

**EMOTIONAL
PERCEPTION OF
FOOD BY NUTRITION
AND GASTRONOMY
STUDENTS**

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Abstract: This study aimed to evaluate the emotional perception of visual stimuli of food content as well as susceptibility to eating disorders in students of Gastronomy, Nutrition, and other courses. The study had the participation of 60 students, twenty individuals of each group. To assess the emotional perception were presented 70 visual stimuli of different contexts selected from the International Affective Picture System (IAPS), including 20 stimuli of food content. The appreciation of the stimuli was performed through the Self-Assessment Manikin scale, which evaluated the affective dimension valence, arousal and dominance. To evaluate eating behavior, it was used the Eating Attitudes Test (EAT-26) and The Three Factor Eating Questionnaire (TFEQ-R21) and for evaluating the presence or absence of alexithymia it was used the Toronto Alexithymia Scale was (SAT-26). For the Gastronomy students group the figures of food contents were considered so pleasant and raised as arousal as the high and low-arousal pleasant stimuli. For the other groups the low-arousal pleasant figures were considered more pleasant than the figures of food content and raised less arousal than high arousal pleasant pictures. There was no difference in the affective dimension of dominance. In terms of susceptibility to eating disorders development, the three student's groups behaved similarly, showing no degree of eating behavior considered suggestive of disorder. Moreover, it was evident the high incidence of alexithymia in the three groups. In summary, we observed the difference in the emotional perception of food in Gastronomy students who showed a more intense and emotionally significant relationship with their work object compared to students of Nutrition, which also work with the same content.

Keywords: Emotional perception, food, eating behavior, undergraduate students.

INTRODUCTION

The present study aimed to explore the emotional perception of visual stimuli of food content in students of Gastronomy, Nutrition, and other students of non-food courses (control group) as well as to explore the eating behavior and susceptibility to developing eating disorders of these students groups. There are already studies on eating behavior and prevalence of eating disorders in undergraduate students of Nutrition, Physical Education and Psychology, but it is not currently in the literature, studies with students of Gastronomy, possibly because it is a new course in the market. As for emotional perception, there are no reports of studies with these professions.

THEORETICAL FRAMEWORK

Throughout evolution, we can realize the importance of emotions for the maintenance of the species and they have changed from a simple reflexive affective response to a complex survival mechanism (VOLCHAN, 2003). Concomitantly with this evolution, a perceptual system that mediates behavior was developed providing responses to appetitive and aversive stimuli. The perception of these stimuli includes the emotion that has as its main function the preparation for action, promoting the activation of motivational systems (VOLCHAN, 2003). In short, emotions activate the motivational system that will drive the individual to act.

External and internal environmental stimuli are considered to circulate in an affective space delimited by the affective dimension of valence and alertness (LANG, BRADLEY & CUTHBERT, 1999). Valence stimuli may range from pleasant/pleasant to unpleasant/unpleasant and alertness may range from high alert / exciting to relaxing (LANG, BRADLEY & CUTHBERT, 1999). The activation and relationship of valence

and emotional alert systems modulate and determine the behavioral responses of individuals, affecting the establishment, maintenance, and modification of actions. Studies point out that visual stimuli are capable of provoking emotional reactions that in turn evoke behaviors.

Perception of emotional stimuli is subjective and is associated with cortical and subcortical areas. In some psychopathological states, structural or functional changes may occur in specific brain regions that compromise this function. In cases of functional changes in the amygdala, nucleus located in the temporal lobe, the perception of emotional stimuli that raise high alert - whether pleasant or unpleasant - is compromised (DOLCOS & CABEZA, 2004). In addition to the amygdala, other cortical areas participate in an integrated way in the emotional process, such as the prefrontal cortex, which promotes the perception and evaluation (or appreciation) of events with emotional content.

