A cross-sectional survey about the prevalence of food addiction among selected type 2 diabetes subjects

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ABSTRACT

Background: Plethora of studies has authenticated the linkage between overeating, overweight, and diabetes. Thus, this study was framed to evaluate whether diabetes subjects are food addicted which leads to overweight and thereby pave way for the development of type 2 diabetes. **Methodolgy:** The Yale Food Addiction Scale (YFAS) has been recommended for the assessment of addictive eating behavior. **Result:** The German version of the YFAS was administered to type 2 diabetes subjects (*n* = 100) and the results were analyzed. Item analysis revealed that out of the hundred selected diabetic subjects only 6% had food addition.

Key words: Diabetes, food addiction, Yale Food Addiction Scale

INTRODUCTION

"Leave your drugs in the chemist's pot if you can cure the patient with food."

–Hippocrates, 420 B.C.

Food addiction is a syndrome that chronicles compulsive overeating accompanied by strong cravings and extreme difficulty in abstaining from the highly palatable fare. The increasing legitimacy of the food addiction concept has been supported by the principle that hyper-palatable foods, rich in sugar, fat, and salt have the possibility to foster excessive consumption and a state of dependence.[1]

Even before Francine Kaufman coined the term diabesity, researchers have made onerous attempts to make the community aware of the clinical connection between obesity and diabetes.[2] Both overweight and obesity are predisposing risks for the development of type 2 diabetes.

Although providing education and diet recommendations is a necessary component of diabetes treatment, it may be insufficient, given the high comorbidity of diabetes and psychological problems. Researchers have specified that psychosocial interventions can improve the mental and physical well-being of patients with chronic medical conditions.[3] Specifically, behavioral principles can be used to address mental and physical health care issues in integrated primary care delivery models.[4] Collaborative goal setting can improve diabetes self-management[5] and also inculcate nutrition adherence among patients with diabetes.[6]

Scarcer data's are available regarding the role of "food addiction" among diabetes patients, and there seems to be a high proportion of "food addiction" in obese subjects. Hence, the current study was designed to assess

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the prevalence of "food addiction" among the selected diabetes subjects.

MATERIALS AND METHODS

This study was approved by the Independent Institutional Ethical Committee of Women's Christian College, Chennai, Tamil Nadu, India. A cross-sectional study was conducted randomly among 100 diabetes subjects attending a diabetic clinic. Individuals were approached during their consultation and asked whether they would like to participate in a questionnaire study. All participants provided written informed consent. The inclusion criteria were diabetic subjects within the age of 40-60 who were only on oral hypoglycemic drugs. Pregnant and lactating mothers were excluded from the study.

Anthropometric measurements

Body height, weight, and body mass index (BMI) were measured during the time of the study. Subjects were weighed to the nearest 0.1 (kg) on a platform manual scale balance. A fixed stadiometer was used to measure height to the nearest 0.1 (cm). Hip circumference was measured with the flexible measuring tape to the nearest 0.1 (cm) at the level of largest circumference between the waist and thighs while the participant was in a standing position. The same procedure was used to measure waist circumference at the level of the umbilicus, midway between the lowest rib and iliac crest. BMI was calculated by dividing participants' weight in kilograms by the square of his/her height in meter (kg/m^2). The subjects were classified as underweight/normal (BMI <24.99) and overweight/obese (BMI >25.00) based on BMI, WHO 2014.

Yale Food Addiction Scale

The Yale Food Addiction Scale (YFAS) measures symptoms of food addiction[7] and its German version was used in the current study. This 25-item instrument contains different scoring options (dichotomous and frequency scoring) to indicate experience of addictive eating behavior within the past 12 months. A symptom count can be calculated which can range between 0 and 7 food addiction symptoms. Food addiction is diagnosed if at least three symptoms and a clinically significant impairment or distress (as assessed with two extra items) are present.

