Transformation for Health in Chronic Disease Among Vulnerable Populations

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School of Nursing
PRESENTATION OBJECTIVES

Describe the Transformation for Health conceptual framework as context for chronic disease management programs

Delineate the infrastructure of the three chronic disease management programs

Explain the clinical and behavioral outcomes of the three chronic disease programs
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
Transformational process: a multilevel approach
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
Setting: THE LARRY COMBEST COMMUNITY HEALTH AND WELLNESS CENTER
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
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
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

THREE PROGRAMS BASED ON TFH FRAMEWORK. . . .

Patient Navigation Demonstration Program (PND)

Patient Navigation Program (PN)

Interprofessional Collaborative Program for Cardiovascular Risk Reduction (IPCP)

(These three programs were funded by the US DHSS, HRSA Bureau of Health Workforce)
# Stages of Program Development

**AIM:** Improve access to quality primary health care services for economically and medically vulnerable individuals through interprofessional collaborative practice (IPCP).

<table>
<thead>
<tr>
<th>Stage 1 – PN stage</th>
<th>Stage 2 – IPCP Stage</th>
<th>Stage 3 – mHealth Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objectives</strong></td>
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<tr>
<td>Improving the patient experience of care;</td>
<td>Level 1 Plus:</td>
<td>Level 1 and 2 Plus:</td>
</tr>
<tr>
<td>Promoting CDSM;</td>
<td>Improving the quality of care through IPE;</td>
<td>Reducing the per capita costs through Technology such as in-home monitoring and Telemedicine services</td>
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<tr>
<td>Reducing the number of ER visits/hospitalization</td>
<td>Improving medication adherence among the target population;</td>
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<table>
<thead>
<tr>
<th>Enhanced Services</th>
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</thead>
<tbody>
<tr>
<td>Care coordination, resource referral, health education and behavioral/mental health monitoring through CHWs</td>
<td>Level 1 Plus:</td>
<td>Level 1 and 2 Plus:</td>
</tr>
<tr>
<td></td>
<td>Providing team-based care through IPCP members, which include NP, RN, LCSW, CHWs, psychologist, RD, and pharmacists.</td>
<td>Mental health services through Telemedicine;</td>
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<tr>
<td></td>
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<td>Following-up the patients through wearable and/or non-touch health devices and/or App</td>
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<table>
<thead>
<tr>
<th>Evaluation</th>
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<tbody>
<tr>
<td>Patient’s outcomes: Clinical and behavioral</td>
<td>Level 1 Plus:</td>
<td>Level 1 and 2 Plus:</td>
</tr>
<tr>
<td></td>
<td>IPE outcomes;</td>
<td>Costs per capita; Longitudinal home health monitoring.</td>
</tr>
<tr>
<td></td>
<td>Medication adherence;</td>
<td></td>
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<td></td>
<td>Encounters from EMR.</td>
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</table>
## Stages of Program Development

<table>
<thead>
<tr>
<th>Outcomes/ Predictions</th>
<th>Stage 2 – PN stage</th>
<th>Stage 2 – IPCP Stage</th>
<th>Stage 3 – mHealth Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Significant improvements on HgbA1C among Diabetes patients and CDSM behavioral outcomes.</strong></td>
<td>Similar clinical and behavioral outcomes as level 1 were confirmed. The Teamwork Attitudes Questionnaire (T-TAQ) scores for team structure, situation monitoring and communication were significantly improved after the TeamSTEPPS training</td>
<td>Higher checked out rate on scheduled clinic visits; Lower the total medical costs; Better medication adherence.</td>
<td></td>
</tr>
<tr>
<td><strong>Lost and withdraw rates among this population were high due to low socioeconomic status; Lower MCS and PCS than general population; Poor medication adherence among the patients with multiple chronic conditions.</strong></td>
<td>Low clinic visit check out rate among all types of scheduled visits; Medication adherence among low income patients still needs to be improved.</td>
<td>Requires IT support and internet access at patient’s home Medicare/Medicaid Billing policy Devices maintenance and HIPPA requirements</td>
<td></td>
</tr>
<tr>
<td><strong>Enhance the communication between CHWs and providers; Provide on-site medication consultation; Enhance mental health consultation.</strong></td>
<td>Lower the medical costs among the low income patients</td>
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# Target populations

