Nutrition counsellors' recommended eating patterns for individuals with type 2 diabetes in the USA

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ABSTRACT

Introduction Multiple eating patterns can promote glycaemic control and weight loss among patients with type 2 diabetes mellitus (T2D). Clinical practice guidelines for T2D management encourage health professionals to guide patients' selection of a patient-centred eating pattern. This study aims to characterise beliefs about and recommendations for and against practice guideline-concordant eating patterns among registered dietitians (RDs) and other healthcare professionals who provide nutrition counselling to patients with T2D.

Methods This was a cross-sectional online survey. We invited 82 RDs affiliated with an academic health system in the midwestern USA to participate. We also invited health professionals who provide nutrition counselling to patients with T2D and are affiliated with 264 primary care practices within the Michigan Collaborative for Type 2 Diabetes. Participants were asked to select the eating pattern(s) that they commonly recommend or avoid for patients with T2D and why.

Results Survey respondents (n=81) most commonly recommend low-carbohydrate (77.8%); Mediterranean-style (52.8%) and energy-modified/calorie-restricted (36.1%) eating patterns. Survey respondents most commonly recommend avoiding very low-carbohydrate (51.0%) and very low-calorie (49.0%) eating patterns. Respondents who did not recommend very low-carbohydrate were most concerned about the eating pattern being too restrictive (93.0%).

Conclusions Survey respondents recommend a range of guideline-adherent eating patterns to patients with T2D but tend to recommend against very low-carbohydrate and very low-calorie eating patterns. Additional strategies are needed to increase patient-centred use of these evidence-based options in clinical practice settings.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Multiple eating patterns can support glycaemic control and weight loss among patients with type 2 diabetes mellitus (T2D).

WHAT THIS STUDY ADDS

⇒ Registered dietitians and other primary care health professionals who provide nutrition counselling to patients with T2D responded to this survey. Respondents commonly recommend low-carbohydrate, Mediterranean-style and energy-modified/calorie-restricted-eating patterns, but commonly recommend against other effective treatment strategies, including very low-carbohydrate and very low-calorie eating patterns.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The findings of this study demonstrate a need for additional efforts to increase patient-centred use of all evidence-based eating patterns in clinical practice settings.

INTRODUCTION

The global prevalence of diabetes in 2021 among adults was estimated to be over 530 million (10.5%) and is projected to exceed 780 million by 2045.[1] In the USA, an estimated 38 million adults have diabetes, and most (90%–95%) have type 2 diabetes mellitus (T2D).[2] T2D is a leading cause of morbidity, mortality and healthcare spending,[3] with over US$410 billion attributable to medical costs for diabetes in 2022.[4]

