#### Lehigh Valley Health Network

#### **LVHN Scholarly Works**

**Department of Family Medicine** 

#### Promotora-led Diabetes Self-Care Education Lowers Depression Scores and Increases Patient Self-Efficacy

Robert Motley MD Lehigh Valley Health Network, Robert\_J.Motley@lvhn.org

Nyann Biery MS Lehigh Valley Health Network, nyann.biery@lvhn.org

Hannah D. Paxton RN, MPH Lehigh Valley Health Network, Hannah\_D.Paxton@lvhn.org

Cathy A. Coyne PhD, MPH Lehigh Valley Health Network, Cathy\_A.Coyne@lvhn.org

Sherrine Eid MPH Lehigh Valley Health Network, Sherrine. Eid@lvhn.org

Follow this and additional works at: https://scholarlyworks.lvhn.org/family-medicine



Part of the Medical Specialties Commons

#### Let us know how access to this document benefits you

#### Published In/Presented At

Motley, R., Biery, N., Paxton, H., Coyne, C. & Eid, S. (2014, October, 30). Promotora-led Diabetes Self-Care Education Lowers Depression Scores and Increases Patient Self-Efficacy. Poster session presented at the LVHN Nursing Research Day, Allentown, PA.

This Poster is brought to you for free and open access by LVHN Scholarly Works. It has been accepted for inclusion in LVHN Scholarly Works by an authorized administrator. For more information, please contact LibraryServices@lvhn.org.

# Promotora-led Diabetes Self-Care Education Lowers Depression Scores and Increases Patient Self-Efficacy

Robert Motley MD, Nyann Biery MS, Hannah Paxton RN, MPH, Cathy Coyne PhD and Sherrine Eid MPH, Lehigh Valley Health Network, Allentown, Pennsylvania

#### Introduction:

- Vulnerable populations with diabetes face special challenges, including a higher disease prevalence and worse clinical outcomes. 1-3 Latinos with diabetes are 1.6 times more likely to develop end-stage renal disease than non-Hispanic whites and 1.4 times more likely to die from the disease. 2
- There is a higher prevalence of depression among patients with type II diabetes as compared with patients without diabetes.<sup>4,5</sup>
- Diabetes self-management programs have demonstrated effectiveness in various patient populations for the control of diabetes. Few studies have examined the impact of these programs on depression comorbidities.

# Objectives:

Assess the impact of a promotora-led, Spanish language diabetes self-care education program on depression scores among adult, low-income urban Latino patients.

## The Intervention:

- 6 weekly or 12 monthly group sessions
- Sessions led by Spanish-speaking promotora
- Education focused on self-care of diabetes
- Social support provided by group

#### References:

- 1. Centers for Disease Control and Prevention. Diabetes Report Card 2012. http://www.cdc.gov/diabetes/pubs/pdf/DiabetesReportCard.pdf. Updated October 26, 2012. Accessed September 9, 2013.
- 2. Office of Minority Health. Diabetes and Hispanic Americans. http://minorityhealth.hhs.gov/templates/content.aspx?ID=3324. Updated March 12, 2013. Accessed August 30, 2013.
- Agency for Healthcare Research and Quality 2012 National Healthcare Dispartities Report. June 2013. http://www.ahrq.gov/research/findings/nhqrdr/nhdr12/2012nhdr.pdf.
- 4. Ali S, Stone MA, Peters JL, Davies MJ, Khunti K. The prevalence of co-morbid depression in adults with Type 2 diabetes: a systematic review and meta-analysis. Diabet Med. 2006;23(11):1165-1173.
- 5. Anderson RJ, Freedland KE, Clouse RE, Lustman PJ. The prevalence of comorbid depression in adults with diabetes: a metaanalysis. Diabetes Care. 2001;24(6):1069-1078.

