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**EMOTIONAL DIMENSIONS OF EATING BEHAVIOR AND QUALITY
OF LIFE IN ADOLESCENTS/YOUTH**

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Abstract

The importance of eating behavior (EB) in quality of life is unquestionable. Hence, it will be interesting to identify the individual factors related to the emotional dimensions that influence the EB. This non-experimental study aims to assess the relationship between eating behavior and the quality of life in adolescents and youth, namely the impact of the three eating emotional dimensions (restriction, disinhibition and hunger). Additionally, this paper discusses the socio educational intervention to promote healthy eating. This is an ex post facto study with a convenience sample of 108 Portuguese adolescents/youth with a mean age of 15.21 ± 1.42 . The Portuguese version of the KINDL measuring quality of life and the Three Factor Eating Questionnaire (TFEQ) measuring eating behavior and a sociodemographic questionnaire were applied on the sample. Statistical analyses were performed using SPSS-IBM24, with a 95% confidence level. Results in the TFEQ revealed adolescents/youth with $1.84 \pm .50$, $1.99 \pm .54$, and $2.55 \pm .56$, respectively in the restriction, disinhibition and hunger. Adolescents/youth with low disinhibition and hunger in TFEQ showed better quality of life than individuals with higher levels of both eating emotional dimensions ($p = .007$ and $p = .013$, respectively). Restriction dimension seems independent of the quality of life. The relationship between the emotional dimensions of EB and quality of life justifies a socio educational intervention to promote a healthy eating behaviour among adolescents/youth. This relationship may be mediated by the effects of those dimensions on results on food balance and its organic repercussions. Thus, intervention should focus on awareness of those effects. However, this mediation needs to be better investigated.



1. Introduction

In a society where body image is a central aspect of people's lives, it is important to study the eating behavior of adolescents/youth, since it is a stage of life with significant physical and psychosocial development (Fortes, Morgado & Ferreira, 2013). Eating behavior of adolescents/youth has often been classified as improper (Gomes, 2017), either by a compulsive consumption of foods rich in sugar, fat and sodium, to the detriment of more healthy foods such as rice, beans, meat, greens and fruit (Viero, 2018), or by omission of meals, turning lunches into snacks (Toral, 2010). Furthermore, school cafeterias and other services outside of the home are related to overconsumption of calories and non-healthy foods (Andegiorgish et al., 2012; Shonkoff et al., 2017).

In addition to these external factors, some individual variables are important in determining the eating behaviour. In this sense, emotions play an important role. The concept of emotional eating has gained preponderance, since it is related to an excessive consumption of food caused by mood swings where consumption of food is an attempt to improve the mood of the individual (Lourenço, 2016). It is important to emphasize that this type of eating behavior can lead to physical and emotional diseases, such as anorexia and bulimia (Gomes, 2017), which usually appear in adolescence / youth.

Eating behaviors adopted by adolescents have an indispensable role in their growth and global development (Gonçalves, 2011), since adolescence is a transition phase into adulthood and the decisions made at this stage will have consequences later in life (Silva et al., 2017). It is therefore vital to study the emotional dimensions of eating behavior, namely restriction, hunger and disinhibition (Kruger, Bray, Beck, Conlon, & Stonehouse, 2016), as well as their influence on the quality of life of adolescents/youth. Although there are another theoretical perspectives on emotional dimensions of eating behaviour, for example, authors such as Poínhos, Oliveira and Correia (2015) propose emotional ingestion, external ingestion and food restriction, the most frequently evaluated are those previously mentioned. Kruger et al. (2016) have stated that Stunkard and Messick are the seminal authors in this area since they proposed, in 1985, an instrument, the Three-Factor-Eating-Questionnaire (TFEQ) to measure these emotional dimensions of eating behaviour, now used worldwide. These dimensions can be defined as follows: “cognitive restraint as the degree of cognitive control in daily food intake; disinhibition as the loss of control in food intake; and hunger as the susceptibility for internal or external hunger signs” (Löffler et al., 2015, p.1). According to this study, individuals with scores below the median in all three dimensions showed the lowest Body Mass Index (BMI) values. In fact, these emotional dimensions are related with health status.

According to Visser (2017), the current dietary patterns associated with the consumption of food, unsatisfactory nutritional levels and industrialized products that directly influence the food quality will have repercussions in the quality of life of the individuals. Studies show that emotional eating is related to quality of life, especially in obese women who adopt a poor diet (Kim, Choue, & Lim, 2016). In fact, eating behaviour is connected to an emotional regulation system that should be part of diagnostic criteria and intervention programmes targeted at diseases related to diet (e.g. obesity), as they can significantly influence quality of life (Micanti et al., 2017).

The concept of quality of life refers to “how an individual measures the ‘goodness’ of multiple aspects of their life” (Theofilou, 2013). This multidimensional construct includes social, psychological and health aspects of an individual’s life (Souza, Pamponet, Souza, Pereira, Souza, & Martins, 2014). According to these authors,

in children and youth, quality of life assessment is essential in order to understand their own perception (and not the parents' evaluation) with regard to the impact on their health-related attitudes and behavior.

In this sense, understanding relationships between emotions, eating and quality of life in youth is crucial to prevent health problems in adulthood.

2. Problem Statement

Quality of life is a construct related to several health factors, such as BMI, physical activity, eating behavior, and many others. Lower quality of life levels are related to unhealthy behaviors (Chen et al., 2014) including food intake, that we know is influenced by emotional dimensions, as previously highlighted. In this sense, the importance of eating behavior (EB) affecting the quality of life is unquestionable. Hence, it would be very interesting to identify the individual factors that influence the EB, in particular the emotional dimensions, namely restriction, disinhibition and hunger.