Food-related stimuli can provide emotional responses as well as activate a motivational system that mobilizes the search for food, either out of need or pleasure. The food process in humans involves a neurobiological system that has the hypothalamus as the center of food regulation and control. Leptin, the main hormone involved in the eating behavior process produced by adipose tissue and other sites such as the gastric epithelium, binds to neuron receptors present in the arcuate nucleus of the hypothalamus, and when this binding occurs, this nucleus is stimulated. Once stimulated, the arcuate nucleus makes projections to the lateral hypothalamic area implying the inhibition of eating behavior. On the other hand, the same neural structures act to stimulate eating behavior by inhibiting this stimulation circuit (BEAR & CONNORS, 2002). Thus, although they are the same neural structures involved in eating behavior,

what will determine whether inhibitory or stimulating behavior will occur are the actions of neurons and receptors that are compromised in the food intake process.

Another system that actively participates in the eating behavior process is the tonsillar circuit. The amygdala sends projections to the hypothalamus and emits emotional responses, such as feelings of pleasure or displeasure, influencing related responses from the vegetative nervous system - such as satiety or hunger - to the field of cognition - such as food planning and choice (BEAR, CONNORS, 2002). Thus, the emotional system directly influences from more primitive responses such as eating in the face of hunger, to the response of avoiding food, even in the face of deprivation, by conscious and individual choice.

Feeding is one of the first forms of interaction between a baby and other people, representing a means of establishing the initial bond with the outside world. In addition, the act of eating and, in the same sense, the perception of food taste directly involves the limbic system that processes emotions and memory as well as can activate intense pleasure responses linked to dependence (SHEPHERD, 2012). According to the Brazilian standardization of the International Affective Picture System (IAPS; LANG, BRADLEY & CUTHBERT, 1999), composed of figures from different contexts, food-containing figures are appreciated as pleasant stimuli and high alertness (RIBEIRO et al., 2005). Still, in the field of emotional relationship with food stimuli, the study proposed by Natacci & Ferreira (2011), indicates a direct relationship between food and emotions so that mood, as an emotional state, can influence the choice of food, as well as Consumption of certain foods, can change the emotional state of individuals. Thus, facing an emotional change such as depression, anxiety, sadness, tension, or in

cases of mood disorder, it is common to seek comfort through food. Therefore, food intake does not only depend on metabolic factors such as hunger or satiety, but the presence of food and emotional changes increase the chance of eating uncontrolled as well as food abstinence.

Under conditions of eating behavior disorders, such as anorexia nervosa (AN) and bulimia nervosa (BN), there are changes in the individual's relationship with food. A recent neuroimaging study by Friederich et al. (2013) proposed to analyze the functional neuro circuit of patients diagnosed with AN and BN. The results point to a learning of patterns between conditioned neural stimulus-response and eating stimuli, associated with AN, which result in greater cognitive rigidity regarding the avoidance of food intake. In these cases, there is a hypo functioning of the cortical-limbic circuit, and concomitantly, a decrease in the dopaminergic neurotransmission system in the mesolimbic area, that is, there is conditioning against the food stimulus, causing a pathological fear of high-calorie foods, explaining phobic abstinence from food intake. In addition, there may be a compromise in the front-striatal circuits, which implies the production of stereotyped and compulsive behaviors, such as the control behavior of eating certain foods and extreme weight control, to the detriment of the acquisition of new behaviors. On the other hand, in BN patients, eating behavior is compensatory in a hypo-responsive reward system, neural activation impairs the inhibitory control network, which facilitates loss of control over food intake, in these cases.

Similarly, regarding the relationship between emotion and eating stimuli, a study conducted with anorexic patients (SPRING, 2014) sought to analyze the reactions implicit and explicit emotional responses to visual stimuli with food content and pointed

to an intense implicit reaction to high-calorie dietary stimuli. Thus, individuals are explicitly low alert to low-calorie foods, showing little affect with the stimulus. However, they demonstrate, albeit implicitly, a high alert for high-calorie foods, possibly for fear of consuming it and gaining weight. Thus, abstaining from high-calorie food is more relevant in these cases than contact with low-calorie food, considered healthy by these individuals. This intense affective reaction does not appear explicitly for the most part, which reflects adherence to social norms, but may also indicate a lack of introspection of affect, specifically with regard to emotional eating perception. While the individual implicitly reacts negatively to high-calorie foods, he explicitly demonstrates a desire to consume low-calorie foods, which reinforces the idea that the individual seeks to maintain himself in accordance with pre-established.

