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THE RELATION BETWEEN ORAL, MASOCHIST AND RIGID CHARACTERS TRACES WITH OVERWEIGHT AND THE IMPACT ON THE WEIGHT LOSS PROCESS

Public Health

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ABSTRACT

Efficient interventionist proposals for overweight and obesity depend on how the person feels, thinks, and acts. This is possible through the body analysis, a technique that, based on the structural forms of the body, allows the determination of individually percentages of characters traces (schizoid, oral, psychopathic, masochist and rigid). The objective of this study was to verify the relation between overweight or obesity and characters traces. This is an observational, transverse, retrospective study, described with secondary data obtained from the records of a training school in body analysis between 2018 and 2022. A total of 838 people participated in this study, being excluded those participants who did not filled out their height and weight. The Map of Characters instrument was used to identify the profile of the body identification; the sociodemographic profile and habits were evaluated by an original questionnaire, and the quality-of-life contents, using the WHOQOL-BREF. Individual BMI was calculated and three groups were determined: eutrophic ((18,5 ≥ IMC < 25); overweight (25 ≥ BMI < 30) and obese (BMI ≥ 30.0). With 95% confidence intervals, the variables were described from frequency distributions, media, and standard deviation in the univariate analysis. In the bivariate analysis, the Chi-square and the Kruskall-Wallis test were used. The variables that, at this stage, presented a descriptive level (p-value) up to 0.20 were selected for the multiple analysis, which used the Multinomial Logistic Regression model and estimated the adjusted odds ratios (OR) with respective (OR). The Deviance test and Pseudo-R 2 of Nagelkerke's evaluated the quality of the setting. The IBM SPSS software version 23.0 was used in all analyses. It was noticed an isolated and combined increase in the percentage of Oral and Masochist traces in relation to the overweight and obese groups, while the Schizoid, Psychopathic and Rigid traces had their percentages decreased. The chances of overweight and obesity were significantly higher in individuals with below average quality of life and a higher percentage of emotional dependence.

KEYWORDS

character traces, obesity, overweight, body analysis, weight excess

INTRODUCTION

In recent decades, the prevalence of obesity has tripled worldwide, reaching pandemic dimensions in all ages and socioeconomic levels [1,2,3]. In 2016, almost 2 billion adults were overweight, and of these, 650 million were obese [4]. It is believed that by 2030, 58% of the world's adult population will be overweight, totaling 3.3 billion individuals [4].

Besides causing health damages, such as development of comorbidities [5] and high mortality [6]. Obesity also impacts the economy, corresponding for 2% to 7% of total health care spending in developed countries, and may reach 5.5 billion pounds in the United Kingdom by 2050 [4]. In Brazil, a total of 2.1 billion dollars are spent with comorbidities every year. [7]. It is observed that the use of health services and the loss of productivity is directly proportional to the percentage of overweight or obese people [4].

Thereby, obesity has gained prominence on the international public agenda, characterized as an event of global proportions and growing prevalence. This prevalence has been attributed to several biopsychosocial processes, in which the environment, and not only the individual, takes a strategic place in the analysis of the problem and in the proposals of interventions [8].

Despite observing a considerable increase in the mobilization of health professionals of knowledge and skills on obesity control [9], the low effectiveness of individual interventions dictated on biologic and curative care models enforce reflections on the ways for the innovation of care practices [10]. It is good to emphasize that these approaches have favored biomedical interventions traditionally restricted to the biological dimension and focused on the treatment of an installed disease that, by itself, have not been effective in reducing its prevalence [8].

This is a difficult scenario to overturn and that demands to articulate individual care with actions that affect the obesogenic environment [11]. With this in mind, understanding how the overweight or obese person feels, thinks, and acts is extremely important. This understanding is possible by the percentages of the character traces: Schizoid, Oral, Psychopathic, Masochist, and Rigid, that the person has in the body. This percentage can be measured by the body analysis, a technique developed by Brazilian researchers [12].

Body analysis identify, from the body structure, behavioral and emotional standards which makes it possible for the person to understand how his mind works [12,13], even regarding the weight excess [14]. Knowing how a person functions and the real reason that makes the person overweight, will make it possible to understand how difficult it will be to eliminate weight in environments that can cause anxiety, compulsive eating and, consequently, fat accumulation [14].

