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Original Research

Diabetes Distress and Depression in South Asian Canadians with Type 2 Diabetes

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ABSTRACT

Objectives: South Asians are disproportionately affected by diabetes compared to some other ethnic groups in Canada. Although depression and diabetes distress are psychological issues well studied in the general population of those with diabetes, they have not been investigated in South Asian Canadians with type 2 diabetes. We sought to identify the rates of depression and diabetes distress in South Asian adults with type 2 diabetes and to explore the relationship among glycemic control, depression and diabetes distress.

Methods: We recruited 41 South Asian adults with type 2 diabetes for this study. Glycated hemoglobin (A1C) levels were collected via venous puncture. We utilized the Diabetes Distress Scale to assess total diabetes distress and its subscales (emotional distress, interpersonal distress, regimen-related distress and physician distress) and the Personal Health Questionnaire-9 to assess depressive symptoms.

Results: The rate of depression was 15%, and the rate of total diabetes distress was 52.5%. Although neither measure was found to be correlated with A1C levels, depression had a moderate positive correlation with total diabetes distress ($r=0.696$; $p<0.001$); subscales of regimen distress and emotional burden emerged as the strongest correlates.

Conclusions: This is the first study to report that diabetes distress is a serious concern for South Asian Canadians with type 2 diabetes. Given that depression and diabetes distress are linked, studies recruiting a larger and more diverse sample of South Asian Canadians should be conducted to better understand the psychological issues that may impact diabetes self-management in this community.

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R É S U M É

Mots clés :

dépression

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Objectifs : Le diabète affecte de manière disproportionnelle les Asiatiques du Sud par rapport à certains autres groupes ethniques du Canada. Bien que la dépression et la détresse liée au diabète soient des problèmes psychologiques bien étudiés chez les personnes atteintes de diabète de la population générale, elles n'ont pas été examinées chez les Canadiens d'origine sud-asiatique atteints du diabète de type 2. Nous avons cherché à déterminer les taux de dépression et de détresse liée au diabète chez les adultes d'origine sud-asiatique atteints du diabète de type 2 et à explorer la relation entre la régulation de la glycémie, la dépression et la détresse liée au diabète.

Méthodes : Pour la présente étude, nous avons recruté 41 adultes d'origine sud-asiatique atteints du diabète de type 2. Les concentrations d'hémoglobine glyquée (A1c) ont été prélevées par ponction veineuse. Nous avons utilisé la Diabetes Distress Scale pour évaluer la détresse totale liée au diabète et ses sous-échelles (détresse émotionnelle, détresse interpersonnelle, détresse liée au régime de vie et détresse liée au médecin) et le Personal Health Questionnaire-9 pour évaluer les symptômes de dépression.

Résultats : Le taux de dépression était de 15 %, et le taux de détresse totale liée au diabète était de 52,5 %. Bien qu'aucune mesure ne fût en corrélation avec les concentrations d'A1c, la dépression montrait une corrélation positive modérée avec la détresse totale liée au diabète ($r=0,696$; $p<0,001$); les sous-échelles de la détresse liée au régime de vie et le fardeau émotionnel apparaissaient comme étant les corrélats les plus forts.

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Conclusions : Il s'agit de la première étude à rapporter que la détresse liée au diabète est une préoccupation sérieuse des Canadiens d'origine sud-asiatique atteints du diabète de type 2. Étant donné que la dépression et la détresse liée au diabète sont liées, des études recrutant un échantillon plus vaste et plus varié de Canadiens d'origine sud-asiatique devraient être menées pour mieux comprendre les problèmes psychologiques qui peuvent avoir des répercussions sur la prise en charge autonome du diabète dans cette communauté.

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Introduction

South Asians (individuals who self-identify as having roots in the Indian subcontinent) are the largest visible minority group in Canada, accounting for at least 4.8% of the Canadian population (1). The majority are foreign born and have recently immigrated. Compared to White Canadians, adults from this ethnic group are 2 to 3 times more likely to develop type 2 diabetes mellitus and diabetes-related complications at younger ages (2–4).

At present, a limited but growing body of literature has begun examining depression and its correlates in South-Asian adults with type 2 diabetes. Although some studies have found that when compared to White Europeans with type 2 diabetes, British South-Asians with type 2 diabetes have decreased rates of diagnosed depression (5,6), other research has reported no differences (7,8). Even more underinvestigated are the rates of diabetes distress among South Asians with type 2 diabetes. *Diabetes distress* is defined as “the despondency and emotional turmoil related specifically to having (diabetes), the need for continual monitoring and treatment, [and the] persistent concerns about complications and the potential erosion of personal and professional relationships” (9). A study by Leyva et al. (10) of Latino adults with type 2 diabetes concluded that changes in diabetes distress—not depressive symptoms—were associated with changes in glycated hemoglobin (A1C) levels. Arguably, diabetes distress could be the most prominent psychological issue among those living with type 2 diabetes (11).