Currently, there is an increased prevalence of eating disorders (ED) among the student population and this incidence appears higher in university courses in which physical appearance is important, as in Nutrition and Physical Education courses (SOARES et al., 2009). One assumption is that individuals already concerned about their weight and body image can opt for these areas because they already have a personal interest in the subject. This hypothesis is confirmed by the study by Hughes & Desbrow (2005) which points out that one of the main factors that motivated Nutrition students in choosing the course was a previous personal experience with AT.

Also in this area, a study by Stipp & Oliveira (2003) indicates that in addition to the incidence of eating behavior disorders, body image disorders may appear. The study was conducted among undergraduate Nutrition and Psychology students and points out that 54.8% of future nutritionists and 51.1% of

future psychologists have no image distortion, and the incidence of intense distortion was 6.7 and 3, 0% respectively. This study infers that in areas that require greater control of food intake and body care, such as Nutrition, there is a greater propensity to develop eating and body image disorders, compared to other areas that do not necessarily require this control and care. Another study in the area raised a considerable percentage of undergraduate students from the Nutrition course who presented eating behavior disorders. Of the 131 undergraduates studied, 57 had characteristic symptoms of ED, representing 43.5% of the undergraduates evaluated (FIATES & SALLES, 2001).

Therefore, it is observed that there are several studies that address the susceptibility to eating disorders in Nutrition students and a study that evaluated the emotional reaction of these students to stimulating food content, but nothing was reported in Gastronomy students, who share the same work object. In view of the above, the aim of this study is to evaluate the emotional perception of food by undergraduate students of Nutrition compared to students of Gastronomy and students of other non-food courses (control group). In addition, we seek to assess the susceptibility to developing eating disorders and eating behavior of these students.

METHOD

SUBJECT CHARACTERIZATION

The present project evaluated twenty adults who study Nutrition and twenty adults who study Gastronomy, aged between 18 and 50 years. Chemical-dependent subjects with neurological and/or psychiatric disorders were excluded. To make a comparative analysis between the data obtained, the same number of university control subjects from random courses not related to contact and study of food were also evaluated. The

research was disseminated through social media and collaborators interested in participating contacted electronically where the meeting was scheduled for the procedure that took place in the premises of Mackenzie Presbyterian University, in pairs, with an average duration of fifty minutes.

ETHICAL CONSIDERATIONS

After clarifying all the procedures to the subjects, the Letter of Information was delivered to the Subject and the application was only started after signing the Informed Consent Form, leaving a copy with the volunteer and another with the experimenter. The participant was informed that the application could be interrupted at any time and that if requested not to use the data, it would be discarded. Anonymity and data confidentiality was guaranteed to participants.

We tried to minimize any inferences and discomfort to the subjects during the application of the instruments and the procedures offered minimal physical and/or psychological risks to the participants and the institution. However, if the participant eventually felt some kind of discomfort, their collaboration could be stopped at any time without negative consequences for you, as people were not required to participate in the survey. At no time was the identification of the employees involved used, and any data that allowed identification, obeying confidentiality. Any questions present at any time could be answered by contacting the researchers.

All these precautions are provided for in the Letter of Information to the Subject as well as in the Informed Consent Form.

CASUISTRY

The demographic and clinical characteristics of the series are shown in Table 1.

Variables	Gastronomy	Nutrition	Others
Age	33,25 (10,96)	22,75 (4,15)	20,25 (1,5)
Gender (F/M)	15/5	20/0	17/3
BMI	24,93 (0,07)	22,18 (0,07)	22,54 (0,13)

Table 1 - Demographic and clinical characteristics of the sample in average (standard deviation)

Sixty applications were performed, being twenty collaborators of the Nutrition course, twenty of the Gastronomy course, and twenty of several courses. One-way ANOVA revealed that the groups differ in mean age [$F(2,95) = 20.41$; $p = 0.001$]. A posteriori analysis revealed that the group of students of Gastronomy presented age difference of the other groups ($p < 0.001$), presenting students with average age of 33 years, while the other groups were composed of students with average age of 20 to 22 years. deity. There was no age difference between the group of Nutrition students and students from other courses ($p = 0.48$).