## The Participants:

- Latino patients with diabetes
- 18 years of age and older
- Recruited from 4 primary care practices:
  - Centro de Salud
  - Lehigh Valley Physician Practice
  - Family Health Center
  - Vida Nueva (now Neighborhood Health Centers of the Lehigh Valley)
- 193 participants enrolled in the program; 77 dropped out
- Analysis is based on the 106 participants who completed the program

## Measures:

Depression: PHQ-9

Stratified by total score into three categories:

- None-Minimal Depression (scores 0-4)
- Mild Depression (scores 5-9)
- Moderate or worse Depression (scores 10+)

**Self-Efficacy:** Diabetes Empowerment Scale – Short form (DES-SF)

Medical chart review of depression medications; categorized by duration on medication:

- No Medication
- Therapeutic Level (started >6 weeks prior to class)
- Sub-Therapeutic Level (started <6 weeks prior or during program)

## Results:

Changes in DES Score by Depression Medication Use Category						
Pre- intervention	Post- intervention	p-Value				
4.14	4.35	0.072				
4.12	4.01	0.577				
3.73	4.34	0.016				
4.01	4.27	0.028				
	Pre-intervention  4.14  4.12  3.73	Pre-intervention Post-intervention  4.14 4.35  4.12 4.01  3.73 4.34				

			_	
liabor agara	indiantan	bioborl	$\alpha$	self-efficacy.
HONER SCORE			$\Theta \lor \Theta \vdash \bigcirc \vdash$	
	HOUGICO			JULI ULLUAUV.

-	Results				
	Self-Efficacy	Depression			
	Statistically significant increase among patients that recently began taking medications for depression	Intervention showed statistically significant improvement in depression levels across all categories of Depression Medication use			
	Trend toward increase in DES score among patients on no medication, but this did not reach statistical significance	Medication groups demonstrating most significant change were "No Medication" (p=0.001) and "Sub-Therapeutic" Levels (p<0.001)			
		Level of depressive symptoms NOT associated with drop-out rate (data not shown)			

	Changes in DES Score	e by Depression M	edication Use Cat	egory	
Category of Depression	Depression Level - Post within group % (n)			p-Value	
Medication Use	Depression Level Pre	None to Minimal Depression	Mild	Moderate or Worse	
	None to minimal (n=25)	96% (24)	4% (1)	0	0.001
No Medication	Mild (n=19)	57.9% (11)	26.3% (5)	15.8% (3)	
(n=53)	Moderate or worse (n=9)	22.2% (2)	44.4% (4)	33.3% (3)	
		69.8% (37)	18.9% (10)	11.3% (6)	
	None to minimal (n=11)	100% (11)	0	0	
Therapeutic Level	Mild (n=3)	66.7% (2)	0	33.3% (1)	0.028
(n=22)	Moderate or worse (n=8)	37.5% (3)	37.5% (3)	25% (2)	
		72.7% (16)	13.6% (3)	13.6% (3)	
Sub-Therapeutic Level	None to minimal (n=16)	93.8% (15)	6.3% (1)	0	<0.001
	Mild (n=8)	37.5% (3)	50% (4)	12.5% (1)	
(n=31)	Moderate or worse (n=7)	14.3% (1)	28.6% (2)	57.1% (4)	
		61.3% (19)	22.6% (7)	16.1% (5)	

## Limitations:

- High dropout rate and loss to follow-up
- Small sample size when analyzed by program site; therefore all sites were combined
- Study design: No control group, pre-post measurements

## Conclusion:

- Participation in a promotora-led diabetes group self-care program can improve patients' confidence in their ability to meet diabetic goals (self-efficacy).
- Program participation can improve level of depressive symptoms among Latino patients with diabetes, particularly those
  with mild depressive symptoms.
- Combination of self-care education and medication can help to improve level of depressive symptoms among patients with diabetes.

© 2014 Lehigh Valley Health Network

#### Acknowledgements:

Grant funded by Anne and Carl Anderson Trust

The authors would like to acknowledge the work of Latinos for Healthy Communities, Carol Foltz PhD, Abby Letcher MD, Edgardo Maldonado MD, Alicia Rivera, and Francigna Rodriguez.

