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Letter to the Editor

Estimation of the attitude toward diet in hospitalized patients with diabetes by assessing bedside snacks - A common practice based on false assumptions

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Moral judgment and Stigmatization are common in our society [1], and health care professionals are no different [2–5]. Patients who trigger moral judgment are often patients in which the medical condition is perceived as controllable by the patient (obese patients, smokers and others) and physicians occasionally use shaming and stigmatization toward them, seemingly with good intentions as they hope to encourage them to better health [2,4]. However, studies suggest counterproductive consequences [2,4,6]. In this study, we attempted to evaluate how common is this phenomenon, and if there is truly a correlation between the amount of bedside carbohydrates and glycemic control.

The study was conducted in the internal medicine departments of Soroka University Medical Center (SUMC), a tertiary level, which is the only medical center in Southern Israel.

Physicians practicing in the internal medicine departments at SUMC during November 2018 were asked to fill a self-administered questionnaire. The participants were asked to grade their evaluation of the strength of correlation between the amount of carbohydrates in the snacks and beverages packages on and inside the bedside cabinet and the patient's glycemic status, and would they reflect on a patient's large quantity of snacks and beverages packages on and inside the bedside cabinet in a scale of 1–5 (1-Strongly disagree, 2-Disagree, 3-Neither agree nor disagree, 4-Agree, 5-Strongly agree). In addition, we enrolled 116 hospitalized adult patients with diabetes and an HbA1c% test done within the previous 3 months from November 2017 to September 2018. Demographic and clinical data were collected from the patient electronic medical record and Charlson Comorbidity Index [7] was calculated. A structured interview (in Hebrew) evaluated patient reported source and consumption of bedside food. The snacks and beverages packages on and inside the bedside cabinet of the patient were photographed by the researcher. Snacks and beverage packages containing a nutritional value label were assessed to extract the content of carbohydrates per package. Unlabeled snacks and beverages packages were estimated grossly for weight and nutritional value by using tables of nutritional value database [8].

Overall, 46 physicians (20 females and 26 males) responded to the questionnaire; 33 (78%) and 10 (22%) attendings. One physician refused to participate. The mean age of residents and interns who responded was 30.8 years old and the mean age of residents who responded was 45.8 years old. The correlation between bedside snacks and glycemic state of patients with diabetes was estimated as high (4–5 out of 5) by 80% of the participants. The tendency to criticize or reflect of patients' bedside snacks was high (4–5 out of 5) according to 76% of the participating physicians. The median tendency to criticize or reflect on a patient's bed side snacks was lower for residents 4/5 (IQR 3,5) than in attendings 5/5 (IQR 5,5) (p = .024). We enrolled 116 eligible patients; 43 females and 73 males, the mean age was 63.5 years old. Five patients refuse to participant in this study. The median bedside carbohydrate content was 90 g (IQR 0,240.25) (Range 0–1642). Patients were divided and compared between groups of above and below the median. Carbohydrate content was not associated with age, gender, marital status, comorbidities, primary hospitalization diagnoses and length of hospital stay. However, patients that had larger amounts of bedside carbs had more children, 4 (IQR 3,8) vs. 3 (IQR 2,6) (p = .030) (Table 1).

The distribution of carbohydrates by types of edibles shows that they were comprised mainly by sweetened drinks (41%); then pastries (18%), fruits and vegetables (16%), sour snacks (14%). From the patients that had any carbohydrates at their bedside cabinet, 59% reported that the consumers of the snacks and carbonated beverages are also other people (family, friends, hospital workers, other patients), and 27% reported that the snacks are consumed exclusively by other people. Furthermore, 35% of patients reported that they are the only consumer of the snacks. From all the patients that enrolled to this study, 36 patients didn't have any food or beverages. Patients with more snacks had more visitors as consumers of their snacks (family, friends and other patients) (3 (IQR 3,4) vs 3 (IQR 1,3), p = .012) and reported lower hospital food satisfaction (8 (36%) vs 39 (67%), p = .008).

Multivariable analysis showed no correlation between carbohydrate amount in bedside snacks and beverages of hospitalized patients with diabetes and their glycemic state, as shown by HbA1c% levels (β = 0.029, p = .753, CI = -0.087–0.120), this analysis was not normally distributed. Time since initial diagnosis of diabetes correlated directly with HbA1c% levels (β = 0.309, p = .001, 95% CI = 0.025–0.097), per 1 year increase.

In this observational study, we demonstrated that physicians

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Table 1
Baseline demographic and physiologic characteristics.

	Amount of carbohydrates in snacks and beverages ≤ 90 g *n* = 58	Amount of carbohydrates in snacks and beverages > 90 g n = 58	*P*-Value
Age (years), *Mean ± SD*	65.2 ± 10.8	61.8 ± 10.9	0.096
Male sex, *n (%(*	35 (60%)	38 (65%)	0.564
Married, *n (%)*	41 (71%)	40 (69%)	0.840
Number of children, *Median (Q1,Q3)*	3 (2,6)	4 (3,8)	**0.030**
BMI[a] (Kg/m^2), *Mean ± SD*	28.1 ± 6.5	29.5 ± 4.5	0.157
Charlson Comorbidity Index score, *Median (Q1,Q3)*	5 (4,7)	5 (3,6)	0.086
Years from initial diagnosis of diabetes, Median (Q1,Q3)	10 (4,21)	9 (4,15)	0.331
Primary diagnosis			0.495
Cardiac	30 (52%)	36 (62%)	
Respiratory	10 (17%)	9 (15%)	
Other	18 (31%)	13 (22%)	
Hospitalization days, Median (Q1,Q3)	2 (1,5)	3 (2,4)	0.437
HbA1c%[b], *Mean ± SD*	7.6 ± 1.7	7.7 ± 1.9	0.687

Divided by total carbohydrate median, defined by package content. The bold significe the value $p < 0.05$.
[a] *BMI-body mass index.*
[b] *HbA1c%- hemoglobin A1c.*

strongly believe that the level of diabetes control is associated with high sugar containing products kept by hospitalized patients with diabetes. Many of the interviewed physicians (and especially attendings), acknowledge reflecting that to patients with large quantity of snacks and beverages packages in an attempt to encourage patients with diabetes to consume less carbohydrates.

However, we found no correlation between the HbA1c% levels of the patients and the amount of carbohydrates they have at their bedside cabinet. High bedside cabinet carbohydrate content was found to be associated with higher number of children of the patients, and patients reported that visitors consumed those nutritional products.

Interestingly, the recruiter felt and reported that the main concern of patients, during the recruitment to the study, was that the photographs of the bedside cabinet would not be shown to the department's physicians. Many of them reported being embarrassed and shamed by physicians' remarks on their diet during rounds.

Similar to obese patients, patients with diabetes who suffer from stigmatization and shaming from their physicians reported that it lowers their self-esteem and feels like an attack on the their sense of self-control [9]. Literature has little information about the common practice of physicians' judgmental attitude, “Carbophobia” and shaming toward patients with diabetes during hospitalization. However, the social role of food during hospitalization was found to be influenced by individual cultural, social, economic and environmental factors [10].

Our study adds that according to the patients self-report the food is in many cases not even consumed by them, as they tend to share the snacks with family, friends, hospital workers and other patients. This study is the first to turn a spotlight on the phenomenon of physicians' “Carbophobia” and the false judgmental approach of physicians to inpatients with diabetes.

Declaration of Competing Interest

None.

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