



Self-Management of Patients with Diabetes and Comorbid Depression at the

St. John's Well Child and Family Center

Marwah Ibrahem

New York College of Osteopathic Medicine

Mentor: Nomsa Khalfani

Faculty Advisor: Dr. Charles Vega, MD

St. John's Well Child and Family Center

Introduction

Diabetes is a serious health problem in the United States with an insidious onset that delays its diagnosis and management. Patients with diabetes usually experience serious short-term complications such as hypoglycaemia, but more disabling are the long-term complications including cardiovascular disease, neuropathy, nephropathy and retinopathy (1). It has been estimated that more than 50% of people with type 2 diabetes will die from cardiovascular disease (2). According to the International Diabetes Federation, 189 million individuals have diabetes worldwide (3). The United States ranks third in the world with an estimated 36 million people to be living with diabetes by the year 2030.

Top 10: Number of people with diabetes (20-79 years), 2010 and 2030

COUNTRY/TERRITORY	2010 MILLIONS	COUNTRY/TERRITORY	2030 MILLIONS
1 India	50.8	1 India	87.0
2 China	43.2	2 China	62.6
3 United States of America	26.8	3 United States of America	36.0
4 Russian Federation	9.6	4 Pakistan	13.8
5 Brazil	7.6	5 Brazil	12.7
6 Germany	7.5	6 Indonesia	12.0
7 Pakistan	7.1	7 Mexico	11.9
8 Japan	7.1	8 Bangladesh	10.4
9 Indonesia	7.0	9 Russian Federation	10.3
10 Mexico	6.8	10 Egypt	8.6

Table 1: Taken with permission from: *IDF Diabetes Atlas, 4th edition*, © International Diabetes Federation, 2009.

Demographics

In 2011, 48.1% of residents of Los Angeles County reported that they were of Hispanic or Latino origin (4). Studies have shown that Hispanic and African-American patients in the United States have nearly two times the prevalence of type 2 diabetes as non-Hispanic whites (5-

7). According to the National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation:

“Diabetes disproportionately affects Hispanics in the United States. Where Hispanics reside may be a key factor in how diabetes impacts their lives. Differences in access to quality health care, social and cultural factors, or the genetic makeup of the Hispanic population in a specific area may explain disparities in diabetes prevalence. When accounting for the different age distributions, the overall prevalence of diabetes among Hispanics was almost twice that of non-Hispanic whites (9.8 percent vs. 5.0 percent)” (5).

St. John’s Well Child and Family Center (SJWCFC) is located in the heart of Los Angeles and the demographic of its patients represent the city that it serves. Although the pathophysiology and treatment of diabetes is not different for a Hispanic diabetic as opposed to a White diabetic, differences in behaviors, cultures, and health beliefs have a significant effect on how patients understand their illness and engage in self-management. It is for these reasons that programs like the one established at SJWCFC need to account for these differences to improve diabetes self-management.

Diabetes and Depression

Less known about diabetes is the increased risk for depression: the risk of depression is nearly doubled in individuals with type 2 diabetes (8). Comorbid depression in people with diabetes can pose as a severe threat to their quality of life (9). More disturbing is the effect of depression on all-cause mortality in people with diabetes as shown in Figure 1. Patients with both diabetes and depression have been shown to have worse glycaemic control (10), increased risk for the development of cardiovascular complications of diabetes and to have increased mortality rates (Figure 1) and higher health care costs (11-13). Even in the absence of a diagnosis of clinical depression, previous studies have demonstrated that depressive symptoms and heightened distress are associated with worse diabetes self-management and uncontrolled

diabetes (14). These findings suggest that in order to identify challenges that hinder the self-management of diabetes, patients with comorbid depression must be included to account for the effects of depression on diabetes self-management.

