Effects of Community Health Workers on Chronic Disease Self Management

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PRESENTATION OBJECTIVES

• Discuss the role of the Community Health Worker (CHW) in the Patient Navigator (PN) program to facilitate chronic disease self management

• Describe the Transformation for Health conceptual framework as context for the PN program

• Delineate the infrastructure and services of the PN program

• Explain the clinical and behavioral outcomes of the PN program
THE LARRY COMBEST COMMUNITY HEALTH AND WELLNESS CENTER
This Center is funded by the Bureau of Primary Health Care, Health Resources and Services Administration of the US Department of Health and Human Services
THE LARRY COMBEST CENTER

• Established in 1988 to provide TTUHSC student health services
• Changed focus to provide primary care services to underserved populations in East Lubbock in 1998
• A Nurse-managed FQHC that is a public entity
• Co-Applicant Governing Board – Combest Health and Wellness Center Community Alliance (CHWCCA)
• TTUHSC acts as fiscal unit
• Administered by the School of Nursing for TTUHSC
• All employees are hired by the SON
OUR FOUR MAIN PROGRAMS.

- Primary Care for children and adults
- Senior House Calls
- Diabetes Education Center
- Sunrise Canyon Integrated Behavioral Health Services

“Increase access to Healthcare, Employ Communities”
Primary Care Clinic

- Adult and Children
- Sick and well visits
- Physicals for all ages

- Immunizations
- Minor injuries

- Chronic Disease Management Programs
- Onsite Laboratory
- Prescription Assistance

- Nutritional Education
- Case Management
- Behavioral Counseling
Senior House Calls

• Provide unique primary care to patients in their own home
• Our FNP’s are the designated patient’s primary care provider
• Treat and manage both acute and chronic illness
• Coordinate care between families, community, social services, and home health/hospice management
Diabetes Education Center

• The only certified program in Lubbock
• Registered Dietician and Bilingual RN
• One on one education
• Group classes
• Support groups
• Home visits
Sunrise Canyon Behavioral Health Services

• Collaborative partnership with local MHMR provider

• Provides primary care to people with serious mental illnesses

• Behavioral health services integrated with primary care

• Clinic co-located in Sunrise Canyon, a MHMR residential facility
THREE ADDITIONAL PROGRAMS.

- Nurse Family Partnership
- Patient Navigator
- Stork’s Nest

“Increase access to Healthcare, Employ Communities”
TRANSFORMACION PARA SALUD: PATIENT NAVIGATOR PROGRAM

This program was funded by the Bureau of Health Professions, Health Resources and Services Administration of the US Department of Health and Human Services

Demonstration Program: 2008-2010
Post-Demonstration Program: 2010-2013
Program Description

Organization based on the Clinical Services and Community Engagement Program of the School of Nursing, TTUHSC

Vulnerable clients of the Larry Combest Community Health and Wellness Center who live primarily in Lubbock county

Transformation for Health conceptual framework developed by Dr. Christina Esperat, et al, used as the foundation
An approach is needed to help patients change or adopt healthy behaviors – by themselves, not for them by others.

From *Pedagogy of the Oppressed*

Paolo Freire
• Came from his work with oppressed minorities in the *favelas* of Brazil
• Has been used in many parts of the world to help people improve their lives
Transformational process: a multilevel approach

Pre-consciousness

Critical Consciousness

Intention

Decision

Transformation

Individual

Family

Community

Society
LOGIC MODEL FOR TRANSFORMATION FOR HEALTH FRAMEWORK APPLICATION

CONSTRUCTS

- Cognition
  - Critical Consciousness
- Intention
  - Self-efficacy, Social Support
- Decision
  - Barriers and Facilitators
    - Goal Setting
- Transformation
  - Self-Guided Evaluations
    - Modification of Goals

IMPLEMENTATION

- Motivational Interviewing
- Self-Efficacy Enhancement
- Identification of Social Support
- Promotion of Effective Use of Social Support
- Assistance in Goal Setting:
  - Identify Barriers and Facilitators

OUTCOMES

- Apprehension of Clients’ Realities and Readiness to Change
- Enhanced Self Efficacy for Health Behaviors Change
- Intention to Adopt Positive Health Behaviors
- Effective Use of Social Support in Health Behavior Change
- Realistic Goal Setting for Health Behavior Change
- Maintenance of Goals
- Continued Positive Health Behaviors

DISTAL END POINTS: Targeted biomarker goals met for specific Chronic Disease Management Programs, hospital and Emergency Room admissions
• Improve health care outcomes for vulnerable individuals in Lubbock County using Certified Community Health Workers as patient navigators.
TRANSFORMACION PARA SALUD