Fortunately, a range of dietary change approaches that support an energy deficit can support glycaemic control and weight loss[5 6] and reduce healthcare costs[7] among patients with T2D. Clinical practice guidelines for T2D increasingly call for use of nutrition counselling strategies tailored to individual patients' preferences and needs rather than use of one-size-fits-all dietary change advice.[8–13] Clinical practice guidelines for T2D management from USA[10 11] and international[12 13] organisations recommend patient-centred nutrition counselling for adults with T2D. The American Diabetes Association's 2024 Standards of Care in Diabetes recommends considering a reduction in overall carbohydrate intake to improve glycaemia and supports use of a variety of eating patterns, including Mediterranean-style, vegetarian, vegan,
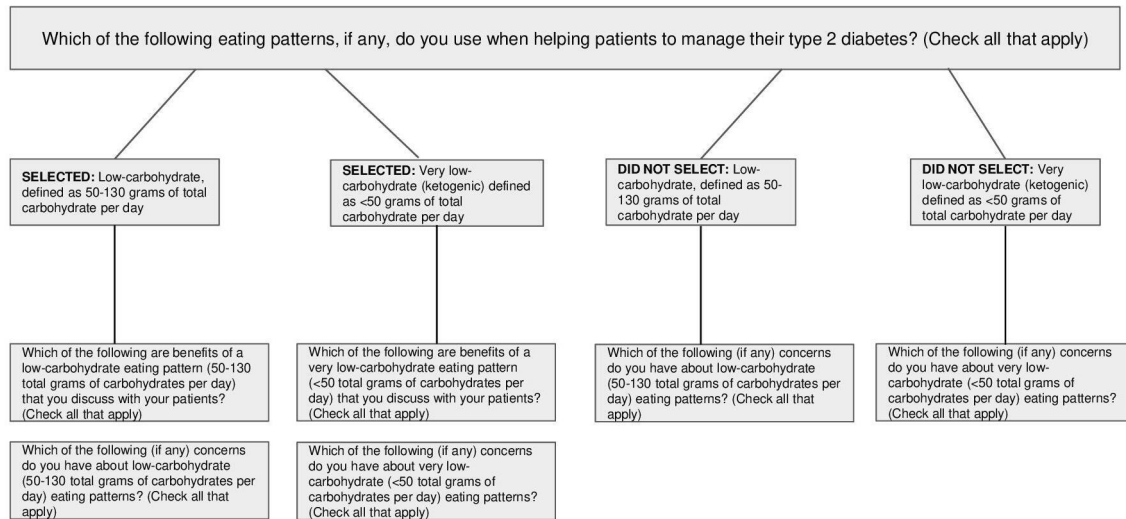
Figure 1 Visualisation of branching logic incorporated for questions on low and very low-carbohydrate eating patterns. Overview of the branching logic for questions related to low-carbohydrate and very low-carbohydrate eating patterns to help manage T2D in patients. Participants who selected low-carbohydrate and/or very low-carbohydrate eating patterns were asked follow-up questions regarding their perceived benefits and concerns with the eating pattern(s). Participants who did not select low-carbohydrate and/or very low-carbohydrate eating patterns were asked a follow-up question regarding their perceived concerns with the carbohydrate-restricted eating pattern(s). T2D, type 2 diabetes.

low-fat, low-calorie and very low-calorie, low-carbohydrate and very low-carbohydrate, and Dietary Approaches to Stop Hypertension (DASH).[9 14]

Certain dietary approaches are particularly effective in helping patients with T2D achieve glycaemic control with fewer or no medications.[15 16] Such approaches include very low-calorie eating patterns (commonly defined as 400–800 kilocalories per day),[17] very low-calorie meal replacement programmes[18] and low-carbohydrate and very low-carbohydrate eating patterns (commonly defined as less than 130 g of total carbohydrate per day and less than 50 g of total carbohydrate per day, respectively).[19 20]

The Diabetes Remission Clinical Trial demonstrated that use of very low-calorie meal replacements for 3–5 months followed by gradual reintroduction of low-calorie foods supported weight loss and T2D remission (defined as hemoglobin A1C (HbA1c) <6.5% measured at least 3 months after cessation of glucose-lowering pharmaco-therapy[16]) among 46% of participants at 1 year,[21] 36% at 2 years[22] and 23% at 5 years.[23]

Low-carbohydrate and very low-carbohydrate diets can also support weight loss and glycaemic control among patients with T2D, with lower carbohydrate intake generally associated with greater reductions in HbA1c.[24] Few randomised controlled trials have examined T2D remission among individuals who follow carbohydrate-restricted eating patterns.[25] However, non-randomised data from individuals who self-selected participation in a very low-carbohydrate diet programme demonstrated that 25% (52/204) and 35% (71/204) achieved HbA1c <6.5% with no medications for T2D or metformin alone, respectively, at 1 year (vs 10% of usual care participants).[26] These results were maintained for 24 months.[27] In an 8-year evaluation from a general practice setting in the

UK, carbohydrate-restricted eating patterns supported weight loss (10 kg mean difference from baseline), T2D remission (51%, n=94/186) and reduced healthcare spending (over £68 000 per year).[28]

Despite recommendations for individualised nutrition counselling and growing data demonstrating the benefits of very low-calorie and very low-carbohydrate eating patterns among patients with T2D, little is known about nutrition counsellors' dietary recommendations in general practice settings. To better understand nutrition counsellors' use of the full range of evidence-based eating patterns, we surveyed registered dietitians (RDs) and other health professionals who provide nutrition counselling to patients with T2D (eg, nurses, certified diabetes educators, care managers). The aim of this study was to describe eating patterns that nutrition counsellors commonly recommend patients with T2D to follow or avoid, and the rationale for their recommendations.

