**Review Aricle**
Volume 11:6, 2022

Journal of Metabolic Syndrome

ISSN: 2167-0943 Open Access

# Evaluation of the Prevalence of Body Dissatisfaction and Changes in Eating Behavior in Diabetic Patients

**Erika Mayumi Ikeda Cavamura[1]*, Mateus Beana[1] and Lucas Gonçalves[2]**

*[1]Department of Medicine, Faculdade Pequeno Príncipe, Curitiba, Brazil*
*[2]Department of Medicine, Faculdade Evangélica-Mackenzie de Curitiba, Curitiba, Paraná, Brazil*

## Abstract

**Introduction:** Some studies have shown a high frequency of eating disorders in patients with type-2 diabetes mellitus, which has a potential impact on the treatment and prognosis of these patients.

**Objective:** To investigate the prevalence of body dissatisfaction and the presence of changes in eating behavior in diabetic patients according to the literature.

**Materials and methods:** This research consists of an integrative review carried out from a bibliographic survey in the PUBMED and Virtual Health Library (VHL) search platforms.

**Results:** It is observed that people who have Diabetes Mellitus (DM) and eating disorders (ED) have factors in common. Discussion: Patients with eating disorders coexisting with DM may have unhealthy methods to maintain weight control. Some of the methods are: vomiting, using laxatives and skipping insulin doses. These methods are associated with poor glycemic control, as well as the presence of overweight and obesity in patients. It is worth emphasizing that this type of behavior is more reported in patients with type-2 DM compared to type-1 patients.

**Keywords:** Diabetes • Body dissatisfaction • Eating disorder

## Introduction

Many publications have described the comorbidity between Eating Disorders (ED) and Diabetes Mellitus (DM). However, part of the literature remains inconclusive when verifying the prevalence of comorbidity - some studies do not demonstrate a higher prevalence of eating disorders in diabetic patients when compared to the general population, while others reveal a significantly increased risk [1]. A recent study, carried out by Jones JM, et al., involving approximately 1500 young people, demonstrated a 2.4 times greater risk for the development of ED in diabetic adolescents when compared to the control group [2]. Herpertz S, et al, in turn, showed a significant prevalence of ED in a sample of 663 type-1 and type-2 diabetic patients [3]. The fact is that it is not easy to make a diagnosis of eating disorders in diabetic patients, considering that the treatment of diabetes itself requires higher levels of attention to weight and dietary regimen, which determines the presence of behaviors common to patients with eating disorders. It is believed, however, that this same fact increases the risk of diabetics, both type-1 and type-2, to develop some type of eating disorder such as bulimia nervosa, anorexia nervosa or binge eating disorder [4]. Thus, although some characteristics necessary for the diagnosis of ED are intrinsic to the treatment of DM, both conditions can overlap and constitute a mutual risk factor: The eating disorder could lead to risky eating behaviors for the development of diabetes, to whereas diabetes could predispose to the development of eating disorders. It is true, however, that, regardless of the cause-effect relationship, poor eating habits can directly interfere with glycemic control, increasing the risk of acute and chronic complications of diabetes mellitus and, consequently, significantly affecting the prognosis and quality of life of these patients, a fact in which lies the importance of identifying body dissatisfaction and eating disorders in diabetic patients, considering the former is an important risk factor for the latter, thus enabling early treatment.

***Address for Correspondence:** Erika Mayumi Ikeda Cavamura, Department of Medicine, Faculdade Pequeno Príncipe, Curitiba, Brazil; E- mail: ki.mayumi@hotmail.com*



**Date of Submission:** 02 June, 2022, Manuscript No. JMS-22-72933; **Editor Assigned:** 04 June, 2022, PreQC No. P-72933; **Reviewed:** 18 June, 2022, QC No. Q-72933; **Revised:** 23 June, 2022, Manuscript No. R-72933; **Published:** 30 June, 2022, DOI: 10.37421/2167-0943.2022.11.280.

## Materials and Methods

This research consists of an integrative review carried out from a bibliographic survey in the PUBMED and Virtual Health Library (BVS) search platforms. For the search, the terms "diabetes" or "body dissatisfaction or "Eating disorder" were used. As a result, 43 publications were obtained in PUBMED and 32 in the BVS. The following inclusion criteria were established: English language, primary studies, population with diabetes and presence of body dissatisfaction. The exclusion criteria used were: studies outside the inclusion criteria, presence of non-diabetes patients in the research, studies not available in full for free.

