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Transformation for Health in Chronic Disease Management Among High Risk Vulnerable Populations

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Purpose: The primary goal of developing the Transformation for Health (TFH) framework for the patient navigation programs is to improve access to quality primary health care services for economically and medically vulnerable individuals through interprofessional collaborative practice (IPCP).

Methods: The clinical and behavioral outcomes of the patients in three patient navigation programs are summarized and evaluated in this presentation. All community health workers in the programs received 160 hours Texas certified training curriculum. Patient Navigation Demonstration program (2008-2010) was the first patient outreach program for chronic disease management using TFH framework. A total of 183 patients with at least one of the following chronic diseases were enrolled in this program: Type II Diabetes, Hypertension and Asthma. Both clinical and behavioral outcomes of the patients were improved through the program. Patient Navigation Program (2010-2013) was the second funded patient outreach program using TFH framework. A total of 147 patients with either diabetes or hypertension or both were enrolled to the program. Interprofessional Collaborative Practice (IPCP) program (2014-2017) for cardiovascular risk reduction has been funded through HRSA in 2014. A total of 240 patients have been enrolled since 2014. Clinical measurements such as HgA1c, blood pressure, and lipid profiles were monitored clinical improvements. The Patient Health Questionnaire, SF-12, Self Efficacy for Diabetes Management Survey (SED), Self Efficacy for Managing Chronic Disease (SEMCD) instrument, Summary of Diabetes Self Care Activities (SDSCA) Questionnaire and Social Provisions Scale (SPS) were used to monitor behavioral changes. Growth curve analysis, paired t-test and mixed model are used to determine the effectiveness of the program. Additional measurements such as medication adherence rate, Generalized Anxiety Disorder 7-item (GAD-7) score, PHQ-9 depression score and clinical visits data from EMR have also been collected.

Results: For the first demonstration program-- The HbA1c for patients with diabetes was reduced from an average of 9.3% to 8.4% ($p < 0.05$). The percentage of asthma patients with ER visits within 12 months before enrollment was 50% and none of them had ER visit during the program period. The behavioral scores for SF-12, Self Efficacy for diabetes, personal resource inventory, Self Efficacy for Managing Chronic Disease, Social Provisions Scale and Summary of Diabetes Self Care Activities were also significantly improved through the program.

For the second patient navigation program--The growth curve analysis shows that 70 patients with diabetes had significantly decreased their HgA1C level ($p = .0096$) during the navigation period (9.7 ± 5.3 months). Paired t-tests show that most of the behavioral outcomes were significantly improved through program. The Mental Health Composite Scale score of SF-12 was improved in an average of 6.21 [2.22, 10.19] ($p = 0.0029$). The SED and SEMD Scores were both improved significantly, 1.38 [0.72, 2.04] ($p = 0.0002$) and 0.68 [0.06, 1.30] ($p = 0.0334$), respectively. Three out of five subscales of SDSCA, general diet, blood sugar test and foot check, were also improved significantly, 0.86 [0.22, 1.50] ($p = 0.0103$), 1.49 [0.45, 2.53] ($p = 0.0064$), and 0.69 [0.07, 1.31] ($p = 0.0298$), respectively.

For the IPCP program --Baseline data show that 65% of patients enrolled ($N = 168$) have two or more chronic conditions, 49% are on five or more prescription drugs, over 64% are unfunded, and over 25% are Medicaid/Medicare participants. Hypertension is the leading chronic condition (89.7%), followed by diabetes (68%), obesity (80.6%), dyslipidemia (22.2%), existing coronary artery disease (13.6%), asthma/COPD (7.8%) and other chronic conditions (33.5%). 14.8 percent of the patients had mild depression, and over 15.2% had moderate to severe depression (measured by PHQ-9) at baseline.

The collection of post-intervention data is ongoing, some of the behavioral outcomes collected at baseline (<45 days of enrollment), half-year (45 days-180 days), and one year (≥ 180 days) are listed in the table below.

	Baseline	Half-Year	One year
SF-12 v2 PCS	43.9 \pm 12.9	41.7 \pm 10.9	37.2 \pm 10.7
MCS	48.9 \pm 19.0	50.6 \pm 9.7	47.9 \pm 14.7
PHQ-9	7.0 \pm 6.5	10.5 \pm 6.9	7.3 \pm 6.6
SEMCD	8.4 \pm 1.6	7.4 \pm 2.1	7.6 \pm 1.6
SED	7.3 \pm 1.7	7.8 \pm 1.8	8.0 \pm 2.0

In year 2016, 70.7% of the HTN participants had controlled blood pressure and 45.4% of Diabetes participants had HbA1c<8%.

Conclusion: The patient navigation/outreach programs using TFH framework in delivering services, effectively promoted chronic disease management among vulnerable populations. Interprofessional team has been a valuable component of the program.

Title:

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Keywords:

behavioral management, patient navigation and vulnerable populations

References:

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Abstract Summary:

Access to health care has been a global-wide issue among vulnerable populations, who have limited access to care due to limited funding and resources. Our Chronic Disease Management programs using Transformation for Health framework have been shown to be effective and more cost-efficient on improving community engagement and health outcomes.