Regarding gender, the Gastronomy student group was composed of 75% female and 25% male collaborators, the Nutrition group was 100% female collaborators, and the group of students from the other courses. It was composed of 85% female and 15% male.

Related to BMI, one-way ANOVA revealed that the groups did not show significant differences between them [$F(2,446) = 2.98$; $p = 0.06$], although there is a tendency for difference revealed by an above-average score in the astronomy student group when compared to the other groups.

INSTRUMENTS

To assess the subjective perception of food photographs and other types of stimuli, the study used selected visual stimuli from the International Affective Picture System (IAPS) that refers to a set of photographs selected and classified according to the dimensions of pleasure, alertness and dominance.

Initially, the instrument was developed for investigations on emotion and attention (LANG, BRADLEY & CUTHBERT, 1999) and was standardized for Brazil by Ribeiro, Pompeii, and Bueno (2005). The visual stimuli of the instrument represent various situations in which people, objects, animals, streets, mutilations, abstract drawings, and others may be involved. The study used 5 pleasant high alert images, 5 pleasant low alert images, 20 images with food content, 20 neutral images, and 20 unpleasant/high alert images. The photographs were presented in random order previously drawn, with a slide of 5 seconds of preparation, exposure for 5 seconds of the photograph and after exposure, a black screen was presented for 15 seconds to perform the appreciation task. The emotional perception was assessed using the Self-Assessment Manikin scale (BRADLEY & LANG, 1994). In this 9-point scale the affective dimension valence (pleasant/unpleasant), alertness (high alert / relaxing), and dominance (submissive or in control) were evaluated.

To assess susceptibility to eating disorders we used the Eating Attitudes Test (EAT-26), developed by Garner et al. (1982) and translated into Portuguese by Nunes et al. (1994). It is a self-completed questionnaire, consisting of 26 questions frequently used in epidemiological studies to track an alleged susceptibility to the development of eating disorders in individuals.

To identify cognitive restraint, emotional eating and uncontrolled eating behaviors as behavioral patterns, the Three-Factor Eating

Questionnaire developed by Stunkard & Messick et al. (1985) and the Portuguese language by Natacci & Ferreira (2011). The reduced version containing 21 items (TFEQ-R21) aims to identify individuals who are in the state of cognitive restriction, as well as those who show signs of emotional eating and/or uncontrolled eating.

To identify the presence or absence of alexithymia which refers to the difficulty in identifying feelings and distinguishing them from body sensations resulting from emotional activation; difficulty describing feelings to others; impoverished fantasy life and externally oriented cognitive style, the Toronto Alexithymia Scale (TAS-26) instrument developed by Bagby, Parker, and Taylor (1985) and translated into Portuguese by Yoshida (2000) was used. It is a self assessment instrument, composed of 26 items, designed to measure the degree of alexithymia. The subject should respond using a five-point Likert scale where 1 completely disagrees, 2 disagree, 3 do not know, 4 agree and 5 strongly agree. Total scores range from 26 to 130, and for scores above 74 (inclusive) the subject is considered alexithymic and under 62 (inclusive) is considered non-alexithymic.

DATA ANALYSIS

Data were analyzed by two-way ANOVA analysis for repeated measures, and a posteriori test used was the Tukey test. To assess the response of the TAS-26 questionnaire, the Chi-square test (X^2) was used. The adopted significance level was 5%. The system for data processing was the Statistica program (Copyright StatSoft, Inc. 1991).

RESULTS

The average scores of the subjective perception of the figures regarding valence, alertness, and dominance are shown in Tables 2, 3, and 4 below.

