Purpose: Diabetes is a big public health problem worldwide. It is estimated that there are 415 million of people with this non communicable disease and it could increase to 642 million in twenty five years. In Mexico the prevalence of previously diagnosed diabetes in 2016 was 9.4%. The increase of 2.2% relative to 2012 was not significant and only observed in patients older than 60 years however is pending to know total prevalence of this national survey. As hyperglycemia is one of the main characteristics of this disease, the presence of microvascular and macrovascular complications is one of the greatest risks. Complications have increased in Mexico and are the main cause of hospitalization, morbidity and mortality increasing health care costs. To delay or reduce these complications, glycemic control becomes essential and self-care behaviors are necessary. These behaviors include healthy eating, physical activity, glucose monitoring, medications, problem solving, healthy coping and risk reduction. The improvement of glycemic control through self-care management in adults in Mexico is urgent. The Mexican health system has recognized the importance of diabetes management through different strategies implemented in the health sector, it has improved the access to care and treatment, however, national studies show an inadequate glycemic control of people with diabetes. Because of the foregoing, it is evident the need to implement an intervention in patients with type 2 diabetes to improve their self-care and glycemic control, so it was proposed to implement a pilot educational intervention that provides them with cognitive skills and support for the management of their diabetes. Purposes a) to test the feasibility of the educational intervention (including its acceptability, and further refine intervention materials and study procedures) for improving self-care behaviors in low income Mexican people with type 2 diabetes; b) To test the initial efficacy of the intervention on participants with T2DM on the following outcomes from Time 1 (Baseline-0 months), Time 2 (Post Intensive Intervention-2 months), and Time 3 (After 3 months on their own-5 months): The primary outcome included glycated hemoglobin (A1c) from Time 1 to Time 3. The secondary outcomes included adiposity (waist circumference, triceps and subscapular skinfolds) and weight status (body mass index [BMI]), and diabetes self-management behaviors (Stanford Diabetes Questionnaire) from Time 1 to Time 2 and Time 1 to Time 3.

Methods: The study used a two-group (experimental group = 25 participants and control group = 25 participants) repeated measures design to evaluate the feasibility of the intervention with participants of Mexican heritage from Tampico, México. The experimental group received an intervention focused on type 2 diabetes self-management weekly for 8 weeks and then had 3 months on their own. The control group received usual care. Data collection was at Time 1 (Baseline-0 months), Time 2 (Post Intensive Intervention-2 months), and Time 3 (After 3 months on their own-5 months). The control group received usual care. Inclusion criteria for participants was age 18 to 60 years old; self-identification as Mexican heritage; fluent in Spanish; diagnosed with T2DM for at least 1 year; and receive their medical care at the Community Health Center and had received permission from their health care provider to join the study. Participants were excluded if they were found to have a heart murmur, congenital heart disease, family history of sudden death, difficulty walking or exercising or history of psychological problems that would prevent participation in group classes. The intervention was based on social cognitive theory, which posits that learning and practicing new behaviors and coping skills enhance self-efficacy, which, in turn, increases the probability that new behaviors will be maintained. The diabetes group visits were developed according to the American Diabetes Association Clinical Practice Guidelines from one author in this study. Each experimental patient received 8 weekly classes over 2 months in Spanish. Two nurses interventionists with experience teaching participants with diabetes were trained. The modules have been...
tested in English in the U.S. and have been highly successful and have been translated into Mexican Spanish. The classes included understanding diabetes and A1C goals, exercise goals, weight goals, cholesterol and blood pressure goals, portion control, fast food, and sweetened beverages, improving diabetes self-management goals using social problem solving, improving nutrition goals using social problem solving, and improving exercise goals using social problem solving. After informed consent, we collected the following data in a private room in the same order: height, weight, waist circumference, triceps and subscapular skinfolds, finger stick A1C, and self-management and self-efficacy questionnaires. Data collection took total of 45-60 minutes for each patient. Data analysis included descriptive and inferential statistics in the SPSS program. Ethical consideration were according to Helsinki declaration.