With this perception, both the overweight individual and the professionals that keeps track of them will be able to follow new directions for weight loss, since it allows people to be aware of why they are overweight or cannot keep themselves thin, and also having control of their weight loss in a permanent way [13,14].

In this context, for the process of eliminating excess weight, it is important to understand the function of the weight in the person's life and identify the related character traces. Thus, the objective of this study was to verify the relation between overweight or obesity and the following character traces: Schizoid (S), Oral (O), Psychopath (P), Masochist (M), and Rigid (R).

METHODOLOGY

This is an observational, retrospective, descriptive study with data from the records of a body analysis training school. These data are from January 1, 2018 to February 28, 2022. Since the school records electronically the results of the Body Analysis and the completed forms, the data were transcribed to an Excel spreadsheet to be evaluated. This study was approved by the Comitê de Ética em Pesquisa do Instituto de Ciência e Tecnologia da Universidade Estadual Paulista (Unesp), (Unesp), by "Parecer" no. 5,411,261/2022.

The research included men and women over of 18 years old, of any ethnic who had their body profile evaluated through Body Analysis [12] by a group of certified analysts selected and trained by the school. Those who did not fill out the fields of height and weight were excluded from this study. The Character Map was used to identify the body profile. The instrument was developed to identify the percentages of each character trace based on the body structure of the person [12]. This instrument consists of a graphic tool composed of six lines corresponding to the parts of the body analyzed (head, eyes, mouth, trunk, hips and legs) and five columns corresponding to the character traces (Schizoid, oral, Psychopathic, Masochist and Rigid).

To analyze the sociodemographic profile and habits, a questionnaire was applied containing information about gender, age, marital status,

education, skin color, height, and weight. To assess the quality of life index, was used the validated version of the World Health Organization Quality of Life Instrument simplified (WHOQOL-BREF) developed by the World Health Organization [15].

The body mass index (BMI) was calculated by the ratio between body mass (in kilograms) and the square of the height (in meters) and the individuals were separated into three groups: eutrophic ($18.5 \geq BMI < 25$); overweight ($25 \geq BMI < 30$) and obese ($BMI \geq 30.0$).

In the statistical processing of the data, univariate, bivariate and multiple analyses were led. In the univariate analysis, frequency distributions were used to describe the qualitative variables and measures of center (media) and variability (standard deviation) to describe the quantitative variables. It was also estimated 95% confidence intervals for the average percentages of the trace character which estimates were presented graphically.

In the bivariate analysis, BMI was considered the dependent variable and the other sociodemographic variables, health conditions, and character traces were independent variables of the study. Bivariate analyses were led to identify the variables associated with the dependent variable. The prevalence of overweight and obesity were compared, according to categories of the qualitative independent variables, using the Qhi-square test. To compare the levels of the quantitative independent variables according to the dependent variable Kruskall-Wallis test was conducted. The variables that at this stage showed a descriptive level (p-value) up to 0.20 were chosen for multiple analysis. The quality of the model adjustment was evaluated using the Deviance test and Nagelkerke's Pseudo-R 2. All analyses were performed using the IBM SPSS software version 23.0.

A total of 838 people participated in the study, 77.4% were female. The participants ranged from 19 to 75 years, an average rate of 42.3 years, and the majority (64.2%) were in the 30 to 49 age group. Most of them said they had a higher level of education and declared themselves to be white. The estimated prevalence of overweight and obesity were 32.9% and 21.0%, respectively. More than 50% of the participants noticed their quality of life to be below average, and more than half of the people said that they had been diagnosed with or had experienced some incident of mental health disorders (MHD). As for the predominant character traces, the most frequent in the sample were the Oral (43.4%) and Rigid (39.3%) (Table 1).

Table 1: Distribution of individuals according to sociodemographic and health conditions (n=838).