METHODS

Study design

This was a cross-sectional, online survey. Data collection occurred between April 2022 and October 2022.

Context

The Michigan Collaborative for Type 2 Diabetes (MCT2D) is a statewide quality improvement initiative funded by Blue Cross Blue Shield of Michigan that aims to improve care and outcomes for patients with T2D through both medication-focused and lifestyle-focused strategies. At the time of survey administration, MCT2D included 264 primary care practices from 28 physician organisations (POs). MCT2D has created a variety of

Table 1 Demographic characteristics of survey respondents*

	n (%)
Practice in Michigan	54 (100.0)
Offers virtual visits	26 (96.3)
Age	
18–24	1 (1.8)
25–34	8 (14.5)
35–44	26 (47.3)
45–54	13 (23.6)
55–64	6 (10.9)
65+	1 (1.8)
Race/ethnicity	
Asian or Pacific Islander	4 (6.7)
Hispanic or Latino	2 (3.3)
Multiracial	1 (1.7)
White	47 (78.3)
Prefer not to answer	6 (10.0)
Gender	
Female	54 (90.0)
Male	3 (5.0)
Prefer not to answer	3 (5.0)
Practice setting	
Academic medical system	15 (25.0)
For-profit medical system	8 (13.3)
Non-profit medical system	26 (43.3)
Research	1 (1.7)
Private practice	8 (13.3)
Private practice, non-profit medical system	1 (1.7)
Private practice, telehealth company	1 (1.7)
Years in clinical practice	
0–5	8 (13.3)
6–10	11 (18.3)
11–15	17 (28.3)
16–20	10 (16.7)
21+	14 (23.3)
Job title†	
Registered dietitian	44 (73.3)
Registered nurse	11 (18.3)
MD/advanced practice provider	4 (6.7)
PharmD	1 (1.7)

*Not all participants responded to survey questions. The denominator for each percentage is the total number of participants who completed the respective question.
†Participants may have additional credentials such as Master of Public Health, Certified Diabetes Care and Education Specialist and Diabetes Self-Management Education and Support.

educational initiatives to increase providers' familiarity with and patient-centred use of carbohydrate-restricted eating patterns (see online supplemental materials 1–6).

Participants and recruitment

We used convenience sampling to survey health professionals in Michigan who provide nutrition counselling to patients with T2D. Initially, the survey was administered via email to clinical champions (representatives) of the POs enrolled in MCT2D (n=264). The clinical champions were asked to distribute the survey to healthcare professionals within their PO who provide nutrition counselling to patients with T2D. Additionally, to expand our sample size, we sent our survey via email to RDs affiliated with one large, academic medical centre in the midwestern USA (n=82). Participation in the survey was voluntary. The reporting of this study follows the Checklist for Reporting of Survey Studies.[29]

Survey design

Survey items were developed using a multistep process. Initial survey questions were drafted by study team members, including physicians with expertise in obesity medicine and T2D (DHG, JReiss, JRau, JEA and RH). Survey items were informed by prior literature,[30] clinical practice guideline recommendations for T2D[8–11] and team members' clinical expertise. Initially, the survey was distributed to a single practice within MCT2D before it was disseminated more broadly to the MCT2D clinical champions and RDs affiliated with the medical centre. The survey is included as online supplemental material 7 and summarised in the summary of survey items.