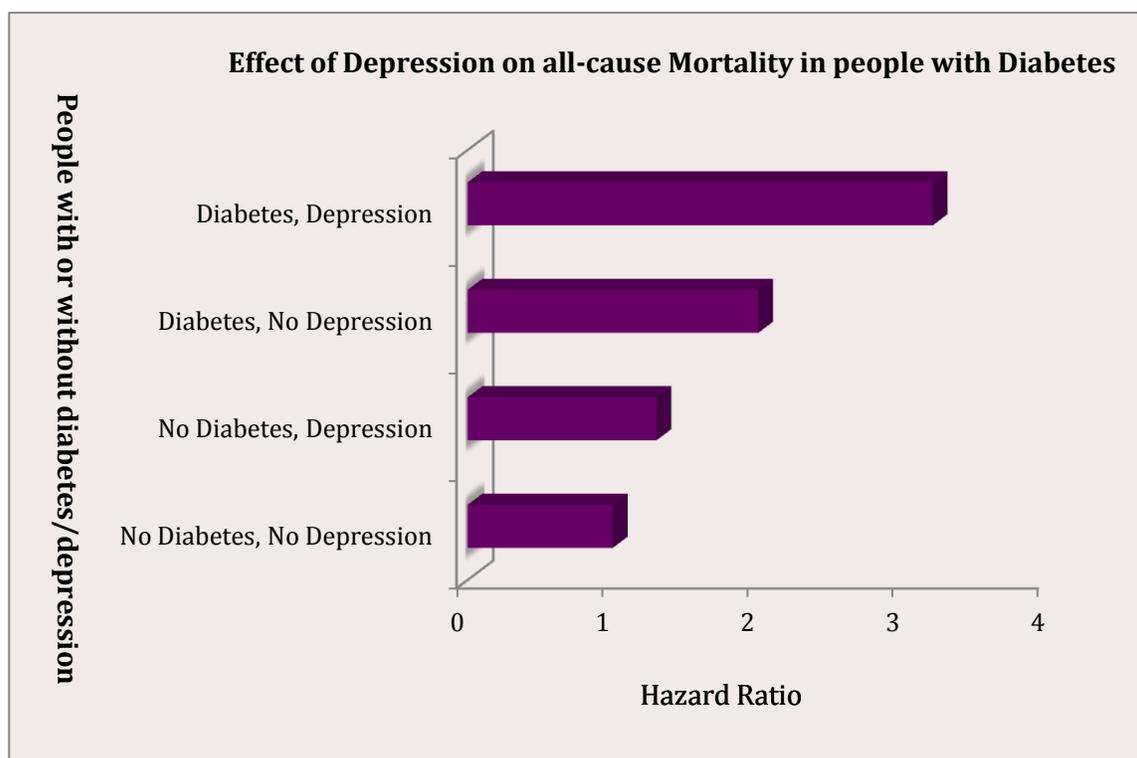


Figure 1: Modified from: *IDF Diabetes Atlas, 4th edition*, © International Diabetes Federation, 2009.

Barriers to Diabetes Self-Management

Diabetes care mainly consists of self-management by the patient. Diabetic patients have to regularly monitor their blood glucose levels, balance their food intake, engage in physical activities and adhere to their prescribed oral hypoglycaemic agents and/or insulin. The overall treatment goal is to prevent acute and chronic complications by adopting a balanced lifestyle that preserves their desired quality of life (15). Diabetes self-management education has many dimensions beyond just helping people monitor their blood glucose, or take their medication as prescribed. A person's health status is dynamic and their needs for support change over time and cannot be met by their scheduled visits to the doctor where they may or may not receive the

proper counseling (16). Diabetes education needs to be an ongoing process (17) like the one established at the weekly Diabetes Class at St. John's Well Child and Family Center (SJWCFC). While a large body of literature exists on diabetes education and its effectiveness, including several important quantitative reviews showing positive effects (18-20), these reviews do not identify the most effective form of diabetes education for specific populations like ones with comorbid depression and living in an underserved area. The findings of a recent meta-analysis showed that depressed patients with diabetes are less likely to adhere to diabetes self-care regimens than non-depressed patients (21).

Similar to other patients living with chronic diseases, diabetes patients are less concerned with clinical biomarkers (22) such as hemoglobin A_{1c}, blood pressure, or lipid levels, but instead are more concerned with the effects of their disease on their emotional and mental health, and ultimately the strain the disease and its treatments will have on daily life (23). Furthermore, while there exists effective self-management for diabetes and effective psychotherapy for depression, integrating treatment of depression with diabetes care in busy primary care settings like a CHC presents its own challenges (24). Therefore, the population of patients with diabetes and comorbid depression who seek their health-care at a CHC like SJWCFC should be assessed for any obstacles that impede on the self-management of their diabetes. Results from focus group interviews like the one conducted at the St. John's Well Child and Family Center (SJWCFC) could help personalize the care of this vulnerable group of patients.