The reading of titles and abstracts and the selection of articles for full reading was performed by four researchers independently, two in each tool. After selection, the results were compared, the differences in choice were discussed and the works for reading were selected. With this first analysis, the PUBMED platform returned a total of 24 results and the VHL returned 18 articles. After reading the full 24 articles in total, an overlap of four articles present in the two searches was observed, thus resulting in a total of 20 articles included in this review.

## Results

### Dissatisfaction with the body image

Throughout history, the importance of culture as a means of regulating human behavior has always been evident. In this way, an individual inserted in a society shares a set of attitudes, values, beliefs and behaviors, which are transmitted for generations. Thus, individuals have always shaped their actions to be acceptable in their social environment [5,6]. In Western societies,

there is a cult of the ideal of the beautiful body, assuming that the concept of beauty changes according to ethnicity or society. Following this reasoning, Frost (2005), the need to build a beautiful appearance is an inevitable part of producing your own identity in capitalist society that stimulates dreams and desire to achieve the perfect body and beauty.

The body image is defined by Adami, Fernandes, Frainer and Oliveira as a complex of the human phenomenon that involves cognitive, affective, social, cultural and motor aspects [7-10]. It is intrinsically associated with the concept of self and is influenced by the environment in which it lives. In modern societies, mainly Westerners, attribute the concept of beauty to a thin, tall body, following golden proportions. However, many individuals fail to achieve the desired standards, leading to body dissatisfaction. According to Waren, Gleaves, Benito, Fernandez and Ruiz, this dissatisfaction consists of a negative subjective assessment of physical appearance, which consequently generates repercussions at the individual's psychological level [11,12]. The cultural industry that travels through the media is in charge of creating desires and reinforcing images by standardizing bodies. Today's eyes see bodies being shaped by physical activities, plastic surgery and aesthetic technologies, thus increasing the possibility of a trend towards development of eating disorders and a distorted body image [13-15].

The incessant search for the ideal body image, that is, to correspond to the aesthetic ideals of the culture of belonging, affected individuals resort to aggressive diets, physical exercise, use of drugs for weight loss - laxatives, diuretics. Such behaviors contribute to the development of eating disorders such as anorexia and bulimia [16]. Physicians' knowledge of the problems generated by body dissatisfaction is crucial for the early identification of affected people and for providing adequate assistance. This issue has become a public health problem, as it encompasses the physical, emotional, psychological and sequelae of deprivation or aggressive changes to the human body. According to Cabrera, care for patients affected by body dissatisfaction requires special care that is carried out by trained professionals who work together to form a multidisciplinary team, consisting of psychiatrists, psychologists, endocrinologists, nutritionists, pharmacists, physical educators. Interdisciplinary work is more effective as it meets the needs of the patient as a whole and helps speed the recovery of affected individuals.

### Eating disorders

Eating disorders (ED) can appear from childhood, but more commonly occur in adolescence [12]. The spectrum of ED is characterized by an exaggerated fear of gaining weight and extreme concern with weight and body shape. Self-confidence and self-esteem are largely based on body perception and daily life is strongly influenced by weight loss/weight control measures [13]. EDs have a multifactorial etiology, being associated with sociocultural factors, genetic predisposition, psychological and biological aspects [12-16]. Some of the risk factors include psychiatric illnesses in the family, pattern of family environment and the current sociocultural context of extreme valuing of the body [16].

EDs occupy the third place in the ranking of chronic diseases among adolescents, only behind obesity and asthma [13]. These disorders generate intense psychological suffering and are highly related to other psychiatric disorders and comorbidities in general, which can be severe and lead to death [13-16]. Some of the diseases described in the ED spectrum according to the Diagnostic and Statistical Manual of Mental Disorders in its fifth edition (DSM-5) are: Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge Eating Disorder (BD), Other Specified Eating Disorder (OTAE) and Unspecified Eating Disorder (TANE). EDs are more prevalent in women, with 0.3 to 0.7% of the population affecting males [14,15].