Variable	n*	%
Sociodemographic characteristics		
Gender		
Female	572	77,4
Male	167	22,6
Age group		
Under 30	91	11,0
30 to 49 years old	533	64,2
50 to 59 years old	148	17,8
60 years or older	58	7,0
Marital status		
With partner	430	51,7
Without partner	402	48,3
Education		
Up to elementary school	30	3,6
High School	143	17,2
Higher education	321	38,6
Graduated	337	40,6
Skin Color		
Yellow	49	5,9
Brown	230	27,6
White	499	59,8
Black	56	6,7
Health conditions		
BMI		
Eutrophic	386	46,1
Overweight	276	32,9
Obese	176	21,0
Quality of Life (WHOQOL-Bref)		

Higher or equal average (55.0)	361	43,1
Below average (55.0)	477	56,9
Suicidal Ideation		
No	600	71,6
Yes	238	28,4
Diagnosis or an episode of TSM		
No	353	42,1
Yes	485	57,9

*Totals vary due to the loss of information; BMI: Body Mass Index; WHOQOL-Bref: World Health Organization Quality of Life-Bref; MDI: Major Depression Inventory; TSM: Mental Health Disorder.

Table 2 shows the results of the bivariate analysis, comparing the prevalence of BMI categories (eutrophic, overweight, and obese), according to qualitative independent variables. Through the Chi-square test, it was found that the following variables are associated with BMI, considering a significant level of 0.20: sex, age group, quality of life, and suicidal ideation. These variables were selected for the multiple models.

It was noted that the average of the isolated percentage of the coldest traces, Schizoid (E) and Psychopathic (P), as well as the average rate (E + P) and (E + P + R) had a significant decrease in the overweight and obese groups. In the opposite way, it was observed that the percentage of the most sentimental traces Oral (O), Masochist (M), and combined (O + M) increased significantly in these groups. When the percentage of the Rigid (R) trace character was added in this group, it was also possible to observe a significant increase in the percentages. There was also a significant increase and decrease in the average percentages of emotional dependence and lack of ambition, respectively.

Table 3 shows the average values and standard deviation of the quantitative independent variables according to the BMI categories (Eutrophic, Overweight, and Obesity). The results of the kruskall-wallis test pointed out that all variables are significantly associated with BMI. Therefore, all of them were selected for the multiple models.

The results of the multiple analysis are presented in Table 4, in which was found relevant quality indicators of proper adjustments (Deviance Test: p-value = 0.776 and Pseudo R 2 = 0.461). After adjustments, the following variables remained associated with BMI, at the 0.05 level: Oral, Masochist, Rigid, and Quality of Life (QL). The OR estimates suggest that: (a) for every 1 unity increase in the percentage of the Oral trace, the chance of being overweight increases by 11% and the chance of obesity; (b) for every 1 unit increase in the percentage of the Masochist trace, the chance of being overweight increases by 25% and the chance of obesity by 40%; (c) for each 1 unit increase in the percentage of the Rigid trace, the chance of being overweight increases by 9% and the chance of obesity by 9%. (d) the chances of overweight and obesity in individuals with QL below the average are, respectively, 1.09 times and 1.79 times of those with QL greater or equal to the average.

Table 2: Prevalence of overweight and obesity according to sociodemographic variables and health conditions

Variable	BMI			Value -p*
	Eutrophic	Overweight	Obese	
	n (%)	n (%)	n (%)	
Gender				0,001
Female	283 (49,5)	168 (29,4)	121 (21,2)	
Male	57 (34,1)	72 (43,1)	38 (22,8)	
Age group				0,039
Under 30	48 (52,7)	25 (27,5)	18 (19,8)	
30 to 49 years old	254 (47,7)	168 (31,5)	111 (20,8)	
50 to 59 years old	61 (41,2)	58 (39,2)	29 (19,6)	
60 years or old	20 (34,5)	22 (37,9)	16 (27,6)	
Marital status				0,224
With partner	185 (43,0)	149 (34,7)	96 (22,3)	
Without partner	197 (49,0)	125 (31,1)	80 (19,9)	
Education				0,230
Up to elementary school II	8 (26,6)	11 (36,7)	11 (36,7)	
High School	68 (47,5)	47 (32,9)	28 (19,6)	
Higher education	148 (46,1)	100 (31,2)	73 (22,7)	
Graduated	160 (47,5)	114 (33,8)	63 (18,7)	