Results: This study showed the fifty participants were from 36 to 60 (M = 49.84; SD = 5.76) years of age. Seventy-six percent (n = 38) were female and 24% (n = 12) were male. Educational preparation was mainly 42% (n = 21) with primary school and 36% (n=18) with secondary school. In clinical data: From Time 1 to Time 3 (p = .518) there were no significant differences in hemoglobin A1C. The intervention group started at 9.92% and decreased to 8.73% and the control group started at 9.08% and decreased to 8.32%. Both groups decreased from Time 1 to Time 3, however, the intervention group decreased 1.19% and the control group decreased 0.76%. There was a significant difference at Time 2 (p < .001) and Time 3 (p = .057) in that the intervention group had fewer episodes of hyperglycemia compared to the control group in the past week. There was a significant difference at Time 2 (p = .009) and Time 3 (p = .011) in the intervention compared to the control group felt more confident that they knew what to do when their blood sugar went higher or lower than it should be.

Conclusions: Short educative interventions in people with diabetes can increase self-efficacy and self-management mainly in glycemic control (A1c) but not in anthropometric measurements which need more time to produce changes. This study need to be replicated in order to explore other factors.Key words: intervention, diabetes, self-management.

Title: Learning to Live With Diabetes: Educative Intervention for Improving Self-Management

Keywords: diabetes, intervention and self-management

References:

Abstract Summary:
This abstract will discuss the urgently need for improving self-management in people with diabetes from Mexico through an educative intervention. Assisting participants in self-management to build their skills may decrease morbidity and mortality and decrease future health care costs. Through this intervention, participants received valuable information on diabetes self-care behaviors.

Content Outline:
I. Introduction

a. International and national diabetes prevalence

II. Glycemic control

a. Hyperglycemia as main characteristics

b. Diabetes Complications

c. Relationship with self-management and self-care behaviors

d. Self-care behavior as healthy eating, physical activity, glucose monitoring, medications, problem solving, healthy coping and risk reduction.

e. Intervention
   • Efforts in Mexico
   • Urgent need for interventions

III. Conclusions

a. Challenges
Tampico Tamaulipas
Mexico

Author Summary: Dr. Compeán is a Researcher Professor at the Autonomous University of Tamaulipas School of Nursing in Tampico México. She has a Doctorate in Sciences of Nursing and a training in the PH-LEADER Program for Non Communicable Diseases at the Rollin School of Public Health in Emory University, USA and the National Institute of Public Health (INSP) in Mexico. Her studies and publishing focuses in self-care behaviors to prevent and manage diabetes and obesity.

Second Author
Diane C. Berry, PhD, ANP-BC, FAANP, FAAN
The University of North Carolina at Chapel Hill
School of Nursing
Assistant Dean for Research and Beerstecher-Blackwell Distinguished Professor
Chapel Hill NC
USA

Author Summary: Dr. Berry is the Assistant Dean for Research and Beerstecher-Blackwell Distinguished Professor at the University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, United States. Her research is focused on the prevention and management of overweight, obesity, and type 2 diabetes in families in English and Spanish.

Third Author
Beatriz Del Angel, MNS, RN
Autonomous University of Tamaulipas
School of Nursing
Researcher Professor
Centro Universitario Tampico Madero
School of Nursing
Tampico Tamaulipas
Mexico

Author Summary: Researcher Professor at Autonomous University of Tamaulipas, School of Nursing in Mexico. Co-author in some research projects. Research interest in healthy life styles in adults and teenagers.

Fourth Author
José Rivera-Pérez, MET
Autonomous University of Tamaulipas
School of Nursing
Professor
Boulevard Lopez Mateos S/N
Tampico Tamaulipas
Mexico

Author Summary: Professor at Universidad Autonoma de Tamaulipas, School of Nursing Tampico. Statistical Advisor in some Research Projects. Co-author in the research project: Learning to live with diabetes recently awarded by Sigma Theta Tau Small Grant.

Fifth Author
Paulina Aguilera, MNS, RN
Autonomous University of Tamaulipas
School of Nursing
Researcher Professor
Matamoros SN Entre Juan B. Tijerina y C. Colon
Tampico Tamaulipas
Mexico

Author Summary: Researcher Professor at the Universidad Autonoma de Tamaulipas, School of Nursing, Tampico Mexico. Candidate to get the Doctoral Degree in Culture of Nursing Care. Research line in healthy lifestyle in children and adults.