In the valence category, two-way repeated measures ANOVA revealed a group effect [$F(2,3) = 3.72$; $p = 0.03$]; a figure type effect [$F(4,4) = 909.15$; $p < 0.001$] and an interaction effect between group and valence category [$F(8.1) = 4.04$; $p = 0.01$].

Regarding the interaction effect between group and type of figure [$F(2,3) = 3.72$; $p = 0.03$], it was observed that the group of gastronomy students rated the pleasant high and low alert figures as pleasant as the food content figures ($p = 0.23$ and $p = 1.00$, respectively). For this group, the food content figures are always taken for granted. The group of students from Nutrition and other courses rated the food content figures more pleasant than the high alert pleasant figures ($p = 0.01$ for both groups) but the low alert pleasant figures were considered more pleasant than food content figures ($p = 0.001$ for both groups). The other types of figures were classified equally by the three groups.

In the affective dimension of the alert, two-way repeated measures ANOVA revealed no group effect [$F(2.0) = 0.22$; $p = 0.79$]; however, there was a figure type effect [$F(4.2) = 232.89$; $p < 0.001$] and interaction effect between group and alert category [$F(8.2) = 1.91$; $p = 0.05$].

Regarding the alert effect [$F(2,0) = 0.22$; $p = 0.79$] the group of gastronomy students rated the food content figures as alerting as well as the pleasant high and low alert figures ($p = 0.40$ and $p = 0.37$, respectively). Students in the Nutrition group rated food content images more alert than pleasant low alert images and less alarming than pleasant high alert images ($p = 0.001$ and $p = 0.02$, respectively), as well as students in the control group ($p = 0.001$ and $p = 0.01$, respectively). In addition, the control group classified the alerting food content figures to the same extent as the neutral figures, while the Nutrition and Gastronomy groups considered the food content images more relaxing than the neutral figures ($p =$

GROUPS	TYPE OF PICTURE				
	Unpleasant	Neutral	Pleasant Low Alert	Pleasant High Alert	Food Content
Gastronomy	7,62 (1,29)	4,46 (1,14)	2,37 (1,30)	4,09 (1,73)	3,23 (1,49)
Nutrition	7,88 (1,08)	4,76 (1,08)	1,80 (0,82)	4,69 (1,22)	3,02 (1,33)
Others	7,52 (1,01)	4,38 (1,18)	2,18 (1,05)	5,11 (1,22)	3,43 (1,28)

Table 2 - Valence scores attributed to the figures according to the classification by categories in average (standard deviation).

GROUPS	TYPE OF PICTURE				
	Unpleasant	Neutral	Pleasant Low Alert	Pleasant High Alert	Food Content
Gastronomy	7,62 (1,29)	4,46 (1,14)	2,37 (1,30)	4,09 (1,73)	3,23 (1,49)
Nutrition	7,88 (1,08)	4,76 (1,08)	1,80 (0,82)	4,69 (1,22)	3,02 (1,33)
Others	7,52 (1,01)	4,38 (1,18)	2,18 (1,05)	5,11 (1,22)	3,43 (1,28)

Table 3 - Alert scores assigned to figures according to the classification by categories in average (standard deviation)

GROUPS	TYPE OF PICTURE				
	Unpleasant	Neutral	Pleasant Low Alert	Pleasant High Alert	Food Content
Gastronomy	3,12 (1,48)	6,47 (1,26)	7,76 (1,27)	7,07 (1,14)	7,63 (1,07)
Nutrition	2,60 (1,37)	5,66 (1,39)	7,84 (1,77)	6,15 (1,30)	7,04 (1,68)
Others	2,83 (1,29)	5,57 (0,98)	7,68 (1,18)	6,20 (1,14)	6,91 (1,23)

Table 4 - Dominance scores attributed to the figures according to the classification by categories in average (standard deviation)

Groups	Predominance		
	CR	UE	EE
Gastronomy	225,83 (67,63)	209,45 (68,14)	192,60 (102,37)
Nutrition	232,50 (47,90)	221,66 (57,40)	235,08 (69,59)
Others	244,17 (67,60)	230,56 (58,89)	267,50 (100,07)

CR = Cognitive Restriction

UE = Uncontrolled Eating

EE = Emotional Eating

Table 5 - TFEQ-R21 Gross Scores by Classification by Average (Standard Deviation)

0.23)., $p = 0.001$, $p = 0.02$, respectively).