Skin Color				0,513
Yellow	24 (49,0)	15 (30,6)	10 (20,4)	
Brown	120 (52,2)	67 (29,1)	43 (18,7)	
White	217 (43,5)	173 (34,7)	109 (21,8)	
Black	24 (42,9)	19 (33,9)	13 (23,2)	
Health conditions				0.052
Quality of Life (WHOQOL-Bref)			0,052	
Higher or equal the average	229 (48,0)	162 (34,0)	86 (18,0)	
Below average	157 (43,5)	114 (31,6)	90 (24,9)	
Suicidal Ideation				
No	288 (48,0)	184 (30,7)	128 (21,3)	
Yes	98 (41,2)	92 (38,6)	48 (20,2)	
Diagnosis or an episode of TSM				0,243
No	171 (48,5)	105 (29,7)	77 (21,8)	
Yes	215 (44,3)	171 (35,3)	99 (20,4)	

*Chi-square test; Totals vary due to loss of information; BMI: Body Mass Index; WHOQOL-Bref: World Health Organization Quality of Life-Bref;MDI: Major Depression Inventory; TSM:Mental Health Disorder.

Table 3: Percentages of character traces, emotional dependence, lack of ambition according to Body Mass Index (BMI) levels.

Variable	IMC			Valor-p*
	Eutrophic	Overweight	Obese	
	Avarage (d.p)	Avarage (d.p)	Avarage (d.p)	
% Chacteres Traces				
Schizoid	16,6 (6,9)	10,8 (4,5)	8,8 (3,4)	<0,001
Oral	24,4 (5,5)	27,2 (6,1)	30,2 (6,0)	<0,001
Psychopathic	17,2 (4,6)	15,7 (4,7)	13,9 (4,7)	<0,001
Masochist	14,3 (5,5)	20,2 (6,2)	23,5 (5,6)	<0,001
Rígid	27,4 (5,0)	26,1 (5,0)	23,7 (5,4)	<0,001
Schizoid + Psychopathic	33,9 (8,1)	26,5 (6,7)	22,7 (6,0)	<0,001
Schizoid + Psychopathic + Rígid	61,3 (8,0)	52,6 (7,8)	46,4 (7,1)	<0,001
Oral + Masochist	38,7 (8,0)	47,4 (7,8)	53,6 (7,1)	<0,001
Oral + Masochist + Rígid	66,1 (8,1)	73,5 (6,8)	77,3 (6,0)	<0,001
Emocional Depencency	52,6 (7,7)	60,7 (6,9)	65,7 (6,0)	<0,001
Lack of Ambition	44,7 (6,5)	41,8 (7,1)	37,6 (6,4)	<0,001

*Kruskall Wallis test; d.p: standard deviation.BMI: Body Mass Index.

Table 4: Multiple Analysis Results: Rate of chances adjusted by Multinomial Regression Model

Variável	IMC*			
	Overweitght		Obesity	
	ORa [IC95%]	Valor-p	OR a[IC95%]	Valor-p
% CharacterTraces				
Oral	1,11[1,07-1,14]	<0,001	1,25[1,19-1,31]	<0,001
Masochist	1,25[1,20-1,30]	<0,001	1,40[1,33-1,48]	<0,001
Rígid	1,09[1,05-1,14]	<0,001	1,09[1,03-1,16]	0,002
Quality of life				
≥ avarage	1,00		1,00	
Below avarage	1,09 [0,76-1,57]	0,637	1,79[1,13-2,85]	0,013