Intervention

In this project, I conducted one 30-minute focus group interview with diabetic patients at the SJWCFC with comorbid depression. The purpose of the focus group interview was to learn about the perspectives of people living with diabetes and depression to identify the barriers that

exist in the self-management of their diabetes. The sessions began with an explanation of the purpose of the meeting. Participants were assured that their names would not be associated with the tape. A written consent form, including permission to audiotape was read aloud by the moderator and reviewed and signed by each participant. A bilingual Latino volunteer facilitated the focus group discussion. The following topics were addressed: What do you think is the cause of your Diabetes? What are some factors in your life that make it hard for you to control your Diabetes? What makes it easier for you to take care of your Diabetes? Where do you get the most information about your health in general? What kind of support would you like to help you manage your Diabetes? What changes would you like to see around you to help you manage your Diabetes? Data analysis was conducted by identifying key words and common themes that appeared throughout the interview.

Results

Demographic characteristics of patients with diabetes and comorbid depression	
Focus Group Size (number)	9
Male	1
Female	8
Hispanic/Latino	8
African American	1
Age (years – mean)	53
Age (years – range)	45 - 62
Unemployed	8

Perceived cause of Diabetes

Most participants responded that they had a genetic predisposition to diabetes through their

family history. Participants reported that most of their family members suffered from diabetes as well. In addition to the genetic risk factor, another commonly reported cause of diabetes was diet and nutrition. One woman stated that her lifestyle was the cause of her diabetes because she failed to manage her disease despite many warning signs including vision loss, dental problems, and urinary frequency.

Perceived Barriers to Self-Management

Food was a commonly cited barrier to the participants' self-management of their diabetes. One man expressed that "it is hard to say no" and another said the hardest thing for him was "wanting to eat like everybody else- cake, pie." One participant confessed that it was a daily struggle for him and explained that each day was like "fighting against yourself....denying stuff you shouldn't eat." Another identified barrier that was reported among all participants was the stress in their lives. The participants quoted below demonstrate the every-day stressors that people with diabetes and comorbid depression face:

Stress makes diabetes harder. I am worried because I have to see the doctor and have to pay for the visit when I have no money.

My life has been okay. The only thing that stresses me out is that I live alone...the economy has been bad, so I have no money and this stresses me out [too].

I have a tooth problem and I can't pay for that service- this stresses me out.

There are many medical problems that I can't pay for- also dental. I need glasses, and I need to fix my teeth, and to wear proper shoes. But I have no money and cannot pay for these services.

I can't afford to get medical supplies for my diabetes like syringes or lancets. My Glucose Meter is broken and I asked to exchange it, but they told me I need to purchase another one.

Participants struggled with other medical issues including high blood pressure and high cholesterol. One woman revealed that she was losing her sexuality and didn't want to be with her

husband anymore. This led to marital stress that hindered her control of her diabetes. Many focus group participants expressed that sometimes, family members made it difficult to manage their diabetes by bringing soda and greasy stuff home. One man expressed that it was like “bringing poison” home and he, like the other participants, struggled to abide by his diabetic diet in these circumstances. One woman was emotional when she said “My kids make it hard. I’m the only one diabetic and have to deny food all the time. I have to cook for everybody and nobody is supportive of my diet.”

Another issue that was raised by most focus group participants was the stress they had from being unemployed. One participant stated, “This is the main thing why we’re getting stressed- if you’re working, you most likely have insurance and not worrying about getting your medication and paying for it.” A commonly cited experience among participants was discrimination in the workforce: “When I fill out the application, they turn me away because of my age.” Besides being discriminated by age, many were turned down employment opportunities because they lacked citizenship status in this country. Some even reported the fear of being deported: “We’re afraid to see Immigration Services on the streets and be arrested.”

Factors that Make Self-Management Easier

Participants generally agreed that the support they received from their family members and the weekly diabetes class at St. John’s has served as one of the biggest factors in making self-management easier. One participant stated that her family helped tremendously in her recovery when she suffered vision problems because of her diabetes. Most participants related to her story as they experienced similar support when they suffered complications from their diabetes. One woman reported that she was the only diabetic at home and despite this she said, “when I cook everybody is willing to eat what I cook.” Many of the participants were thankful and grateful to

St. John's for hosting the weekly Diabetes Class. One woman said, "Since I got here, this clinic has been helping me. Before I got here my glucose level was 850 and when I went to see my doctor my urine was 1000. After medication and exercise, I feel better." Most focus group participants reported to have a wake-up call from witnessing family members suffer devastating effects due to the lack of control their family members had over their diabetes. The statement below is a reported experience by one of the participants:

My dad passed away 2 years ago from diabetes. [This was] a really good experience to help my brothers and sisters to lead a better life. This was a very good experience because when my dad was dying, he was on dialysis and lost his kidney function. My dad passing away was helping the whole family control their diet and start consuming healthy food.