Summary of survey items
Eating pattern recommendations for patients with T2D

Participants were asked to estimate the percentage of their patient caseload with T2D, and then select the eating pattern(s) that they commonly recommend to help patients manage their T2D with the choices being: low-carbohydrate (defined as 50–130 g of total carbohydrate per day), Mediterranean-style, energy-modified/calorie-restricted, non-restrictive/intuitive eating, low-fat, DASH (low-sodium), vegetarian, intermittent fasting/time-restricted eating, vegan, meal replacement, paleo, very low-carbohydrate (ketogenic; defined as less than 50 g of total carbohydrate per day), very low-calorie (defined as less than 800 kcal per day) and other(s). Participants were then asked to report the top three factors influencing their decision to recommend these specific eating patterns. Subsequently, they were asked to select eating patterns (if any) that they recommend patients with T2D avoid. Respondents who recommended low-carbohydrate and/or very low-carbohydrate eating pattern(s) to their patients were also asked to report their perceived benefits and concerns about those eating pattern(s) (figure 1). Respondents who did not select use of low-carbohydrate and/or very low-carbohydrate eating pattern(s) were asked to report their concerns about those eating pattern(s) (figure 1). A question addressing the type of resources and support that would be helpful in offering low-carbohydrate counselling was asked to all participants completing the survey. Online supplemental material 8

Table 2 Eating pattern(s) that nutrition counsellors recommend patients with T2D follow and factors influencing recommendations*

	Mean±SD or n (%)
Sliding scale to estimate the percentage of your total patient caseload who have a diagnosis of type 2 diabetes	61.4±26.6
Recommended eating patterns (check all that apply)	
Low-carbohydrate, defined as 50–130 g of total carbohydrate per day	56 (77.8)
Mediterranean-style	38 (52.8)
Energy-modified/calorie restricted	26 (36.1)
Non-restrictive/Intuitive eating	18 (25.0)
Low-fat	17 (23.6)
Other(s)	15 (20.8)
DASH (low-sodium)	15 (20.8)
Vegetarian	12 (16.7)
Intermittent fasting/time-restricted eating	11 (15.3)
Vegan	8 (11.1)
Meal replacement	8 (11.1)
Paleo	4 (5.6)
Very low-carbohydrate (ketogenic), defined as <50 g of total carbohydrate per day	4 (5.6)
Very low-calorie, defined as <800 kcal per day	1 (1.4)
Factors influencing decision to recommend eating patterns (select top three)†	
My professional expertise concerning the eating pattern (s)	54 (74.0)
The patient's preference	46 (63.0)
Success of eating pattern(s) with previous patients	44 (60.3)
The patient's prior failure with other eating patterns	43 (58.9)
Clinical practice guidelines	43 (58.9)
The patient's prior success with these eating pattern(s)	42 (57.5)
The scientific evidence for the eating pattern(s)	38 (52.1)
The patient's cultural traditions	32 (43.8)
The patient's food budget	29 (39.7)
Likelihood of long-term weight loss	24 (32.9)
Other medical conditions	21 (28.8)
The typical practice patterns at my site	13 (17.8)
My own personal experience with following the eating pattern(s) myself	12 (16.4)
US Health and World Report Ranking	2 (2.7)
Other(s)	1 (1.4)
Are there any eating pattern strategies that you recommend patients avoid when managing their type 2 diabetes?	
Yes	51 (69.9)
No	22 (30.1)
Recommended eating patterns to avoid (check all that apply)	
Very low-carbohydrate (ketogenic), defined as <50 g of total carbohydrates per day	26 (51.0)
Very low-calorie, defined as <800 kcal per day	25 (49.0)
Other(s)	12 (23.5)
Intermittent fasting/time-restricted eating	10 (19.6)
Low-fat	7 (13.7)
Paleo	6 (11.8)
Non-restrictive/intuitive eating	4 (7.8)

Continued

Table 2 Continued

	Mean±SD or n (%)
Energy-modified/calorie restricted	3 (5.9)
Mediterranean-style	2 (3.9)
Vegan	2 (3.9)
Vegetarian	1 (2.0)
DASH (low sodium)	1 (2.0)
Meal replacement	1 (2.0)
Low-carbohydrate, defined as 50–130 g of total carbohydrate per day	1 (2.0)

*Not all participants responded to survey questions. The denominator for each percentage is the total number of participants who completed the respective question.
†Participants were asked to select the top three factors that influence their decision to recommend eating patterns to patients with T2D; however, certain participants selected more than three options.
DASH, Dietary Approaches to Stop Hypertension; T2D, type 2 diabetes.

shows the guidelines used to guide carbohydrate-restricted eating patterns for patients with T2D.