*Reference category: Eutrophic. Model adjusted by age range. OR a: Adjustment of rate of changes; CI: Confidence Interval. Model Quality of adjustment: Deviance Test (p-value = 0.776). Pseudo R 2 = 0.461.
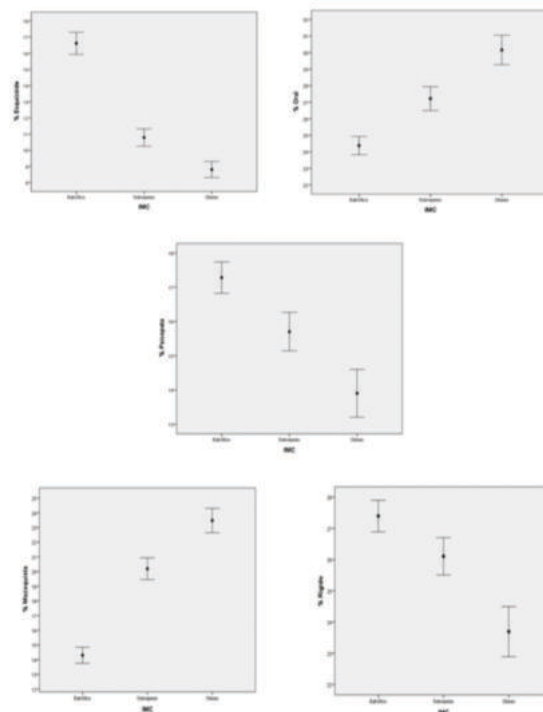
Figure 1: Average Percentage of the Character Traces - 95% CI

DISCUSSION

According to the authors' evaluation, this is the first research that relates overweight and obesity with the character traces. This study revealed that the percentage of the Oral and Masochist character traces has a direct positive relation with overweight and that the Rigid trace has an indirect positive relation.

It was observed in the bivariate analyses that all 5 characters traces were significantly associated with BMI. When compared with the eutrophic group, the Oral and Masochist character traces increased their percentages significantly in relation to the overweight and obese groups, both when evaluated alone and in the combined way. When compared with the eutrophic group, the Oral and Masochist character traces increased their percentages significantly regarding the overweight and obese groups, both when evaluated alone and in the combined way.

The Schizoid, Psychopathic and Rigid traces had their percentages decreased when evaluated separately or together. It is emphasized that, though the Rigid character trace decreases in percentages in an isolated way and in combination with the Schizoid and Psychopath traces, that when analyzed in combination with the Oral and Masochist traces, it potentiates the increase of the percentages in the overweight and obese groups.

In the multiple analysis, a positive relation was also verified between the BMI and the percent of the Oral, Masochist, and Rigid traces, being the character Masochist the most related. For each unit increase in the percentage of this trace, there was a 25% and 40% increase in the probability of overweight and obesity, respectively. The probability of being overweight or obese was also seen in the Oral trace, with an increase of 11% and 25% respectively; while in the Rigid trace, 9% for both overweight and obesity. The Schizoid and Psychopath traces lost significance in this multiple model.

These findings indicate that the Masochist trace, along with the Oral and Rigid, play an important role in overweight people. These results were already expected, as when it comes to the relation with overweight, each character trace will behave in a different way in an attempt to avoid the basic pains of its trace: rejection, abandonment, manipulation, humiliation, and betrayal [14].

The Schizoid character trace had its body and mind shaped to avoid contact with people and the "outside world" as much as possible, since it was built up from the pain of rejection [16], so the excess weight will

have no function or usefulness for this trace [14]. On the other hand, the Oral character trace can be seen as the opposite of the Schizoid character trace, his body and mind were shaped to have the attention of people, since it was built up from the pain of abandonment [16]. Not to feel alone, be seen, noticed, and get attention from people, their body becomes "bigger". This way, the excess weight will be useful and starts to have a function, to be the spotlight [14].

The mind and body of the Psychopathic character trace was built up from the pain of manipulation [16], and because it is a more rational and negotiating trace, won´t tend to seek excess weight [14]. Whereas the Masochist trace had its mind and body built up through the pain of humiliation. During the formation of this trace, the child learns that people have expectations of him or her, and in order not to disappoint them, understands the need to be strong [16], therefore, the stronger the person is or seems to be, this person will be more appreciated. In this context, excess weight will have a function, the strength [14].

The Rigid character trace had its mind and body built up from the pain of betrayal, exchange, or exclusion [16]. When she experiences some kind of betrayal, either in the parents' marriage or in some kind of sexual abuse, especially in the childhood, the child understands she/he need to avoid his sexual energy, it is better to be "bigger" and become "less attractive", according to society´s standards. Therefore, the excess weight will have the function of protection [14].