Another woman reported a similar experience of her father dying, which motivated her mother and herself to "straighten out" their lives. The participant quoted below describes how Church and her community were what helped her: "When I go to Church, I feel like I'm healthy...I have the strength to keep going day by day. When you feel better inside (spiritually), the rest will follow."

Suggested Changes and Perceived Needs

Participants were very eager to have a nutritionist that would not only counsel them on a proper diet in accordance with their diabetes, but one that was accommodated to their culture. It came to no surprise that many of the participants reported the challenges they faced in modifying the Latino diet consisting of a high fat content and high carbohydrate load. A general need the participants reported was the need for increased mental services and psychotherapy. The current structure of the weekly diabetes class the participants attend regularly lacks counseling provided by a professional mental health counselor. One woman expressed that her diabetes was psychologically challenging since she had to accept the fact that she would have this disease all

her life. One participant reported the need for jobs as he said, “If we get money, money will be gone. But jobs will keep the money supply [for us].” Most participants agreed that a needed change was for St. John’s to have more “flexible services.” One participant expressed a feeling of helplessness when she said, “We need to get glasses and medication in a better way. [Especially] when we have no money.” Another suggested change the participants recommended was an expanded pharmacy. One participant stated, “The pharmacy is too small and is running out of medication. We end up going to the [other] pharmacy to get itand [have to] pay high price, [but] sometimes we have no money.” Besides external changes, one participant noted the need to make changes internally through motivation and will: “We need to make the changes, and to have the motivation to be good everyday.”

Conclusion

Data from this focus group discussion demonstrated that the weekly diabetes class held at St. John’s Well Child and Family Center (SJWCFC) is an effective model and one worth replicating for the self-management of diabetes within patients who have comorbid depression. Most focus group participants identified that food and stress were one of the greatest barriers that existed in the management of their diabetes. The stress these patients face is reflective of people living in underserved areas including financial instability, unemployment, and insufficient coverage for their medical needs.

The participants in this study proposed increased mental health services at SJWCFC that tailored to their needs as diabetic patients with depression. Nutritional counseling was very important to the focus group participants as they struggled with their cultural diet that is high in fat, sugar, and calories. This study suggests that in addition to holding a nutritional seminar during the weekly diabetes class, Community Health Centers like St. John’s could host

“Supermarket Tours.” A trained Nutritionist/Registered Dietician could offer educational tours around local supermarkets for diabetic patients and invite their family members to these events in an effort to raise awareness among relatives as to how they could support their diabetic loved ones. Another way for Community Health Centers to engage their diabetic patients in improved self-management is to host periodic Job Fairs and Mock-Interview sessions. It is without a doubt that the employment of these patients is critical to their quality of life. The participants of this focus group felt that by securing a job, they could eliminate a myriad of the life stressors they face including affording basic health needs like dental work, glasses and proper foot-wear.

It is important to consider that the present study was limited by a small sample size and few male recruits. In addition, the age range of the participants was marginal and thus, this study could not be generalized to larger populations of Hispanic/Latinos living with diabetes and depression. Nonetheless, the results of the focus group interviews conducted in the present study highlight the perspectives of people who are usually unaddressed in current research regarding the self-management of diabetes. Based on the present findings, it appears that St. John’s is on the right track in supporting its patients with diabetes and depression. However, much work needs to be done to ensure that the barriers that currently impede self-management in diabetics with depression are eliminated and the existing health disparities among this vulnerable group of patients are reduced.

Acknowledgements:

I would like to thank the National Medical Fellowships (NMF) Program and the GE Foundation for their support to make this project possible. It is because of NMF and the GE foundation that I was able to learn how care was provided to patients in a Community Health Center (CHC)- both on the medical level as I shadowed Dr. Alexis Gomez and Nurse

Practitioner Lisa Cederblom, as well as on the administrative level as I interviewed senior management of St. John's Well Child and Family Center (SJWCFC) including President and CEO, Jim Mangia, CFO, Liz Meisler, and Board Chair, Marion Douglas. I would also like to thank Nomsa Khalfani, Chief of Policy & Support Services at SJWCFC, for her guidance and support as she helped orient me to the different aspects that affect a CHC and how it can transform into being a voice for the community it serves. Finally, I would like to acknowledge and extend my heartfelt gratitude to Dr. Louis C. Frayser who has been a source of guidance and encouragement throughout this entire process. His commitment to diabetes and to his patients is inspirational and his love for medicine is absolutely contagious.