3. Research Questions

In order to clarify the problem above, this study attempts to answer the following questions:

3.1 How are the emotional dimensions of eating behavior in adolescents/youth characterized?

3.2 What relationships are established between the emotional dimensions and the quality of life?

4. Purpose of the Study

This non-experimental study aims to identify the characteristics of the emotional dimensions of eating behavior and assess the relationship between eating behavior and the quality of life in adolescents and youth, namely the impact of the three eating emotional dimensions; restriction, disinhibition and hunger). Additionally, a socio educational intervention to promote healthy eating is recommended based on the results of the study.

5. Research Methods

This is an ex post facto study adopting a quantitative methodology.

5.1. Participants

This study investigated a convenience sample of 108 Portuguese adolescents/youth; 67 females and 41 males. The mean age was 15.21 ± 1.42 , ranging between 13 and 17 years old; 46% of this population lived in urban areas and the other 54% in rural areas, while the majority (70%) was from inland, 30% lived in the coastal area and inland region of the country. With regard to education, 59% had completed secondary education. General participants' characterization is presented in Table 01.

Table 01. Participants' characterization

Variables		M	DP	Min.	Max.
Age		15.21	1.421	13	17
		n		%	
Gender	Male	41		38	
	Female	67		62	
Urbanity Location	Urban	40		46	
	Rural	47		54	
Region of the country	Coast	27		30	
	Inland	64		70	
Education	2nd Cycle	3		3	
	3rd Cycle	40		37	
	High School	63		59	
	University	1		1	

5.2. Materials

In addition to a sociodemographic questionnaire, the KIDDO-KINDL, version adapted for adolescents, created by Bullinger in 1994 (Portuguese version of Ferreira, Almeida, Pisco, & Cavalheiro, 2006); and Three Factor Eating Questionnaire (TFEQ), created in 1985 by Stunkard and Messick (Portuguese version of Moreira, Almeida, Sampaio and Almeida, 1998) were applied on the sample.

KIDDO-KINDL is a 24 item valid and reliable measuring instrument to be filled by adolescents. It measures six dimensions of quality of life: physical well-being, emotional well-being, self-esteem, family, friends, and school (Ferreira et al., 2006). There are partial (by dimension) and global scores (6-120 scale) where higher scores mean better quality of life.

The TFEQ questionnaire is considered to be one of the most reliable self-completion tools in assessing emotional dimensions of eating behavior (cognitive food restriction, disinhibition and susceptibility to hunger) often adapted for different populations (Moreira et al., 1998). The version used for this study includes 26 items: restriction (13 items), disinhibition (7 items) and hunger (6 items), with values ranging from 13 to 52 for the restriction, between 7 and 28 for disinhibition and from 6 to 24 for hunger.

5.3. Procedure

Data was collected directly in domiciliary visits with the presence of the investigator, in June 2017. Prior to that, parents signed an informed consent to guarantee the ethical care involved in any research process.

For descriptive and inferential data analysis, the Statistical Package for Social Sciences (IBM 24) with a confidence level of 95% was used. Non-parametric and parametric tests were used according to the characteristics of the sample (normality and/or homoscedasticity) and of the variables explored.

6. Findings

6.1. Characterization of emotional dimensions of eating behavior

Generally, the descriptive statistical analysis results in the TFEQ reveal adolescents/youth with $1.84 \pm .50$, $1.99 \pm .54$, and $2.55 \pm .56$, respectively in the restriction, disinhibition and hunger, showing low results in a scale 1 (low results) to 5 (high results).

6.2. Relationship between emotional dimensions of eating behaviour and quality of life

In order to compare groups of participants with different results (higher and low levels) in the emotional dimensions, the median of restriction, disinhibition and hunger was calculated allowing for the organization of these dimensions into two-level variables: groups with higher vs. lower results in the emotional dimensions of eating behavior. The adolescents/youth with low disinhibition and hunger in TFEQ performed better in the quality of life scale than the individuals with higher levels of both eating emotional dimensions ($p = .007$ and $p = .013$, respectively). These results are favourable to health conditions and quality of life, according to literature (Micanti et al., 2017).

Table 02. Group comparisons on quality of life in the function of eating behavior

Emotional Dimensions	Parametric/ Non Parametric Test	<i>p</i>
Restriction	$t = 1.359$.177
Disinhibition	$U = 907.500$.007
Hunger	$U = 914.500$.013

Although several studies (e.g. Antunes et al., 2015) have established the relationship between the emotional dimensions of eating behavior and eating disorders such as overweight or obesity, and knowing that those disorders affect individuals' quality of life, this study found that the restriction dimension seems independent of the quality of life.

7. Conclusion

Pereira, Silva and Sá (2015) consider healthy eating habits to be a central aspect for adolescents' quality of life. Furthermore, this sample revealed significant relationships between emotional dimensions of EB and quality of life. This relationship may be mediated by the effects of those dimensions on results on food balance and its organic repercussions. Thus, socio educational intervention should focus on awareness of those effects. However, this mediation needs to be better investigated, in order to promote healthy eating habits in youth as a determinant factor for future adult health and quality of life.

As pointed by Pereira et al. (2015), intervention in the context of eating behaviors is frequently related to altering poor eating habits of adolescents /youth, and there are few intervention strategies that effectively seek to understand the origin of these behaviors, including the emotional dimensions. From our point of view however, intervention in this field will only be effective if we can get to the root of the problem and intervene directly there, more in the scope of prevention than in changing behavior that already exists.

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