To date, little attention has been focused on depression and diabetes distress in South Asians with type 2 diabetes living in Canada. For this reason, the objective of the present study was to examine rates of depression and diabetes distress in this community as well as to explore the relationship among glycemic control, depression and total diabetes distress.

Methods

This cross-sectional study was approved by the University of British Columbia Clinical Research Ethics Boards and uses the baseline data of a single-cohort pilot peer-support intervention for South Asian adults with type 2 diabetes (12). We recruited 41 individuals via flyers and advertisements posted in local temples, community centres, businesses, newspapers and medical clinics, and interested participants were invited to call the study's telephone number to undergo eligibility assessment.

Inclusion criteria included 1) having type 2 diabetes; 2) self-identifying as South Asian; 3) being 21 years of age or older; 4) residing in the metropolitan Vancouver area; 5) being proficient in English and/or Punjabi; 6) being under the care of a healthcare provider and 7) having transportation allowing them to attend group sessions.

A1C levels were collected via venous puncture. Depression, diabetes distress and demographic background information were measured by self-report. Upon completion, participants were provided a \$40 stipend to reimburse them for their time and effort.

The Personal Health Questionnaire-9 (PHQ-9) consists of 9 items and is scored on a 4-point Likert scale. The points were summed, and the severity of depression was assessed using the following criteria: 0 to 4, no depression; 5 to 9, mild depression; 10 to 14, moderate depression; 15 to 19, moderately severe depression; and 20

and higher, severe depression. For this study, participants who scored 10 or higher were considered to have clinically significant symptomatology (i.e. depression).

The Diabetes Distress Scale (DDS) consists of 17 items scored on a 6-point Likert scale, yielding a total diabetes distress score along with 4 subscale scores. Subscale scores include emotional-burden distress, physician-related distress, regimen-related distress and interpersonal distress. Accordingly, a higher total score (calculated by taking the mean of all items) reflects greater diabetes distress. In this study, a score lower than 2 indicated no distress; 2 to 2.9 denoted moderate distress; and higher than 3 was considered to reveal high distress.

Statistical analysis

The Table 1 includes a summary of the variables measured in the Peer-Led, Empowerment-Based Approach to Self-Management Efforts in Diabetes (PLEASED) study sample by depression and diabetes distress categories. Depression category (yes or no) is included as a variable to illustrate the number of depressed subjects in each diabetes distress category, as is distress category. The mean and standard deviation are reported for continuous variables for each depression and diabetes distress category, while for the categorical variables, the number and proportion of subjects in each depression and diabetes distress category are reported. The Spearman rank correlation (ρ) measures the relationship between each variable and the total depression and diabetes distress scores are reported for continuous variables. The Wilcoxon rank sum test was used to test for differences in depression and diabetes distress scores across the categorical variables. p values from the test of Spearman ρ and the Wilcoxon rank sum test, as well as from a chi-squared test comparing the depression and distress categories, are reported in Table 1. The Spearman ρ is also used to test for correlation between total depression and diabetes distress as well as its subscales.

Results

The mean (SD) age of our sample was 67 years (9), with 73% ($n=30$) being women. Less than half ($n=18$) had obtained at least some postsecondary education, with 56% ($n=23$) reporting household incomes of lower than CAN\$20,000.

The rate of depression was 15%, and the rate of total diabetes distress was 52.5%. Rates of emotional-burden distress, physician-related distress, regimen-related distress and interpersonal distress were 62.5%, 25%, 45% and 40%, respectively. No association was found between A1C levels and depression or between A1C levels and total diabetes distress (or its subscales).

A moderately strong positive correlation was found between depression and total distress ($\rho=0.696$; $p<0.001$), with emotional burden ($\rho=0.671$; $p<0.001$) and regimen distress ($\rho=0.636$; $p<0.001$) emerging as the 2 subscales with the strongest associations. There was evidence of a higher total score for depression ($p=0.03$) and distress ($p=0.003$) in subjects with incomes lower than \$20,000 compared to those with incomes above \$20,000.

Discussion

To our knowledge, this is the first study reporting rates of depression and diabetes distress in South Asian adults with type 2

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