

Contents lists available at [ScienceDirect](http://www.sciencedirect.com)

Canadian Journal of Diabetes

journal homepage:
www.canadianjournalofdiabetes.com

 Canadian
Diabetes
Association


Original Research

Assessing Intentions to Eat Low-Glycemic Index Foods by Adults with Diabetes Using a New Questionnaire Based on the Theory of Planned Behaviour

Tomoe Watanabe MSc, RD^a, Tanya R. Berry PhD^b, Noreen D. Willows PhD^a, Rhonda C. Bell PhD^{a,*}^a Department of Agricultural, Food and Nutritional Science, Faculty of Agricultural, Life and Environmental Sciences, Edmonton, Alberta, Canada^b Faculty of Physical Education and Recreation, University of Alberta, Edmonton, Alberta, Canada

ARTICLE INFO

Article history:

Received 18 October 2013

Received in revised form

22 July 2014

Accepted 3 September 2014

Keywords:

behavioral change

diabetes mellitus

low-glycemic index diet

theory of planned behavior

ABSTRACT

Objective: The Canadian Diabetes Association recommends that people with diabetes choose foods with low-glycemic index (GI). This study developed a questionnaire measuring Theory of Planned Behaviour (TPB) constructs relative to consuming a low-GI diet by people with diabetes so as to achieve a better understanding of which TPB constructs, demographic characteristics and diabetes-related variables best predict intention to consume a low-GI diet.

Method: A questionnaire to measure intentions to consume a low-GI diet was developed based on TPB constructs and was administered to 369 adults (30 to 75 years) with type 1 or type 2 diabetes. Responses were analyzed using multiple linear regression.

Results: More than 90% of participants (mean age, 56.5±10.8 years; mean body mass index, 30.5±7.2 kg/m²) cited reduction and maintenance of healthy blood glucose levels as an advantage of eating low-GI foods. Older age, higher income, female gender, having type 2 diabetes, diabetes treatment (diet only) and understanding of the GI were positively associated with intention to eat a low-GI diet. TPB constructs that significantly predicted intentions to eat a low-GI diet were instrumental attitude (beta = 0.24, p<0.001); subjective norms (beta = 0.13, p=0.007); and perceived behavioural control (beta = 0.55, p<0.001).

Conclusions: This new questionnaire is a valid tool to assess TPB constructs contributing to intentions to eat a low-GI diet by people with diabetes. Future studies that use this questionnaire can shed light on how TPB concepts in clinical practice can help people with diabetes to change their dietary intake.

© 2015 Canadian Diabetes Association

R É S U M É

Objectif : L'Association canadienne du diabète recommande que les personnes souffrant de diabète choisissent des aliments à faible indice glycémique (IG). Cette étude a permis l'élaboration d'un questionnaire qui mesure les concepts hypothétiques de la Théorie du comportement planifié (TCP) liés à l'adoption d'un régime à faible IG par les personnes souffrant du diabète afin d'acquérir une meilleure compréhension des concepts hypothétiques de la TCP, des caractéristiques démographiques et des variables liées au diabète qui offrent la meilleure prédiction de l'intention d'adopter un régime à faible IG.

Méthode : Un questionnaire qui mesure l'intention d'adopter un régime à faible IG a été élaboré selon les concepts hypothétiques de la TCP et a été rempli par 369 adultes (de 30 à 75 ans) souffrant du diabète de type 1 ou de type 2. Les réponses ont été analysées par la régression linéaire multiple.

Résultats : Plus de 90 % des participants (âge moyen, 56,5 ± 10,8 ans; indice de masse corporelle moyenne, 30,5 ± 7,2 kg/m²) ont invoqué comme avantage à consommer des aliments à faible IG la réduction et le maintien de concentrations glycémiques saines. L'âge avancé, le revenu plus élevé, le sexe féminin, le fait de souffrir du diabète de type 2, le traitement du diabète (régime seul) et la compréhension de l'IG ont été associés de manière positive à l'intention d'adopter un régime à faible IG. Les concepts hypothétiques de la TCP qui ont prédit de manière significative l'intention d'adopter

Mots clés :

changement de comportement

diabète sucré

régime à faible indice glycémique

théorie du comportement planifié

* Address for correspondence: Rhonda C. Bell, PhD, University of Alberta, 116 Street and 85 Avenue, Edmonton, Alberta T6G 2R3, Canada.

E-mail address: Rhonda.bell@ualberta.ca

un régime à faible IG étaient l'attitude instrumentale ($\beta = 0,24$, $p < 0,001$), les normes subjectives ($\beta = 0,13$, $p = 0,007$) et la maîtrise comportementale perçue ($\beta = 0,55$, $p < 0,001$).
Conclusions : Ce nouveau questionnaire s'avère un outil valide pour évaluer les concepts hypothétiques de la TCP qui contribuent à l'intention qu'ont les personnes diabétiques d'adopter un régime à faible IG. Des études subséquentes à l'aide de ce questionnaire pourraient expliquer comment les concepts de la TCP peuvent dans la pratique clinique aider les personnes diabétiques à changer leur apport alimentaire.