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Hispanic</th>
<th>Non-Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>0%</td>
<td>.5%</td>
</tr>
<tr>
<td>Black</td>
<td>3.5%</td>
<td>11%</td>
</tr>
<tr>
<td>White</td>
<td>22%</td>
<td>24%</td>
</tr>
<tr>
<td>&gt; 1 Race</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Unreported</td>
<td>38%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>63.5%</strong></td>
<td><strong>36.5%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender and Age</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;20 years</td>
<td>13%</td>
<td>14%</td>
</tr>
<tr>
<td>20-64 years</td>
<td>22%</td>
<td>37%</td>
</tr>
<tr>
<td>65 and over</td>
<td>4%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>39%</strong></td>
<td><strong>61%</strong></td>
</tr>
</tbody>
</table>
## 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>Diabetes</td>
</tr>
<tr>
<td>101-150%</td>
<td>424</td>
</tr>
<tr>
<td>151-200%</td>
<td>Asthma</td>
</tr>
<tr>
<td>Over 200%</td>
<td>153</td>
</tr>
<tr>
<td>Unknown</td>
<td>Hypertension</td>
</tr>
<tr>
<td></td>
<td>435</td>
</tr>
<tr>
<td></td>
<td>26.5%</td>
</tr>
</tbody>
</table>
Common Chronic Diseases

Diabetes
Hypertension
Asthma
CHF

Co-morbidities

• Depression
• Obesity
Challenges of Patient Community

- Low socio-economic status
- Low health literacy
- Co-morbidities
- Inadequate resources
- Transportation
- External locus of control
Method of Care Delivery

Primary Care, focusing on chronic disease management

Behavioral health integration

Promotion of Chronic Disease Self Management (CSDM)

- Community-based service delivery - home, community centers, work-site, clinic, other

Education – identified through health literacy assessments and weekly goal sheets

Referrals to appropriate community resources

Transportation services
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
EVALUATIONS OF OUTCOMES OF THE PROGRAMS

BIOLOGIC AND BEHAVIORAL INDICATORS
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.
# TRANSFORMATION FOR HEALTH: EVALUATION OF BEHAVIORAL OUTCOMES (PND)

<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>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self Efficacy Diabetes Form</strong></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>
</tr>
<tr>
<td><strong>Personal Resource Inventory Form</strong></td>
<td>3.04±1.99</td>
<td>2.38±1.19</td>
<td>2.38</td>
<td>[1.04, 3.71]</td>
<td>4.20</td>
<td>0.004</td>
</tr>
<tr>
<td><strong>Self Efficacy for Managing Chronic Disease 6 item Form</strong></td>
<td>7.40±2.15</td>
<td>8.29±1.54</td>
<td>-0.99</td>
<td>[-1.49, -0.49]</td>
<td>-3.98</td>
<td>0.0002</td>
</tr>
<tr>
<td><strong>Social Provisions Scale Form</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Opportunity for Nurturance</strong></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>
</tr>
<tr>
<td><strong>Summary of Diabetes Self Care Activities Form</strong></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>
</tr>
</tbody>
</table>
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 SF12, SED, SEMCD, SOD, SPS and PHQ9 surveys between post- and pre-navigation program. The following scores were improved significantly through the program (P<.05):
TRANSFORMATION FOR HEALTH: EVALUATION OF OUTCOMES (IPCP)

ONGOING

TEAM STEPPS

CLINICAL OUTCOMES – research subset
investigating the changes in more sensitive biomarkers

BEHAVIORAL OUTCOMES
REFERENCES