RESULTS

Analysis of Yale Food Addiction Scale

Study of the YFSA has been categorized under eight criteria on which the study subjects were assessed for food addiction. Endorsement rates for YFAS "symptoms" are given in the Table 1.

DISCUSSION

The predicted mean values of anthropometric and blood pressure values of the subjects are in Table 2. It is evident that the mean BMI value for both women and men lies within the range of 25, which falls under the desirable category. The mean value of waist circumference is 95.4 for women and 99.1 for men. The mean blood pressure was 120/76.6 in women and men the mean blood pressure was found to be 117/80 indicating that subjects do not have hypertension criteria for the study. Thus, all the diabetic subjects selected for the study were under desirable weight category (WHO, 2014).

Analysis of Yale Food Addiction Scale

Due to urbanization boundless changes in the quality, quantity, and source of food consumed have led to an increase in the predominance of diabetes and its complications. To prevent diabesity which is becoming a pandemic, it is crucial for health educators to have a nobler understanding of the dietary preferences of the people. Thus, this study was aimed at assessing the

Table 1: Endorsement rates for Yale Food Addiction Scale "symptoms"

Item	Classification of YFAS	Total subjects (100)	
		Food addiction	No food addiction
1	Substance taken in larger amount and for longer period than intended	2	98
2	Persistent desire or repeated unsuccessful attempts to quit	8	92
3	Much time/activity to obtain, use, recover	10	90
4	Important social, occupational, or recreational activities given up or reduced	76	24
5	Use continues despite knowledge of adverse consequences	28	72
6	Tolerance (marked increase in amount; marked decrease in effect)	24	76
7	Characteristic withdrawal symptoms; substance taken to relieve withdrawal	8	92
8	Use causes clinically significant impairment or distress	6	94

YFAS: Yale Food Addiction Scale

Table 2: Participant characteristics

Variable	Mean ± SD	
	Women	Men
Height (cm)	164.2±11.8	166.0±7.9
Body weight (kg)	65.0±11.9	69.9±9.2
BMI	24.1±2.6	24.5±2.8
Waist circumference (cm)	95.4±7.7	99.1±7.3
BP systolic (mm/Hg)	120.0±7.0	117.5±9.2
BP diastolic (mm/Hg)	76.6±4.7	80.8±8.6

BMI: Body mass index; SD: Standard deviation; BP: Blood pressure

prevalence of food addiction among the selected diabetes subjects.

The criteria for "food addiction" are met when three or more symptoms are present within the past 12 months and clinically significant impairment or distress is present. The Likert scoring option is used for food addiction symptom counts (e.g., tolerance and withdrawal) ranging from 0 to 7 symptoms.[8,9]

The item (4) in YFAS, avoiding important social get together, occupational, or recreational activities for the fear of noncompliance to dietary regimen was endorsed by a majority of the participants (76%) while item (2) persistent desire or repeated unsuccessful attempts to control over eating were accepted by 6% of subjects. It was really astounding to interpret from item (1) that only 2% of the participants reported that they took food in a larger amount and for a longer period than intended. Another item (5) which assessed continued eating despite knowledge of adverse consequences was endorsed by 28% of the sample.

Among the selected samples 8% had characteristic withdrawal symptoms and took certain substance taken to overcome withdrawal symptoms. An item that was rarely endorsed by the participants was use causes clinically significant impairment or distress. It is conflicting that while 98% of subjects endorsed for restricting the larger amount of food than intended, 92% of subjects reported persistent desire or repeated unsuccessful attempts to quit overeating.

It could be concluded from the study that that except 6% of the subjects, there were no diagnoses of food addiction among the selected diabetes subject. Thus, only 6% out of the selected diabetic subjects had a food addiction. The prevalence of "food addiction" in the large population needs to be assessed, and this is a primary step toward evaluating the probable impact of "food addiction" to diabetes.

Conflicts of interest
There are no conflicts of interest.

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