In the affective dimension of dominance, two-way repeated measures ANOVA revealed no group effect [$F(2,1) = 2.19$; $p = 0.12$] and absence of interaction effect between group and dominance category [$F(8,1) = 1.05$; $p = 0.39$] but there was a figure type effect [$F(4,2) = 222.48.15$; $p < 0.001$]. A posteriori analysis of the figure type effect showed that all groups presented greater control in the face of pleasant low alert figures, followed by food content, pleasant high alert, neutral and with less control over the pictures with unpleasant content, that is, the three groups felt in control in front of pictures with food content.

EATING INVENTORIES AND EATING DISORDERS

Regarding the results of the inventories applied, the gross scores were considered according to each category of each instrument. Below are the results obtained by the participating groups in Table 5.

To identify cognitive restraint, emotional eating and uncontrolled eating behaviors as behavioral patterns, the results obtained by the TFEQ-R21 showed that there was no difference between the groups in the CR categories [$F(2,1) = 0,45$; $p = 0.63$] and UE [$F(2,2) = 0.59$; $p = 0.55$], so that all groups presented similar dietary control to influence weight or body shape and dietary control in the presence of hunger or external stimuli. Regarding the category of Emotional Eating (EE), which indicates a propensity to overeat in response to negative emotional states such as loneliness, anxiety and depression, one-way ANOVA revealed a difference between the groups [$F(2,2) = 3.24$; $p = 0.04$]. A posteriori analysis revealed that the group composed of other students presented a higher score in this category when compared to the group of students of Gastronomy ($p = 0.03$), while the group of Nutrition students did not differ

from the other groups ($p = 0.38$ and $p = 0.44$), when compared to the group of students of gastronomy, the group of other students tends to resort to food in the face of negative emotional states. On the other hand, the group of Nutrition students, when compared to the other groups, tends to overeat in the face of negative emotional states to the same extent as students in the other groups.

Relating to eating behavior, the results obtained through the Eating Attitudes Test (EAT-26), shown in Table 6, revealed that in general there was no difference between the groups [$F(2,1) = 1.72$; $p = 0.18$], which indicates that the three groups have the same degree of susceptibility to the development of eating disorders. Regarding the test categories, one-way ANOVA also revealed that there was no difference between the groups in the Diet category, which indicates a pathological refusal to high-calorie foods and intense concern with fitness [$F(2,5) = 1.97$; $p = 0.14$] in the Bulimia and food concern category, which refers to compulsive food intake, followed by vomiting and other behaviors to prevent weight gain [$F(2,9) = 0.75$; $p = 0.47$] and in the Oral Control category, which reflects self-control over food recognizing the social forces in the environment that stimulate food intake [$F(2,0) = 0.09$; $p = 0.90$].

The results obtained by applying the Toronto Alexithymia Scale (TAS-26) scale, shown in Table 7, revealed by one-way ANOVA that, in general, there was no difference between the groups in the assigned scores. Regarding the predominance in category F1 that reveals difficulty in identifying and describing feelings, in addition to distinguishing feelings from body sensations [$F(2,3) = 0,86$; $p = 0.42$] there was no group effect, as well as in relation to the predominance in category F2 that indicates difficulty in the ability to "daydream" [$F(2,3) = 1,82$; $p = 0.17$]. Likewise, there was

Groups	Predominance		
	Diet	Bulimia and food concern	Oral Control
Gastronomy	7,60 (4,30)	7,80 (3,52)	1,90 (2,31)
Nutrition	8,15 (4,51)	8,50 (3,19)	1,65 (2,52)
Others	10,70 (66,6)	9,20 (4,02)	2,00 (2,97)

Diet = indicates pathological refusal of high-calorie foods and intense fitness concern.

Bulimia and Food Concern = refers to compulsive food intake, followed by vomiting and other behaviors to prevent weight gain.

