The Diabetes Garage: Remodeling DSMES
From Concept to Assembly

The University of Texas at El Paso
El Paso Diabetes Association
Southwest University

Learning Objectives

• Describe how the Community Based Participatory Research guidelines were used to tailor a DSMES program for Hispanic men in the El Paso TX region.

• Identify the process by which an interdisciplinary team was established to tailor a DSMES Hispanic men's program

• Describe how local culture was used to market and attract men to participate in DSMES

Presentation Overview

• The Diabetes Garage Conceptualization.

• Steering Committee: Navigating the program design and establishing the “pit crew”.

• The Remodel: DSMES overhaul.

• The Diabetes Garage acceptability and feasibility.
El Paso County TX

Population
- El Paso County Population = 835,593
- El Paso City Population = 683,080
- 82% Hispanic (Mexican-American)

Education (25 yrs. or more)
- High School or more = 78%
- Bachelor’s degree or more = 28%

Economic Profile
- Median Household Income = $42,000
- 21% persons in poverty

Why the Diabetes Garage in El Paso?

Diabetes Prevalence in El Paso County TX (80% Mexican Descent)
- 16.5% reported by Texas Health Department
- 30% of Medicaid/Medicare beneficiaries reported with diabetes
- Age Adjusted Mortality rate in El Paso
  - 39% Males
  - 27% Females

Source: Healthy Paso del Norte
1. Diabetes Assessment
   • 11 diabetes programs, 25 Certified Diabetes Educators
   • 75% female vs. 25% male participants in EPDA and YMCA DPP

2. Community Assessment of Men's Diabetes Risk Perception Survey:
   • IRB approved, N=80 males completed survey, Ages 19-51
   • 25% at risk for diabetes
   • Not follow Dr.'s advice: 51% = not motivated, 48% = no insurance, 43% = do not like visiting doctor's office
   • Reason to follow Dr.'s advice: 35% = severity of disease (death), 30% = values health
   • Summer 2018 Expansion of Community Assessment to include biological risk

Automotive Resource Assessment
• Car Culture a way to represent Hispanic culture
• 60-100 car events/year and over 60 car groups/organizations
• El Paso top 3 US cities with highest auto retailers
Establishing the “pit crew”

Interdisciplinary and Community Based Participatory Research

- Key Community Partners and Roles
  - El Paso Diabetes Association - Program Delivery
  - Southwestern University
  - Automotive and Diesel Technology Program – Technical Consultants and Program Delivery

- Steering Committee
  - YMCA Diabetes Prevention Program
  - University Medical Center Diabetes Program/Patient Education
  - Texas Tech University Online Science Center, Ophthalmology Clinic
  - NAPA auto part retailer
  - Interdisciplinary research team from the University of Texas at El Paso

El Paso Diabetes Association (EPDA)

- Celebrating 51 Years of Service to El Paso

- Non-Profit Agency
- Summer camps for children and teens with type 1 diabetes
- Medical Nutritional Therapy (MNT) via Registered Dietician/CDE
- Has AADE certification to deliver English and Spanish DSME/S programs and Gestational Diabetes classes
- Delivers the MOVE® diabetes prevention/management education program in the community
- Provides social support meetings for people with diabetes
- In past 14 years, EPDA sponsors a Faces of Diabetes conference for health professionals and community health workers

Three work groups:

1. Steering Committee (14 representatives)
   - Established March 2017 – meets monthly
   - Role is to guide and provide consultation on the planning, implementation, and evaluation of the Diabetes Garage

2. Automotive and Diabetes Translation work group
   - Established May 2017 – met 2/month over 5 months
   - Role is to design and plan the Diabetes Garage program

3. Program Evaluation work group
   - Established August 2017 – met 2/month over 4 months
   - Role is to guide and provide consultation on the planning and implementation of the Diabetes Garage
Advocacy Groups:

1. Patient advocacy group
   - First met October 2018
   - Role is to guide and develop strategies for improving men's engagement in clinical care.

2. Provider advocacy group
   - Planned for 2019
   - Role is to work with local hospitals and physicians for program recruitment strategies.

The Remodel: DSMES overhaul

DSMES (AADE 7 self-care behaviors)
- Healthy eating
- Being active
- Glucose monitoring,
- Taking medication
- Problem Solving
- Reducing risks
- Healthy coping

Curriculum Development our Classes / 2 hours each

Module 1: Features of your body & diabetes
  - Check your gauges (Signs/Symptoms)

Module 2: Mileage by steps (Physical activity)
  - Full throttle (Stress management)

Module 3: Catastrophic Failure (Complications)
  - Tune-up/Inspections (Visit your doctor)
  - Keep your battery charged (Medication use)

Module 4: Fuel (Nutrition) + Celebratory lunch/graduation with certificate of completion + toolbox gift

The Pit Crew
What has been accomplished thus far?

