.

Variables	Mean	Standard Deviation
Age	42.78	10.89
Body Weight	117.75	22.47
Body Mass Index	42.56	6.16
	%	N
Educational level		
Secondary school	50%	27
High school diplomas	42%	23
Graduate	7.4%	4
Social Status		
Unmarried	31.5%	17
Married	53.7%	29
Divorced	14.8%	8
Employment Status		
Unemployed	27.8%	15
Employee	61.1%	33
Free lance	11.2%	6
Diabetes		
YES	94.4%	51
NO	5.6%	3
Hypertension		
YES	79.6%	43
NO	20.4%	11

Table II. Correlation between TAS-20 and TSIA.

	TAS-20 Total Score	TAS-20 DIF	TAS-20 DDF	TAS-20 EOT
TSIA Total Score	.289*	-.038	.280*	.558**
TSIA DIF	.280*	.063	.271*	.415**
TSIA DDF	.349**	.015	.400**	.517**
TSIA EOT	.174	-.065	.147	.435**
TSIA IMP	.136	-.159	.080	.488**

Note: TAS-20= 20-item Toronto Alexithymia Scale; TSIA= Toronto Structured Interview for Alexithymia; DIF= difficulty in identifying feelings; DDF= difficulty in describing feelings; EOT= external oriented thinking; IMP= imaginal processes. * $p < .05$; ** $p < .001$

Measures

A socio-demographic Questionnaire was built ad hoc to collect information about participants' age, gender, educational level and presence of any psychological treatment in the past. On the questionnaire the investigators noticed the patients' weights (measured on site).

The 20-items Toronto Alexithymia Scale (TAS-20)^{16,25} consists of 20 items and is structured according to three factors: DIF, difficulty identifying feelings; DDF, difficulty describing feelings; EOT, externally oriented thinking. Each item is rated on a five-point Likert scale, ranging from 'strongly disagree' (1) to 'strongly agree' (5). This instrument provides both a total score and a score for each subscale. The Italian version of the TAS-20 showed a high internal consistency (Cronbach's alpha=0.81)²⁵.

Toronto Structured Interview for Alexithymia (TSIA)^{18,26} it comprises 24 items subdivided into four subscales (each with six items): DIF, difficulty in identifying feelings; DDF, difficulty describing feelings; EOT, externally oriented thinking; IMP, imaginal processes. Each question is scored on a three-point Likert scale ranging from 0 to 2 by the interviewer. The total TSIA score and its four factors have yielded acceptable levels of inter-rater, internal, and retest reliability in the Italian version (Cronbach's alpha=0.86)²⁶.

Statistical Analysis

The statistical analyses were conducted using the Statistical Package for Social Science (SPSS) version 25 for Windows (IBM, Armonk, NY, USA). Data were reported as frequencies and percentages for discrete variables, and as means and standard deviations for continuous variables. In order to preliminarily verify the homogeneity between women and men, a one-way ANOVA was performed for continuous variables whereas

the Chi-squared test² was performed for discrete variables.

Pearson's correlation test was used to verify the association between both TAS-20 and TSIA and between alexithymia levels and weight. The one-sample *t*-test was conducted to compare TAS-20 and TSIA scores obtained in the present study with those of the Italian general population. Moreover, a set of multiple regression analyses was performed in order to investigate possible predictors of body weight, including alexithymia scores, age and educational level (years of study). All the variables were entered simultaneously. $p < .05$ was considered significant.

Results

No significant differences in mean age, BMI and educational level were found according to gender (Age $F = .06$; $p = .80$; BMI $F = 3.65$; $p = .06$; Educational level $\chi^2 = 1.34$; $p = .51$).

Table II shows the correlation between TSIA and TAS-20 total and factor scores.

Correlational analysis between alexithymia and body weight showed that, as regards the TSIA, both total and all factors scores except DDF were significantly and positively related to weight (total $r = .39$; $p < .001$; DIF $r = .48$; $p < .001$; EOT $r = .30$; $p < .05$; IMP $r = .29$; $p < .05$), whereas as regards the TAS-20 only DIF was significantly and negatively related with weight ($r = -.27$; $p < .05$).

One-sample *t*-test showed that TAS-20 mean scores reported by the present group (mean=39.1) were significantly lower than those reported by general population (mean=44.7) ($t_{53} = -3.45$; $p < .01$). Conversely, as regards TSIA mean scores, the values reported by the present sample (mean=23.0) were significantly higher than those of general population (mean=18.4) ($t_{53} = 4.27$; $p < .01$).

A set of multiple linear regression models was performed using body weight as dependent variable and age, educational level and TAS-20 total scores as predictors. The same model was repeated replacing the TAS-20 total scores with TSIA total scores as predictors. The model with TAS-20 was not significant ($p=.43$), whereas the model with TSIA was significant and predicted the 19% of body weight ($R^2=.19$; adjusted $R^2=.14$; $p<.001$) with only TSIA total score as significant predictor ($\beta=.41$; $p<.001$). Due to the significance of the TSIA total score as predictor, the regression analysis was repeated using TSIA factors scores as predictors. This model explained 29% of body weight ($R^2=.29$; adjusted $R^2=.20$; $p<.001$) with TSIA difficulty in identifying the feeling as significant predictor ($\beta=.56$; $p<.001$).