Original three year funding from the Bureau of Health Professions

Personnel hired:

0.75 FTE Program Coordinator
1.0 FTE Clerical Specialist
4.0 FTE Community Health Workers
### Target population

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Hispanic</th>
<th>Non-Hispanic</th>
<th>Gender and Age</th>
<th>Male</th>
<th>Female</th>
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</thead>
<tbody>
<tr>
<td>Asian</td>
<td>0%</td>
<td>.5%</td>
<td>&lt;20 years</td>
<td>13%</td>
<td>14%</td>
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<tr>
<td>Black</td>
<td>3.5%</td>
<td>11%</td>
<td>20-64 years</td>
<td>22%</td>
<td>37%</td>
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<tr>
<td>White</td>
<td>22%</td>
<td>24%</td>
<td>65 and over</td>
<td>4%</td>
<td>9%</td>
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<tr>
<td>&gt; 1 Race</td>
<td>0%</td>
<td>1%</td>
<td></td>
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<tr>
<td>Unreported</td>
<td>38%</td>
<td>0%</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Total</td>
<td>63.5%</td>
<td>36.5%</td>
<td></td>
<td>39%</td>
<td>61%</td>
</tr>
</tbody>
</table>
Conditions Navigated

- Diabetes
- Hypertension
- Asthma
- CHF
- Co-morbidities
  - Depression
  - Obesity
## Target Population

<table>
<thead>
<tr>
<th>Income by FPL</th>
<th>Chronic Disease Pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% and below</td>
<td>59%</td>
</tr>
<tr>
<td>101-150%</td>
<td>10%</td>
</tr>
<tr>
<td>151-200%</td>
<td>4%</td>
</tr>
<tr>
<td>Over 200%</td>
<td>.5%</td>
</tr>
<tr>
<td>Unknown</td>
<td>26.5%</td>
</tr>
</tbody>
</table>

- Diabetes: 424
- Asthma: 153
- Hypertension: 435
Challenges of Navigated Community

- Low socio-economic status
- Low health literacy
- Multiple co-morbidities
- Inadequate resources
- Transportation issues
- External locus of control
EXPERIENCE WITH ADMINISTRATIVE STRUCTURE

Chronic disease management program in place

e-MDs

Cadre of certified culturally-competent CHWs

Extensive combined experience in administration for program planning, development, implementation and evaluation

Accessible experts

Strong institutional and community networks
NAVIGATOR RECRUITMENT AND TRAINING

• TTUHSC SON certified institution by Texas Department of State Health Services
• Cadre of certified Community Health Workers
• Recruitment through West Texas CHW network
• 160 hour core training
• 6 week intermediate training
<table>
<thead>
<tr>
<th>Certification requires training in the following competencies:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Communication</td>
</tr>
<tr>
<td>• Interpersonal</td>
</tr>
<tr>
<td>• Service Coordination</td>
</tr>
<tr>
<td>• Capacity Building</td>
</tr>
<tr>
<td>• Advocacy</td>
</tr>
<tr>
<td>• Teaching</td>
</tr>
<tr>
<td>• Organizational</td>
</tr>
<tr>
<td>• Knowledge Base</td>
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<table>
<thead>
<tr>
<th>Additional training provided in the following modules:</th>
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</thead>
<tbody>
<tr>
<td>• Targeted Chronic Diseases</td>
</tr>
<tr>
<td>• Clinical Trials</td>
</tr>
<tr>
<td>• Case management</td>
</tr>
<tr>
<td>• Motivational Interviewing</td>
</tr>
<tr>
<td>• Transformation for Health Model</td>
</tr>
<tr>
<td>• CLAS Standards</td>
</tr>
<tr>
<td>• Agency policies</td>
</tr>
<tr>
<td>• Reporting &amp; Tracking</td>
</tr>
<tr>
<td>• Ongoing weekly training/review</td>
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</table>
CHW INTERVENTIONS

Provision of enabling services

- One-on-one supervision and guidance for self management of chronic disease(s)
- Face to face and telephonic interactions
- Motivational interviewing, self-efficacy enhancement, effective use of social support, maintenance of goal behaviors

Referrals to health and human services agencies

Referrals for Clinical Trials
• CHWs CITI training certified

• Referral protocols (two-way referrals) established between TPS and Clinical Trials Division at TTUHSC

• Presentation during the training period by the Clinical Trials Division Coordinator of the Clinical Trials program at TTUHSC
EXAMPLES OF OUTREACH ACTIVITIES (2009)

- Arnett Elementary and Superior Health Plan
- Heart to Heart Health Fair
- Larry Combest Community Health and Wellness Center Health Fair
- Health and Safety Fair sponsored by Superior Health Plan
- Health and Safety Fair sponsored by Superior Health Plan
- Women’s Health Fair sponsored by TTUHSC for international and Multicultural Affairs
- Community Health Center of Lubbock and American Cancer Society Health Fair
- Wilson Middle School Health Fair Wheelock Health Fair
- Family Book Night with Superior Health Plan
Method of Navigation

• Home Visitation Method

• Three methods of client recruitment implementing established protocols using a warm hand-off between clinic staff and navigator.
  