Nutrition counsellors were asked to self-report their demographic characteristics, including age, race, ethnicity, gender, professional credentials and number of years in clinical practice.

Data collection

REDCap electronic data capture tools hosted at the University of Michigan were used for electronic survey distribution and data collection.[31]

Data analysis

Descriptive analyses on the survey items were conducted, including mean, SD, frequencies and percentages.

Table 3 Resources and additional support that nutrition counsellors would find helpful for low-carbohydrate counselling

Additional resources and support that would be helpful for offering low-carbohydrate counselling (check all that apply)	(n (%)) (n=60)
Handouts	46 (76.7)
Low-carbohydrate diet meal plan	45 (75.0)
Websites	37 (61.7)
Patient support groups	28 (46.7)
Books	13 (21.7)
Case conferences	13 (21.7)
Patient-facing videos	12 (20.0)
Consulting services	9 (15.0)
I do not plan to provide low-carbohydrate counselling	7 (11.7)
Other(s)	2 (3.3)
None-I have sufficient resources/support	1 (1.7)

RESULTS

A total of 81 individuals responded to the survey. Responding to the demographic characteristics was not required, therefore, not all participants provided responses to all questions of the survey. Of those who responded to the demographic questions, approximately half were between the ages of 35–44 years (n=26, 47.3%) and most were white (n=47, 78.3%) and female (n=54, 90.0%). Approximately 73% were RDs (n=44). Additional respondent characteristics are shown in table 1.

On average, participants estimated that 61% (SD=26.6) of their patients have diagnosed T2D. Table 2 shows the eating patterns that survey respondents recommend that patients with T2D follow or avoid, and the factors that influence these recommendations. Participants most reported recommending low-carbohydrate (n=56, 77.8%), Mediterranean-style (n=38, 52.8%) and energy-modified/calorie-restricted (n=26, 36.1%) eating patterns. They reported that these recommendations were influenced by professional expertise concerning the recommended eating pattern (n=54, 74.0%), patients' preferences (n=46, 63.0%) and successful use of the eating pattern with previous patients (n=44, 60.3%). Participants' nutrition counselling recommendations were less frequently influenced by personal experience with the eating pattern (n=12, 16.4%) and US Health and World Report Rankings (n=2, 2.7%). Most participants (n=51, 69.9%) selected at least one eating pattern that they recommend patients with T2D avoid. The two most frequently recommended eating patterns to avoid were very low-carbohydrate (n=26, 51.0%) and very low-calorie (n=25, 49.0%).

Table 3 shows the additional resources and support that respondents would find helpful in offering low-carbohydrate counselling. Respondents reported that handouts (n=46, 76.7%) and low-carbohydrate diet meal plans (n=45, 75.0%) would be helpful when offering low-carbohydrate counselling to patients. Seven (11.7%) respondents did not indicate the need for additional

Table 4 Perceived benefits and concerns in respondents who selected low-carbohydrate eating patterns for patients with T2D