References:

1. Barnard KD, Skinner TC, Peveler R. The prevalence of co-morbid depression in adults with Type 1 diabetes: systematic literature review. *Diabet Med.* 2006;23(4):445–8.
2. Tapp R, Shaw J, Zimmet P, eds. Complications of diabetes. In: International diabetes federation, ed. *Diabetes atlas*. 2nd ed. International Diabetes Federation, 2003.
3. WHO, ed. *Diabetes Mellitus fact sheet 138*. 2002: Geneva.
4. U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits, Consolidated Federal Funds Report.
5. Centers for Disease Control and Prevention: National diabetes fact sheet: general information and national estimates of diabetes in the United States, 2005. Atlanta, Ga., U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2005.
6. Centers for Disease Control and Prevention: Self-reported prevalence of diabetes among Hispanics—United States, 1994–1997. *MMWR Morb Mortal Wkly Rep* 48:8–12, 1999.
7. Centers for Disease Control and Prevention: Diabetes among Hispanics—Los Angeles County, California, 2002–2003. *MMWR Morb Mortal Wkly Rep* 52:1152–1155, 2003.
8. Ali, S., Stone, M. A., Peters, J. L., Davies, M. J. and Khunti, K. (2006), The prevalence of co-morbid depression in adults with Type 2 diabetes: a systematic review and meta-analysis. *Diabetic Medicine*, 23: 1165–1173.
9. Schram MT, Baan CA, Pouwer F. Depression and quality of life in patients with diabetes: a systematic review from the European Depression in Diabetes (EDID) research consortium. *Curr Diabetes Rev* 2009;5:112–119.
10. Lustman PJ, Anderson RJ, Freedland KE, de Groot M, Carney RM, Clouse RE (2000) Depression and poor glycemic control: a metaanalytic review of the literature. *Diabetes Care* 23:934–942.
11. Katon WJ, Rutter C, Simon G, et al. The association of comorbid depression with mortality in patients with type 2 diabetes. *Diabetes Care* 2005;28:2668–2672.

12. Bruce DG, Davis WA, Starkstein SE, Davis TM. A prospective study of depression and mortality in patients with type 2 diabetes: the Fremantle Diabetes Study. *Diabetologia* 2005;48:2532–2539.
13. Egede LE, Zheng D, Simpson K. Comorbid depression is associated with increased health care use and expenditures in individuals with diabetes. *Diabetes Care* 2002;25:464–470.
14. Fisher L, Skaff MM, Mullan JT, Arean P, Mohr D, Masharani U, Glasgow R, Laurencin G. Clinical depression versus distress among patients with type 2 diabetes: not just a question of semantics. *Diabetes Care*. 2007;30:542–548.
15. Schram MT, Baan CA, Pouwer F. Depression and quality of life in patients with diabetes: a systematic review from the European Depression in Diabetes (EDID) Research Consortium. *Curr Diabetes Rev*. 2009;5:112–119.
16. Tapp R, Shaw J, Zimmet P, eds. Complications of diabetes. In: International diabetes federation, ed. *Diabetes atlas*. 2nd ed. International Diabetes Federation, 2003.
17. Norris SL, Engelgau MM, Narayan KMV. Effectiveness of self-management training in type 2 diabetes. A systematic review of randomized controlled trials. *Diabetes Care* 2001;24:561 – 587.
18. Brown S: Effects of educational interventions in diabetes care: a meta-analysis of findings. *Nurs Res* 37:223–230, 1988.
19. Brown S: Studies of educational interventions and outcomes in diabetic adults: a meta analysis revisited. *Patient Educ Counsel* 16:189–215, 1990.
20. Padgett D, Mumford E, Hynes M, Carter R: Meta-analysis of the effects of educational and psychosocial interventions on management of diabetes mellitus. *J Clin Epidemiol* 41:1007–1030, 1988.
21. Gonzalez JS, Safren SA, Cagliero E, Wexler DJ, Meigs JB, Grant RW. Symptoms of depression prospectively predict poorer self-care and medication adherence in patients with Type 2 diabetes. *Diabet Med*. 2008;25:1102–1107.
22. Krumholz HM: Outcomes research: Generating evidence for best practice and policies. *Circulation* 2008, 118(3):309–318.
23. Barr JT: The outcomes movement and health status measures. *Journal of Allied Health* 1995, 24(1):13–28.
24. Anderson D, Horton C, O'Toole M, Brownson C, Fazzino P, Fisher E. Integrating Depression Care With Diabetes Care in Real-World Settings: Lessons From the Robert Wood Johnson Foundation Diabetes Initiative *Diabetes Spectrum* January 2007 20:10-16.