© 2015 Canadian Diabetes Association

Introduction

Medical nutrition therapy is an integral part of diabetes management, and carbohydrate intake is of particular importance because diabetes is characterized by abnormalities in glucose regulation. The glycemic index (GI) provides an assessment of the quality of carbohydrate-containing foods based on their ability to raise blood glucose (1). The Canadian Diabetes Association recommends that people with type 1 and type 2 diabetes choose foods with low GIs whenever possible, and studies consistently demonstrate that choosing a diet that emphasizes foods low in the GI has a positive, clinically significant effect on glycemic control (2,3). Better understanding of individual factors that predict whether a patient will regularly choose low-GI foods would be helpful in targeting nutrition education practices; however, the lack of an appropriate and validated questionnaire that measures the constructs that predict this behaviour hampers research.

Health behaviour theories such as the Theory of Planned Behaviour (TPB) provide a basis for understanding the adoption and maintenance of behaviours (4). The TPB allows for the understanding of what needs to be in place so that a health behaviour such as consuming a low-GI diet can be achieved. According to the TPB, intention to perform a behaviour is a necessary prerequisite for performing a behaviour. Intention is predicted by individuals' attitudes toward the behaviour (e.g. whether consuming a low-GI diet is considered beneficial); by subjective norms (e.g. whether people close to you think consuming a low-GI diet is important); and by their perceived behavioural control (PBC) (e.g. whether people are confident in their abilities to eat a low-GI diet and whether eating a low-GI diet is within their control) (5).

TPB constructs, including intentions, are strongly predictive of healthful eating. Patch and associates (6) conducted a study in Australian adults to examine the strength and relative importance of factors that influence intentions to consume novel products containing omega-3 fatty acids using the TPB framework. They demonstrated that attitudes, subjective norms and PBC explained 72.4% of the total variance in intentions to consume these foods. Similarly, in a study of adults with type 2 diabetes conducted by Gatt and Sammut (7), attitudes, subjective norms and PBC accounted for 49% of the total variance in intentions to perform self-care behaviours, including consuming a healthful diet. Lautenschlager and Smith (8) administered a TPB-based survey to youth, age 8 to 15 years, in a pre- and poststudy that was aimed at understanding their eating and gardening behaviours. Attitudes and PBC significantly explained intentions to change dietary behaviour in this population and was associated with increased consumption of fruits and vegetables. Mullan and associates (8) examined whether TPB predicted intentions to eat breakfast among adolescents from the United Kingdom and from Australia. In this group, PBC was the strongest predictor of intentions to consume breakfast. Blue (9,10) showed that the TPB model was effective in predicting physical activity and healthful eating among adults at risk for type 2 diabetes. TPB constructs have not been explored relative to regularly choosing a low-GI diet. The purpose

of this study was to 1) develop a questionnaire that measures TPB-related constructs, including intentions, relative to consuming a low-GI diet by persons with diabetes; and 2) to understand which TPB constructs, demographic characteristics and diabetes-related variables best predicted intention to consume a low-GI diet.

Methods

Study Design and Participants

Participants ($n=431$) were recruited through presentations at hospital-based diabetes education programs, weight management clinics, regional diabetes events, and advertisements distributed by the Alberta Diabetes Foundation and local media. All data were collected in 2008. The inclusion criteria included being 30 to 75 years of age, having type 1 or type 2 diabetes, and being able to read English. There was no criterion for the length of diagnosis and there was no incentive to complete the survey. The study was approved by the University of Alberta Research Ethics Board; consent to participate was implied by returning the questionnaire. Questionnaires included in these analyses ($n=369$) were at least 80% complete; this sample size is adequate for confirming questionnaire validity (11).

Questionnaires

Items for the Intentions to Eat Low GI questionnaire were developed to measure the TPB constructs of attitude, subjective norms, PBC and intention (12) (Table 1). The definition of GI was given in the questionnaire and was based on the phrasing used in the Canadian Diabetes Association Clinical Practice Guidelines (2003) as follows: "The Glycemic Index (GI) is a scale that ranks carbohydrate-rich foods by how much they raise blood glucose levels compared to a standard food. The standard food is glucose or white bread." Two suggestions for incorporating low-GI foods into meals were also provided (Table 2).

Attitude was measured by 7 items using instrumental (e.g. harmful/beneficial) and experiential adjectives (e.g. unpleasant/pleasant). All items began with the statement "My eating of low-GI foods often would be..." Norms were measured by 3 subjective norm questions (e.g. if important others think the behaviour should be performed) and by 2 descriptive norm questions (e.g. what important others do). PBC was operationalized with 5 items measuring self-efficacy and controllability. Behavioural intention was measured by 3 items. A knowledge section was developed based on previous research (13) and was included to allow assessment of how knowledge may interact with the other constructs (14). The following 4 items were used: 1) Eating low-GI foods more often may improve my blood sugar reading; 2) Choosing low-GI foods more often is a lifestyle change that helps to better manage my diabetes; 3) I am afraid eating low-GI foods more often may cause high blood sugar readings; and 4) If I eat low-GI foods more often, I can eat as many high-GI foods as I want. Responses were scored from strongly disagree to strongly

Download English Version:

<https://daneshyari.com/en/article/6086872>

Download Persian Version:

<https://daneshyari.com/article/6086872>

[Daneshyari.com](https://daneshyari.com)