  • Clinic referrals from clinic staff
  • Data coordinator checks daily visit schedule (EMR)
  • Navigator present at clinic during busy walk-in days
Patient Encounters & Typical Interventions

• Patient encounters
  • Occur in the home
  • Community Center
  • Work-site
  • Clinic
  • Other

• Typical Interventions
  • Based on information collected from survey tools such as social and behavioral determinants
  • Education - Identified through health literacy assessments and weekly goal sheets
  • Accessing identified resources
Supervision and Ongoing Training

Supervision

• Project Coordinator
  ▪ Reflective Supervision
  ▪ Weekly Team Meetings
  ▪ One-on-one meetings
  ▪ Home visits with navigator-patient survey
  ▪ Performance Improvement monitors
  ▪ Monthly reports to BOD

Ongoing Training

• Areas identified during reflective supervision meetings and through weekly team meetings
  ▪ Community partners invited to team meetings
  ▪ Schedule flexibility to attend other trainings offered in community
Department & Community Partners

Department

• Interdisciplinary Team established to meet monthly consisting of
  ▪ NPs
  ▪ Nurses
  ▪ MA
  ▪ Receptionist staff
  ▪ DM Educator
  ▪ Behavioral Therapist
  ▪ PAP coordinator
  ▪ Billing staff

Community

• Strong relationships previously established through a community coalition- ELCCHI
• Most have the same interest in helping the community
• Built on face to face meetings and mutual give and take approach
Lessons Learned

- Fortunate to be part of the previous demonstration project
- Established CHW program with excellent training & preparation
- Weekly goals must be established with patients.
- Patient’s commitment level important
- Monthly review of data and outcomes necessary
- Accountability is a must
- Interdisciplinary team has been a valuable component of the program
EVALUATION OF OUTCOMES OF THE DEMONSTRATION PROGRAM

CLINICAL AND BEHAVIORAL OUTCOMES
HbA1c levels obtained upon enrollment into the program were averaged for 99 patients identified with diabetes and who had a pre and post HbA1c reading: from a baseline of 9.3%, a reduction to an average of 8.4% was noted post-navigation (*statistically significant*).

81 patients were assessed for changes to blood pressure readings prior and post navigation with significant differences noted.

68 patients navigated had BMI readings average of 34 pre and post navigation without changes.
Lipid panel of cholesterol, triglycerides, LDL and HDL pre and post showed a slight reduction in cholesterol, from 178mg/dl to 172.3mg/dl.

These clinical outcomes showed that the project was moderately successful in obtaining improved results on the biomarkers for the chronic diseases targeted.
<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Group Mean of Time 1 ±SD</th>
<th>Group Mean of Time 2 ±SD</th>
<th>The mean of Difference (Time1-Time2)</th>
<th>95% CI of Difference</th>
<th>t-value</th>
<th>p-value</th>
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<tr>
<td>Self Efficacy Diabetes Form</td>
<td>7.29±2.05</td>
<td>8.40±1.36</td>
<td>-1.12</td>
<td>[-1.56, -0.68]</td>
<td>-5.07</td>
<td>&lt;.0001</td>
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<td>Personal Resource Inventory Form</td>
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<td>2.38±1.19</td>
<td>2.38</td>
<td>[1.04, 3.71]</td>
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<td>Self Efficacy for Managing Chronic Disease 6 item Form</td>
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<td>8.29±1.54</td>
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<td>[-1.49, -0.49]</td>
<td>-3.98</td>
<td>0.0002</td>
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<tr>
<td>Social Provisions Scale Form</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Opportunity for Nurturance</td>
<td>12.31±2.20</td>
<td>11.97±1.97</td>
<td>0.58</td>
<td>[0.09, 1.07]</td>
<td>2.35</td>
<td>0.0212</td>
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<tr>
<td>Summary of Diabetes Self Care Activities Form</td>
<td>3.88±1.20</td>
<td>4.52±0.99</td>
<td>-0.77</td>
<td>[-1.11, -0.44]</td>
<td>-4.59</td>
<td>&lt;.0001</td>
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</table>
EVALUATION OF OUTCOMES OF THE POST DEMONSTRATION PROGRAM