Oral Control = indicates food self-control recognizing the social forces in the environment that simulate food intake.

Table 6 - EAT-26 crude scores according to category classification (mean±standart deviation)

Groups	Predominance			
	F1	F2	F3	F4
Gastronomy	295,01 (76,26)	323,00 (39,08)	350,71 (58,54)	325,00 (103,24)
Nutrition	314,22 (57,14)	298,00 (47,20)	333,58 (39,95)	272,50 (96,62)
Others	286,67 (68,84)	309,00 (37,54)	348,57 (35,11)	305,00 (97,20)

F1 = difficulty in identifying and describing feelings, as well as distinguishing feelings from body sensations;

F2 = difficulty in daydreaming ability;

F3 = points to a certain preference to focus on external events over internal experiences;

F4 = indicates difficulty in the ability to communicate feelings to others.

Table 7 - Gross TAS-26 scores according to category classification (mean±standart deviation)

no difference regarding the predominance in category F3 that points to a certain preference to focus on external events over internal experiences [$F(2,1) = 0.83$; $p = 0.43$] and in category F4 which indicates difficulty in the ability to communicate feelings to others [$F(2,1) = 1.43$; $p = 0.24$].

Although no difference between groups was observed, the frequency of individuals classified with or without alexithymia was verified. The percentage of individuals in each group is shown in Table 8. A high prevalence of alexithymia was observed in the three groups of students, which will be discussed below.

DISCUSSION

This study aimed to explore the emotional perception of visual stimuli of food content in students of Gastronomy, Nutrition and other students of non-food courses (control group) as well as to explore the eating behavior and susceptibility to developing eating disorders of these students. groups. For this, we evaluated figures from various contexts, emotional and neutral as well as food-containing photographs, present in the IAPS instrument, through a subjective perception scale.

It was observed that the group of students of gastronomy presented a different appreciation of the figures with food content, compared to the other groups. For this group, food content figures were considered as pleasing and aroused as alert as the high and low alert figures considered pleasing, that is, for the food content stimuli were equally matched by any kind of pleasing figure as extreme sports figures and sexual scenes (nice high alert images), as well as landscape figures and smiling babies (nice low alert images) and raise as much alert as any nice figure. On the other hand, students from the other courses - Nutrition and other courses - showed preference to stimuli with low alert pleasant

content over food content images. Compared to the pleasant high alert figures, these groups showed a preference for the food content category compared to the pleasant high alert figures.

Regarding the dominance category, the study showed no difference between the groups, that is, the students from the three groups showed more control over the pleasant figures of low alert (smiling babies and landscapes), followed by food content images, pleasant high alert (extreme sports and sexual scenes), neutral (abstract objects and images) and less control over unpleasant content figures (accidents, tragedies). Thus, the three groups showed the same degree of mastery in face of food content stimuli.

When considering emotion as one of the motivating systems of behavior, and its affective dimensions of valence - pleasant/neutral / unpleasant - that promotes approach or withdrawal in the face of a stimulus (LANG, BRADLEY & CUTHBERT, 1999), and alertness, which modulates the intentional directing of attention facilitating the prioritization of the stimulus with greater alertness to be processed in the central nervous system, as well as reflecting the intensity of excitement in the face of a stimulus (KENSINGER, 2004), it can be stated that the food content is considered by Gastronomy students a highly appetizing stimulus (promotes rapprochement) and intense emotionally, being more interesting and mobilizing for this group than for the others.

Regarding the susceptibility to eating disorders, the results obtained through the TFEQ-R21 questionnaire did not show significant difference between the groups, that is, in general, the students from the Gastronomy, Nutrition, and other courses presented the same pattern. eating behavior with regard to the category of Cognitive

Restriction (CR) and Dietary Control (AD). Regarding the category of Emotional Eating (AE), the group of students from several courses had a high score indicating a propensity to overeat in response to negative emotional states such as loneliness, anxiety, and depression, followed by the group of students of Nutrition and Gastronomy. According to previous studies by Westerhofer (1994, cited by NATACCI & FERREIRA, 2011, p.390) Emotional Eating, stands out as one of the main responsible for uncontrolled food and excessive energy consumption, which may result in weight gain. In addition, Cognitive Restriction may leave the individual vulnerable to Emotional Eating and more responsive to sensory or cognitive exposure linked to food. (NATACCI & FERREIRA, 2011). However, the collaborators of the three courses presented a body mass index (BMI) within the normal range, save some exceptions more present in the Gastronomy group where the BMI was higher.