In this scenario, the Oral, Masochist and Rigid character traces, in order to avoid the basic pain of their traces, will seek in the excess of weight the functions of significance, strength, and protection, respectively. The three roles of excess weight in a person's life and the related character traces, were also reported in a study conducted by Maia and Reis [13].

The three roles of excess weight in a person's life and the related character traces, were also reported in a study conducted by Maia and Reis [13]. In this study, it was also seen that 40% of the participants had an average weight loss of 20 kilos just by taking care of their character traces, after becoming aware and in control of the role of excess weight in their life.

It is worth saying that the awareness of the function of overweight is possible through Analysis [13, 14] and the control, can be helped with the use of the Master Key tool, which consists in identifying what causes the basic pain of the trace, whether in environments, situations, or relationships, and, based on this, define actions so that necessary adjustments are made to avoid these pains and activate their resources [14].

In this context, eliminating excess weight has more to do with the "can do"; than with "want to" [14]. Then, the social beliefs that obese patients are lazy, without willpower [17], resistant, undisciplined, who don't or won't take care of themselves [18].

In addition, the idea that the weight is easily changeable and that its successful elimination is a simple matter of personal effort [19], as exposed by the social media, does not turn out to be true. These stereotypes are common in Western society, making overweight and obese people with overweight and obesity are vulnerable to social injustice and have their quality of life (QoL) [19].

 In this study, it was observed that the chances of being overweight and obesity were significantly higher in individuals with below-average QoL. QL can be related to emotional dependence and lack of ambition. The Masochist and Oral character traces are the ones that have the greatest tendency to express emotional dependence in their relationships. On the other side, the ambition of these traces depends on a provocation to manifest themselves, to seek to improve their quality of life, so they may tend to have a lower QoL.

It was also found that the percentage of emotional dependence increased and the lack of ambition decreased significantly in the overweight and obese groups.

Living in environments where the traces resent and bring back their basic pains of formation makes the tendency to emotional dependency exposes. In these environments, people may feel repressed, unable to express their feelings, which can make it difficult to lose weight in a

definitive way [13], since there is a tendency to use food to avoid conflict [20].

Thus, the food is used as a way to supply an emotional need due to lack of communication between the family [21], that can reinforce the bonds of emotional dependence sustained by food [22]. Being "fat" sustains a family loyalty that makes hard the process of weight loss, since it reinforces the feeling of belonging to the family´s identity, being, therefore, an important influential factor in excessive weight gain [21].

The discoveries of this study may explain the difficulty that many people have to lose weight or stay thin for a long period of time [23, 24]. In addition, they can justify the failure of most of the therapeutic tools used to combat overweight [21]. This failure resulting from low adherence to treatment generates in the professionals who deal with overweight frustration, as well as a feeling of powerlessness and unpreparedness to deal with the complexity that is involved in obesity [25].

In this scenario, having professionals who know how overweight people think, act, and feel as well as understand the functions that weight plays, can be crucial in combating this condition.

When dealing with the elimination of excess weight, it is important to pay attention to the character traces, since they build the shape of the body, define the biotype and explain how people feel, act, and think.

The character traces that had a positive relation with overweight were Masochistic, Oral, and Rigid, that probably to avoid their basic pains, the excess weight became a function of strength, emphasis, and protection, respectively. This way, people become aware of why they unconsciously "need" the excess weight and can unconsciously choose to take control over the elimination of this excess in a definitive way.

This study brings in this context, having a body analyst on the multi professional team that people with excess weight can be essential for a definitive elimination of weight.

This study presented as a limitation the use of an instrument for data collection that is in the process of scientific validation. However, in a pilot study, it was possible to analyze that the Character Map instrument presents clinical validity through the satisfaction affirmed by the people who went through the process of body analysis. It is noteworthy that this is the first study that relates character traces to overweight and obesity, besides presenting a sample size of great magnitude.

Finally, it is noticeable that the high prevalence of obesity and overweight today suggests that even the most successful treatment may have limited benefits if it relies on the traditional medical type. Therefore, alternatives to the conventional approach, such as body analysis, should be considered.

The results found in this study may help in the conduction of directed actions to the elimination of overweight in the population, which may increase the effectiveness of interventions and, consequently, change the current prevalence of this condition.

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