CLINICAL AND BEHAVIORAL OUTCOMES
Since multiple measurements were collected for clinical markers, growth curve analysis was used to determine the trend of changes during the navigation period. Overall, HgbA1C and blood pressure diastolic were improved significantly during navigation period (See Figures below). BMI, blood pressure systolic and lipid profiles were not changed significantly during navigation.
Paired t-test was used to determine the differences on the behavioral scores of VR12(SF12), SED, SEMCD, SDSCA, SPS and PHQ9 surveys between post- and pre- navigation program. The following scores were improved significantly through the program (P<.05)

- **VR12 (SF12v2) Health Survey** = 12 questions measuring Physical and Mental Health Composite Scale scores (PCS and MCS). MCS score was significantly improved through navigation program.

- **Self-Efficacy for Diabetes Scale (SED)** = 8 questions to test diabetes self-management.

- **Self-Efficacy for Managing Chronic Disease 6-Item Scale (SEMCD)** = covers domains that are common across many chronic diseases.

- **Summary of Diabetes Self-Care Activities (SDSCA)** measure of last SEVEN days the patients followed activities they should do. Patients increased the days of following activities: following general healthful diet plan (Gen_Diet), Blood-Sugar Testing (BST) and Foot Caring (Foot) but not specific diet and exercise.

![Significant Differences between Post- and Pre- Navigation program](chart.png)
The following graphs indicate the percentage of improvement and the baseline scores for the surveys with significant improvements.
### BEHAVIORAL OUTCOMES
**(POST DEMONSTRATION Program)**

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>N</th>
<th>Group Mean of Pre- ±SD</th>
<th>Group Mean of Post- ±SD</th>
<th>The mean of Difference (Post-Pre)</th>
<th>95% CI of Difference</th>
<th>p-value</th>
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<tbody>
<tr>
<td>VR12 MCS Score</td>
<td>51</td>
<td>41.94±13.66</td>
<td>48.14±14.07</td>
<td>6.21</td>
<td>[2.22, 10.19]</td>
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<tr>
<td>Self Efficacy Diabetes Form</td>
<td>37</td>
<td>6.01±1.95</td>
<td>7.40±1.51</td>
<td>1.38</td>
<td>[0.72, 2.04]</td>
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<tr>
<td>Self Efficacy for Managing Chronic Disease 6 item Form</td>
<td>57</td>
<td>6.16±2.24</td>
<td>6.83±2.37</td>
<td>0.67</td>
<td>[0.06, 1.30]</td>
<td>0.0334</td>
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<tr>
<td>Summary of Diabetes Self Care Activities Form</td>
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<td>General Diet</td>
<td>39</td>
<td>3.96±2.30</td>
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<td>Blood-Sugar Testing</td>
<td>39</td>
<td>3.32±2.89</td>
<td>4.80±2.61</td>
<td>1.49</td>
<td>[0.45, 2.53]</td>
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<tr>
<td>Foot Care</td>
<td>39</td>
<td>4.77±2.29</td>
<td>5.46±1.68</td>
<td>0.69</td>
<td>[0.07, 1.31]</td>
<td>0.0298</td>
</tr>
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</table>
LOGIC MODEL FOR TRANSFORMATION FOR HEALTH FRAMEWORK APPLICATION

CONSTRUCTS

- Cognition: Critical Consciousness
- Intention: Self-efficacy, Social Support
- Decision: Barriers and Facilitators, Goal Setting
- Transformation: Self-Guided Evaluations, Modification of Goals

IMPLEMENTATION

- Motivational Interviewing
- Self-Efficacy Enhancement
- Identification of Social Support
- Promotion of Effective Use of Social Support
- Assistance in Goal Setting: Identify Barriers and Facilitators
- Facilitation of Evaluation of Outcomes
- Guidance in Modification of Goals if Outcomes Not Met

OUTCOMES

- Apprehension of Clients’ Realities and Readiness to Change
- Enhanced Self Efficacy for Health Behaviors Change
- Intention to Adopt Positive Health Behaviors
- Effective Use of Social Support in Health Behavior Change
- Realistic Goal Setting for Health Behavior Change
- Maintenance of Goals
- Continued Positive Health Behaviors

DISTAL END POINTS: Targeted biomarker goals met for specific Chronic Disease Management Programs, hospital and Emergency Room admissions
Any questions...??