Content Outline:

Introduction

Increased cost of chronic illnesses in United States is an urgent call to develop a cost effective approach to improve chronic disease self-management, especially among vulnerable populations. We developed a conceptual framework, Transformation for Health, for our chronic disease management program using certified community health workers (CHW) in 2005. We expanded the program from the original patient navigation program to interprofessional collaborative program with the funding support from US Health Resources & Services Administration. The summary of the original patient navigation programs and current interprofessional collaborative program for chronic disease management is presented in this presentation.

Framework and Programs

Transformation for Health (TFH) framework was developed by the group at Texas Tech University Health Sciences Center to address the problems of health behavior management among populations vulnerable to health disparities. TFH is based on Freire's educational philosophy that individuals, people, or groups must achieve transformational power; it cannot be given to them. TFH is practical because it is intuitive and can be easily be used as a foundation for a broad view of system or community change at various levels in addition to being used for focused interventions in initiating behavior change at the intrapersonal or interpersonal level.

Certified Community Health Worker (CHW) training program has also been developed to deliver health care, preventive services, and health education for underserved populations to promote chronic disease self-management based on TFH. Over 107 CHWs in 12 cohorts have been trained through the program.

Patient Navigation Demonstration program (2008-2010) was the first patient outreach program for chronic disease management using TFH framework. A total of 183 patients with at least one of the following chronic diseases were enrolled in this program: Type II Diabetes, Hypertension and Asthma. Both clinical

and behavioral outcomes of the patients were improved through the program. The HbA1c for patients with diabetes was reduced from an average of 9.3% to 8.4% ($p < 0.05$). The percentage of asthma patients with ER visits within 12 months before enrollment was 50% and none of them had ER visit during the program period. The behavioral scores for SF-12, Self Efficacy for diabetes, personal resource inventory, Self Efficacy for Managing Chronic Disease, Social Provisions Scale and Summary of Diabetes Self Care Activities were also significantly improved through the program.

Patient Navigation Program (2010-2013) was the second funded patient outreach program using TFH framework. A total of 147 patients with either diabetes or hypertension or both were enrolled to the program. The similar outcomes as the first study confirmed the effectiveness of the program with TFH framework.

Interprofessional Collaborative Practice (IPCP) program (2014-2017) for cardiovascular risk reduction has been funded through HRSA in 2014. Based on the health service needs identified among the targeted populations through the previous two patient navigation programs, an IPCP team was formed with Nurse Practitioners, Pharmacists, Psychologists, Registered Dietitians, and CHWs. A total of 240 patients have been enrolled since 2014. Other than the outcomes similar to the previous programs, medication adherence rate, Generalized Anxiety Disorder 7-item (GAD-7) score, PHQ-9 depression score and clinical visits data from EMR have also been collected. The trend for improvement on these additional measurements has been identified and the final outcomes will be available after March 2018.

Conclusion

Patient outreach programs using TFH framework improved both clinical and behavioral outcomes among the low-income patients with chronic diseases. Interprofessional team has been a valuable component of the program.

First Primary Presenting Author

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Professional Experience: 2000- Professor, Texas Tech University Health Sciences Center (TTUHSC), School of Nursing, Lubbock, Texas 2000- Associate Dean for Clinical Services and Community Engagement, TTUHSC, School of Nursing, Lubbock, Texas 1997-2000 Associate Professor and Director of Graduate Program, Lamar University College of Arts and Sciences, Beaumont, Texas 1996-2000 Family Nurse Practitioner, UTMB-Lamar University Nursing Department Telehealth Clinic, Beaumont, Texas Selected Honors and Recognition • Phi Kappa Phi Honor Society, Lamar University Chapter, Member 1986-present • Selected Participant, Scientists as Subjects: The Poynter Center for the Study of Ethics and American Institutions. Indiana University. March, 2001 • Kappa Kappa Chapter, President, 1988-1990; Member, 1990-present; Chair, 1995-2001 • Recipient, The 2000 Julie and Ben Rogers Award for Community Service, Lamar University. • Primary Health Care Fellow, HRSA Bureau of Primary Health Care, 2005 • Robert Wood Johnson Executive Nurse Fellow, 2005

Author Summary: As the previous Associate Dean of Clinical Services and Community Engagement, I have extensive experience in interprofessional collaborative practice for over decades and have published work in chronic diseases management, transformation for health and Interdisciplinary Diabetes

Workshop for Healthcare Professionals. As the Project Director of all three programs, I'm knowledgeable for programs and framework.

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Professional Experience: 2014-current Sr. Research Associate/Statistician, TTUHSC, SON, Lubbock, TX 2011-2013 Lead Analyst, TTUHSC, SON, Lubbock, TX 2010-2011 Analyst II, TTUHSC, School of Nursing, Lubbock, TX 2003-2008 Research Assistant, University of Illinois at Urbana-Champaign, Urbana, IL 1999-2001 Project Associate/Pharmacist, Livzon Pharmaceutical Group, Guangdong, China
Author Summary: I have my MS degree in statistics and PhD in food sciences and human nutrition. My research is focused on quality improvement programs for healthcare and service delivery. I'm also interested in chronic disease self-management program development and evaluation.

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Author Summary: I'm the Associate Dean for Clinical Services and Community Engagement and have been the Executive Director of the LCCHWC, which is a FQHC located in a medically underserved area, for over 11 years. I have been the program coordinator for all the patient navigation programs presented in this presentation.

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past 4 years.

Author Summary: I have been the instructor and unit manager for our CHW certification program and patient navigation programs for over 5 years. I have trained over 40 community health workers for the past 4 years. I also provide direct services to our patients in our patient navigation programs.