**Anorexia Nervosa (AN):** AN preferentially affects young women, reaching less than 1 to 4% of this population [14,15]. The disease is characterized by intense fear of gaining weight or gaining weight leading to significantly low body weight, caloric intake restriction, persistent weight loss behaviors and disturbances in the way body shape and weight are perceived and understood. That generates intense dissatisfaction. And patients can use self-induced vomiting, laxatives, enemas, diuretics, thyroid hormones and exaggerated physical exercises as a purgative method [11,12].

**Bulimia Nervosa (BN):** BN manifests itself in episodes of binge eating with ingestion of large amounts of food associated with inadequate compensatory behaviors to avoid weight gain and, similar to AN, disturbances in body perception leading to an overvaluation of shape and body weight in self-assessment [12,13]; DSM - 5, 2013). The prevalence of BN in the female population, the most affected, is 1 to 2% [14,15].

**Food Compulsion Disorder (FCD):** ED causes intense suffering and is characterized by recurrent episodes of binge eating not accompanied by compensatory behaviors. In episodes of compulsion there is a feeling of lack of control, there is the ingestion of large amounts of food quickly, in the absence of hunger and often until there is physical discomfort. After the episode, feelings of guilt and disgust occur. This disorder is highly associated with the appearance of obesity and other major mood and anxiety disorders [12]. FCD affects more women with prevalence around 1 to 4% of this affected population [17-19].

## Discussion and Conclusion

### Diabetes and eating disorders

It is observed that people who have Diabetes Mellitus (DM) and eating disorders (ED) have factors in common. In individuals with type-1 DM, it was observed that factors such as age, gender, dietary routine for DM, body mass index, body satisfaction, family support and DM complications seem to be the main factors for increased risk of developing ED. In general, among the factors presented for increased risk for ED are: being between 7 and 18 years old, being female, having a body mass index that indicates overweight or obesity, having body dissatisfaction, having poor family attention to healthy eating, presence of maternal overweight and mother with binge eating, as well as having a detailed and specific diet for DM [20]. Analyzing the prevalence in relation to gender, in women with type-1 DM, the prevalence of ED is more than double that of men (37.9% against 15.9%) [20]. A detailed diet, with precise portions and monitoring of the amount of carbohydrates is essential for the management of type-1 DM. However, this can put patients in a situation of greater concern about their health and nutrition and, therefore, lead to the emergence of psychiatric problems that form the bases of AT development [20].

It is important to remember that older patients (aged 51-60 years) with type-2 DM may also suffer from anxiety disorders. Probably by starting to notice the illness and the sudden deterioration of health. They may be going through stages of adaptation to new situations and conditions, both social and biological age-related. In the case of not accepting these situations, these people tend to employ psychological means of denial [17]. A review and meta-analysis by Nieto-Martínez R, et al. assessed whether type-2 DM had eating disorders as risk factors. Showing that Bulimia nervosa presented an increased risk of developing type-2 DM, both in control cases and in cohorts. Whereas Anorexia nervosa showed a decreased risk in cohort studies. Patients with eating disorders coexisting with DM may have unhealthy methods to maintain weight control. Some of the methods are: vomiting, using laxatives and skipping insulin doses. These methods are associated with poor glycemic control, as well as the presence of overweight and obesity in patients. It is worth emphasizing that this type of behavior is more reported in patients with type-2 DM compared to type-1 patients [17].

Around 44% of teenagers or young women with type-1 DM have used unhealthy methods for weight loss. The reason for this may be the fact that girls with anxiety disorders, in large proportion, report dissatisfaction with what they see of their body shape and ideal body shape [19]. Eating disorders contribute to an increased risk of diabetes-related complications, such as: diabetic ketoacidosis, abnormal lipid profile, retinopathy, neuropathy, nephropathy, and increased mortality [19]. Reinehr T, et al. in a study observed higher levels of Hb1Ac and higher rates of diabetic ketoacidosis or severe hypoglycemia in the presence of DM associated with eating disorders. In the study, there was a higher prevalence of diabetic ketoacidosis in the first 2 years after the onset of DM in girls with ED, associated with greater hospitalization and presence of retinopathy. The rate of severe hypoglycemia was higher in girls with ED in the first year after the onset of diabetes [19].