Participant who selected use of low-carbohydrate eating pattern(s) for patients with T2D	Low carbohydrate* (n (%)) (n=56)
Benefits of eating patterns: selected eating patterns (check all that apply)	
Weight loss	52 (92.9)
Glycaemic control	51 (91.1)
Medication reduction	42 (75.0)
Decreased cardiovascular risk factors	26 (46.4)
Craving reduction	22 (39.3)
Hunger reduction	21 (37.5)
None	2 (3.6)
Other(s)	1 (1.8)
Concerns of eating patterns: selected eating patterns (check all that apply)	
Difficult to sustain over time	38 (67.9)
Too restrictive	29 (51.8)
Risk of hypoglycaemia	23 (41.1)
Insufficient fruit intake	20 (35.7)
Insufficient whole grain intake	18 (32.1)
Risk of disordered eating	18 (32.1)
Too expensive for patient	13 (23.2)
Risk of increased cholesterol	11 (19.6)
Risk of cardiovascular disease	9 (16.1)
Lack of long-term safety data	9 (16.1)
None	8 (14.3)
Insufficient vegetable intake	7 (12.5)
Too many side effects	7 (12.5)
Lack of evidence showing benefit	3 (5.4)
Other(s)	3 (5.4)
Lack of short-term safety data	2 (3.6)
Risk of hypotension	1 (1.8)

*Only four participants selected very low-carbohydrate as an eating pattern they recommend for patients with T2D; therefore, their responses were excluded due to low sample size.
T2D, type 2 diabetes.

resources or support for low-carbohydrate counselling, as they do not plan to provide this type of counselling to patients.

Table 4 shows respondents' perceived benefits of and concerns about low-carbohydrate eating patterns. Among the 56 participants who reported recommending a low-carbohydrate eating pattern for patients with T2D, the three most frequently selected perceived benefits were weight loss (n=52, 92.9%), improved glycaemic control (n=51, 91.1%) and medication reduction (n=42, 75.0%). The three most frequently chosen concerns were difficult to sustain over time (n=38, 67.9%), too restrictive (n=29, 51.8%) and risk of hypoglycaemia (n=23, 41.1%). Very few participants reported recommending very low-carbohydrate eating patterns to patients with T2D (n=4, 5.6%).

Table 5 shows the concerns of respondents who did not select low-carbohydrate and very low-carbohydrate eating patterns. Participants who did not select use of low-carbohydrate eating patterns for management of T2D (n=15) reported that their top three concerns were difficult to sustain over time (n=12, 80.0%), too restrictive (n=9, 60.0%) and insufficient fruit intake (n=5, 33.3%). The majority (n=57) of participants did not select use of very low-carbohydrate eating patterns and their most frequently chosen concerns were too restrictive (n=53, 93.0%), difficult to sustain over time (n=47, 82.5%) and insufficient fruit intake (n=31, 54.4%).

DISCUSSION

To our knowledge, this is the first study to broadly characterise the eating pattern(s) that nutrition counsellors recommend patients with T2D to follow and avoid, and the factors influencing these recommendations. Survey respondents most commonly recommend low-carbohydrate, Mediterranean-style and energy-modified/calorie-restricted-eating patterns. Consistent with clinical practice guidelines supporting patient-centred use of these eating patterns,[9] our findings suggest that nutrition counsellors commonly use patients' preferences to guide dietary recommendations. Prior survey research among UK dietitians similarly demonstrated that respondents recommend low-carbohydrate (<130 g of total carbohydrates per day) and moderate carbohydrate (130–225 g of total carbohydrate per day) eating patterns (vs high carbohydrate eating patterns, defined as >225 g of total carbohydrate per day).[32]

Survey respondents most commonly recommend that patients with T2D avoid very low-carbohydrate (26/51; 51.0%) and very low-calorie (25/51; 49.0%) eating patterns and very few respondents recommend use of these eating patterns among patients with T2D. In contrast, a cross-sectional study of UK dietitians found that 58.1% (75/129) of participants had recommended use of very low-calorie and low-calorie eating patterns for T2D remission and management,[33] and these eating patterns are supported by clinical practice guidelines for T2D management.[8 9 11]

Consistent with our findings, a survey of 199 RDs in Indiana, USA demonstrated that most respondents never had (93%) or never would (63%) recommend a very low-carbohydrate eating pattern to patients with T2D, largely due to perceptions that the eating pattern lacks scientific evidence.[34] Among our survey respondents, few (7/57; 12.3%) indicated concern about lack of evidence supporting very low-carbohydrate diets. This may be due, in part, to growing endorsement by clinical practice guidelines of carbohydrate-restricted eating patterns as