Relate to the results obtained through the EAT-26 questionnaire, which did not indicate a statistically significant difference between the student groups, that is, the three groups have the same degree of susceptibility to the development of eating disorders, both in the diet category indicating a pathological refusal to high calorie foods and intense concern with the physical form regarding the Bulimia category and concern about food, which refers to compulsive food intake, followed by vomiting and other behaviors to prevent weight gain, and the Oral Control category, which reflects self-control over food recognizing the social forces in the environment that stimulate food intake. In previous studies conducted with Nutrition and Physical Education students, it was noted the presence of risk factors for developing anorexia nervosa, that is, they showed a higher tendency to present risk behavior for

anorexia nervosa, predominantly in females (GONÇALVES et al., 2008). The literature reports a higher prevalence of eating disorders in undergraduate students in which physical appearance is important, including Physical Education and Nutrition, the latter having the highest scores in this instrument, and these values were statistically different from the values found for the students. Advertising and Administration courses. The high incidence of body image distortion associated with the high prevalence of inappropriate eating behavior in the group of health students demonstrated a possible susceptibility of these students to the development of eating disorders (LAUS, MOREIRA & COSTA, 2009).

In sum, the present study did not find recurrent eating disorders present in the students evaluated, revealing only in specific cases the propensity to develop eating disorders associated with BMI above or below the stipulated average for age group. Thus, although previous studies indicate a possible prevalence of eating disorders in undergraduate Nutrition students and other health-related courses (SOARES et al., 2009), the present study did not reveal the presence of eating disorders, either. of restraint or compulsion. Some cases of propensity to develop eating disorders could not be observed, which does not really mean its onset.

Relate to the assessment of alexithymia regarding the disturbance that affects emotional processing, which results in the inability to express emotions in the form of feelings through language (FREIRE, 2010), the present study found a high score. of alexithymic subjects in the three groups evaluated, with no statistically significant difference between them. A previous study conducted with two groups of 80 collaborators each, the first with subjects with anorexia and the second composed of healthy individuals,

showed a prevalence of alexithymia in the group with an eating disorder, that is, this type of population had difficulties in regulating effects when compared to healthy individuals (TORRES et al., 2011). Although this study pointed to a high incidence of alexithymia in the anorexia group of participants, the control group had a considerable 35% percentage between the alexithymic classification and the intermediate zone of alexithymia.

Considering that, the high alexithymic subjects' score in the three groups evaluated, may be related to the sample number, which is lower when compared to the study by Torres (2011), as well as the age group that differs between the employees in question. Finally, the high incidence of alexithymia in the subjects indicates the need for future studies in the area in order to explore the reasons and causes of the index present in college students.

FINAL REMARKS

The present study aimed to comparatively evaluate the emotional perception regarding eating stimuli of university students of Gastronomy and Nutrition, as well as to evaluate the susceptibility to the development of eating disorders. Based on the data collected, students of the Gastronomy course tend to

perceive the stimulation of food content in a more targeted and intentional way, while students of the Nutrition course and other courses tend to consider other stimuli more attractive. Regarding the susceptibility of eating disorders, the three groups of students behaved similarly, showing no degree of eating behavior considered at risk for the development of eating disorders. In addition, the high incidence of alexithymia in the three groups was evident and future studies should explore the possible etiology of the condition. Finally, the present study revealed a significant difference in the way Gastronomy students perceive and relate to stimuli that contain food content, making them more intense and emotionally significant when compared to Nutrition students, who share the same object of work and the other courses, which possibly impacts on its preparation and presentation.

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