## References


1. Meltzer, Lisa J, Suzanne Bennett Johnson and Jason M. Prine, et al. Desrosiers, and Janet H. Silverstein. "Disordered eating, body mass, and glycemic control in adolescents with type-1 diabetes. *Diabetes Care* 24 (2001): 678-682.
2. Jones, Jennifer M., Margaret L. Lawson and Denis Daneman, et al. "Eating disorders in adolescent females with and without type-1 diabetes: cross sectional study." *Bmj* 320 (2000): 1563-1566.
3. Herpertz, Stephan, Christian Albus and Ruth Wagener, et al. "Comorbidity of diabetes and eating disorders: Does diabetes control reflect disturbed eating behavior?." *Diabetes Care* 21 (1998): 1110-1116.
4. Ward, Anne, Nicholas Troop and Mario Cachia. "Doubly disabled: diabetes in combination with an eating disorder." *Postgrad Med J* 71 (1995): 546-550.
5. Alves D, P.S. Alves, Mota and A. Leiros. Cultura e imagem corporal. *Motricidade* 5 (2009)
6. Field, Alison E, Carlos A. Camargo and C. Barr Taylor. "Relation of peer and media influences to the development of purging behaviors among preadolescent and adolescent girls." *Arch Pediatr Adolesc Med* 153 (1999): 1184-1189.
7. Kanayama, Gen, Steven Barry and James I. Hudson. Body image and attitudes toward male roles in anabolic-androgenic steroid users. *Am J Psychiatry* 163 (2006): 697-703.
8. Russo, Renata. "Imagem corporal: construção através da cultura do belo." *Movimento & Percepção* 5 (2005): 80-90.
9. Schilder, P. A imagem do corpo: as energias construtivas: As energias construtivas da psique. São Paulo: Martins Fontes, 1994.
10. Tavares, M.C.G.C.F. Imagem corporal: conceito e desenvolvimento. São Paulo: Manole, 2003.
11. American Psychiatric Association. DSM-5: Manual diagnóstico e estatístico de transtornos mentais. *Art Med Editora*, 2014.
12. Appolinario, José Carlos, Claudino and Angélica M. Transtornos alimentares. *Rev Bras Psiquiatr* 22 (2000): 28-31.
13. Herpertz-Dahlmann, Beate. "Adolescent eating disorders: update on definitions, symptomatology, epidemiology, and comorbidity." *Child Adolesc Psychiatr Clin* 24 (2015): 177-196.
14. Hoek, Hans W. "Review of the worldwide epidemiology of eating disorders." *Curr Opin Psychiatry* 29 (2016): 336-339.
15. Keski-Rahkonen, Anna and Linda Mustelin. Epidemiology of eating disorders in Europe: Prevalence, incidence, comorbidity, course, consequences, and risk factors. *Curr Opin Psychiatry* 29 (2016): 340-345.
16. Morgan, Christina M., Ilka Ramalho Vecchiatti, and André Brooking Negrão. "Etiologia dos transtornos alimentares: aspectos biológicos, psicológicos e sócio-culturais." *Braz J Psychiatry* 24 (2002): 18-23.
17. Jaworski, Mariusz, Mariusz Panczyk and Andrzej M. Śliwczyńsk. "A Ten-year longitudinal study of prevalence of eating disorders in the general polish type-2 diabetes population." *Med Sci Monit* 24 (2018): 9204.
18. Nieto-Martínez, Ramfis, Juan P. González-Rivas and José R. Medina-Inojosa. "Are eating disorders risk factors for type-2 diabetes? A systematic review and meta-analysis." *Curr Diab Rep* 17 (2017): 1-12.
19. Reinehr, Thomas, Barbara Dieris and Angela Galler. "Worse metabolic control and dynamics of weight status in adolescent girls point to eating disorders in the first years after manifestation of type-1 diabetes mellitus: findings from the Diabetes Patienten Verlaufsdokumentation Registry." *J Pediatr* 207 (2019): 205-212.
20. Toni, Giada, Maria Giulia Berioli and Laura Cerquiglini. "Eating disorders and disordered eating symptoms in adolescents with type-1 diabetes." *Nutrients* 9 (2017): 906.


**How to cite this article:** Cavamuram, Erika Mayumi Ikeda, Mateus Beana and Lucas Gonçalves. "Evaluation of the Prevalence of Body Dissatisfaction and Changes in Eating Behavior in Diabetic Patients." J Metabolic Synd 11 (2022): 280.