Table 5 Perceived concerns in respondents who did not select low-carbohydrate and very low-carbohydrate eating patterns for patients with T2D

Participant who did not select use of carbohydrate-restricted eating pattern(s) for patients with T2D	Low carbohydrate (n (%)) (n=15)	Very low carbohydrate (n (%)) (n=57)
Concerns of eating patterns: did not select eating patterns (check all that apply)		
Difficult to sustain over time	12 (80.0)	47 (82.5)
Too restrictive	9 (60.0)	53 (93.0)
Insufficient fruit intake	5 (33.3)	31 (54.4)
Risk of hypoglycaemia	4 (26.7)	23 (40.4)
Risk of disordered eating	4 (26.7)	23 (40.4)
Risk of cardiovascular disease	4 (26.7)	18 (31.6)
Lack of long-term safety data	4 (26.7)	17 (29.8)
Insufficient whole grain intake	3 (20.0)	28 (49.1)
Risk of increased cholesterol	3 (20.0)	15 (26.3)
Insufficient vegetable intake	3 (20.0)	15 (26.3)
Lack of evidence showing benefit	2 (13.3)	7 (12.3)
Too expensive for patient	2 (13.3)	12 (21.1)
None	1 (6.7)	1 (1.8)
Too many side effects	1 (6.7)	18 (31.6)
Other(s)	1 (6.7)	5 (8.8)
Lack of short-term safety data	0	4 (7.0)
Risk of hypotension	0	3 (5.3)

T2D, type 2 diabetes.

viable options for patients with T2D[8–11 14 35] and MCT2D's educational initiatives (see online supplemental materials 1–6). Among our survey respondents, key reasons for not recommending a very low-carbohydrate eating pattern included perceptions that the eating pattern is too restrictive (53/57, 93.0%) and difficult to sustain over time (47/57, 82.5%). It is worth noting the subjective nature of these concerns, which do not reflect the eating pattern's potential effectiveness or the ability for some individuals to enjoy and choose to sustain very low-carbohydrate eating.[36 37] Thus, nutrition counsellors' subjective concerns should be weighed against patients' preferences.

Our findings reveal potential opportunities to support use of low-carbohydrate eating patterns. Specifically, participants indicated that access to handouts (46/60, 76.7%), low-carbohydrate diet meal plans (45/60, 75.0%) and websites (37/60, 61.7%) could support their use of low-carbohydrate counselling in clinical practice. Additional work should focus on developing, implementing and evaluating the effectiveness of such resources in clinical practice settings.

This study has several limitations. First, our sample included nutrition counsellors from either one academic health system or those affiliated with MCT2D participating practices. Thus, our findings may not be generalisable to other groups. Second, due to our sampling strategy, we do not know how many people received the survey and are, therefore, unable to report a response rate. Third, our data was prone to sampling bias, as survey participants included those who may have been exposed to MCT2D's low-carbohydrate educational initiatives and patient-facing tools (eg, handouts, websites) to facilitate use of low-carbohydrate and very low-carbohydrate eating patterns. Fourth, due to the self-reported nature of this survey, we do not know the degree to which nutrition counsellors' responses align with their clinical practice patterns. Fifth, because this was a survey study, we could not fully explore nuances influencing participants' responses and/or factors that might alter nutrition counselling recommendations. We plan to conduct follow-up qualitative interviews with a subset of survey respondents to obtain a deeper understanding of nutrition counselling practices and opportunities to support use of the full range of evidence-based eating patterns in clinical practice settings.

CONCLUSION

Michigan nutrition counsellors make patient-centred recommendations for many guideline-adherent eating patterns for patients with T2D. However, few recommend very low-calorie and very low-carbohydrate eating patterns, though these approaches are supported by clinical practice guidelines for T2D management.[8–11] Additional efforts should focus on disseminating knowledge

about these approaches and bolstering resources to support their safe and effective implementation in real-world practice settings.

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