Discussion

The principal aim of this study was to examine the convergent validity between the two instruments for the evaluation of alexithymia levels, the self-report TAS-20 and the clinical interview TSIA, in a clinical population of obese patients seeking surgery treatment.

The correlation between TSIA and TAS-20 total scores is significant, but not strongly ($r=.28$; $p>.05$), whereas the correlations are stronger among TAS-20 subscales and TSIA subscales, except for difficulty of identifying feeling (DIF) of TAS-20. This absence of correlation for the DIF of TAS-20 is unexpected because the Italian validation of TSIA shows strong correlations between all factors of TAS-20 and TSIA. Di Trani et al²⁷, however, show a lack of correlation for TAS-20 DIF and TSIA in a subgroup of subjects with hypertension; this population is more similar to our sample and we can speculate that people with somatic disorders, like obese people, have more difficulty recognizing their emotional difficulties through a self-report instrument.

Imaginal Processes factor is present only in the TSIA instrument and, as we expected, is strongly related with TAS-20 EOT. This result is consistent with other studies showing the same result^{26,28} and as reported in the literature; though the TAS-20 does not have any specific scale for fantasy assessment, its EOT subscale appeared likely to partially cover this characteristic²⁹.

As regards the association between weight and alexithymia, as specifically evaluated through the two instruments, some differences emerged. In

fact, in line with our hypothesis, TSIA total and factors scores were significantly and positively related to weight, showing that higher difficulties in emotion regulation are associated with higher weight. On the contrary using the TAS-20 only a negative significant association between DIF and weight emerged. Furthermore, the set of multiple linear regressions showed that only TSIA total ($\beta=.41$; $p<.001$) and DIF scores ($\beta=.56$; $p<.001$), were significant predictors of body weight, whereas no significant predictors were found using the TAS-20 scores. These results may confirm the hypothesis about the positive relationship between body weight and alexithymia. We can assume that obese people have more difficulty to manage their emotions and may attempt to regulate emotional states behaviorally, rather than cognitively, through dysfunctional eating behaviors³⁰. In the literature, the relation between alexithymia and weight was discussed but is not yet clearly established; in all the studies, alexithymia was assessed through TAS-20. The use of TAS-20 may affect the results and it does not allow one to highlight the relation between weight and alexithymia level. This result may indicate that people respond very differently to the self-report compared to an interview: the clinical interview seems to show a greater level of alexithymia compared with self-report. Another study²¹ with a clinical sample consisting in anorexic girls and their parents, shows that the TSIA, compared with the TAS-20, identified a much higher level of family alexithymia level for all of the factors: in the total score, the mean family alexithymia index was very high in some families (13%) only when using the TSIA measurement, while no families had low alexithymia scores. The opposite occurs when using TAS-20. Authors say that these findings highlighted the subjects' inability to detect their emotional difficulties, perhaps linked to a defense style based on external orientated thinking and concrete factual problem solving. We can assume that also our subjects are unable to detect their emotional difficulties, through the self-report measure, or they lie at TAS-20 to give a positive image to be eligible for bariatric surgery.

In this light it can be also useful to compare the alexithymia mean scores of the present sample with the scores shown by the Italian general population. The obese patients showed higher levels of alexithymia, as assessed by the TSIA, than the Italian general population. In contrast, using the TAS-20, the obese patients obtained significantly

lower alexithymia scores than the general population. Therefore, we can suppose that TSIA may be a more sensitive tool in assessing alexithymia in this clinical population, overcoming subjects' negation tendency and social desirability. Therefore, these findings underline the importance of a multimethod assessment for the evaluation of alexithymia, especially in some clinical contexts. Moreover, most studies¹³⁻¹⁵ with obese people were carried out in a bariatric center, during psychological assessment and this context could appear judgmental for people, who could alter, consciously or unconsciously, their answers.

The present findings need to be interpreted in light of some limitations. Our sample consists only of 54 patients recruited in a single bariatric center; this does not allow one to consider our group as a representative sample of the general population of obese patient seeking bariatric surgery. Another limitation is that the assessment was carried out during the psychological interviews to evaluate eligibility for bariatric surgery. This context might have been perceived as judgmental and this might have increased the participants' tendency to lie. Furthermore, the absence of control group could be considered an important limitation. Finally, it would have been interesting a psychological evaluation after bariatric surgery and we hope to have access to this data in the future.

Conclusions

This is the first study where TSIA was used to assess alexithymia in obese patients. These findings encourage the use of this interview in this clinical population to confirm these preliminary results.

Conflict of Interest

The Authors declare that they have no conflict of interests.

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