**Preliminary Data**
- Language / Technical Acceptability Focus Groups
  - 1 completed / 5 males and 1 planned
    - “Definitely trying to relate that to an automobile, or a garage. It’s a good concept.”
    - “Yeah, metaphors is a great way of transmitting information. It makes more sense.”
    - “So all these gauges, these visual aids, can help you understand everything better. I like it a lot.”

**Pilot study recruitment**

**Pilot 1**
**Outreach to men with/without diabetes**
- Car shows, health fairs, diabetes research studies, worksites (UTEP)
  - 23 men recruited
  - 10 men scheduled
  - 3 men attended
  - Mean age = 51.33 years
  - 66% retention rate

**Pilot 2**
**Outreach to men with diabetes**
- Health fairs, clinics, car shows, diabetes research study
  - 11 men recruited
  - 10 men scheduled
  - 8 men attended
  - Mean age = 63.86 years
  - 75% retention rate

Incentive: Men receive $20 cash and $10 gas card for participating.
Methods

1. Investigate whether men’s diabetes knowledge, intent to engage in preventative self-care, diabetes management behaviors and physical health outcomes improved after participating in The Diabetes Garage™
   a. Pre- post survey and clinical health assessments:
      • Diabetes knowledge: Modified Starr County Diabetes Knowledge Questionnaire
      • Diabetes Health Belief Scale on Perceived a) risk, b) severity, c) benefits and d) barriers
      • Diabetes management self-efficacy (National Diabetes Education Program)
      • Diabetes management behaviors (portion size, carbohydrate counting, physical activity)
      • Physical health outcomes (Glycosylated Hemoglobin A1c, non-Fasting glucose, Blood Pressure, Weight, Waist Circumference)
   b. Analysis: Non-parametric descriptive statistics and pre-post trend observation

Methods

2. Assess the acceptability and determine the feasibility of The Diabetes Garage™
   a. Two appreciative inquiry group discussions with participants of the Diabetes Garage pilot classes.
   b. Interview Guide:
      1) Why men chose to attend class
      2) Likes and Dislikes
      3) Why men would/would not attend classes
      4) Thoughts about Diabetes Garage concept for engaging men
      5) Recommendations/Suggestions
   c. Transcription of audio and transcription quality check
   d. Four individuals coded data based on questions
   e. Group consensus meeting on codes

Results: Participant SES Characteristics (N=11)

- Education
  • 60% University / College
  • 40% High School / Trade/Vocational
- Employment
  • 60% Employed full time
  • 30% Retired
- Income
  • 60% reported $40,001 - more than $100,000
  • 40% reported $40,000 or less
- Health Insurance
  • 5% reported some type of healthy insurance
Pre-Post Assessment Results:

Health Belief Scale – Vulnerability (Paired Sample)

I don't want to have a stroke tomorrow and have my wife taking care of me the next ten years, ... I'm heavy yes but I go to swim everyday, try to take care of myself much more -- she helps me too sometimes.

Note: Score range = 0 to 40

Pre Post Assessment Results:

Self Care Behaviors – Days measure food portions

Me and my son went to [omitted place] ... he ordered his steak, they brought the big salad and they brought the big plates and it was big. When she got my order as she was leaving I said, "Wait a minute, can you make mine a small portion?" and she did. She brought me a small plate ... I left that restaurant content, not over stuffed and he had a lot of trouble. He just couldn't finish it... And there — so they're indulging because they learn from us.

Pre Post Assessment Results:

Self Care Behaviors – Count carbohydrate servings

Participant 1: "But yeah, you can eat anything just kind of in moderation."

Participant 2: "You know, you need something how to order in restaurants."

Participant 3: "So what you learn from this class is that you... learn how to eat..."
**Pre Post Assessment Results:**
**Physical Health - Weight (N=6 Paired Sample)**

...The last four weeks since I started here, I lost 14lbs. just changing what I eat...

**Pre Post Assessment Results:**
**Physical Health - Blood Pressure (N=5 Paired Sample)**

Since I suffered from a massive heart attack in 1997... I've read here and there that diabetes can be more dangerous for individuals like myself with cardio problems so when I saw this at UTEP I took the opportunity to [get] input and came here to learn more about how to prevent it from going from this stage.

**Pre Post Assessment Results:**
**Physical Health - Glycosylated Hemoglobin A1c (N=5)**

I'm the type of guy, I'll eat once a day, if I have time. She really made me realize that I need to eat small meals or grab snacks to function, to get where I need glucose to function properly...
Appreciative Inquiry Focus Groups:
The Diabetes Garage Concept

- "The car, the garage was a good hook for me" "Typically men, ...take pride in what they drive ...it's a good catch point."
- "One of the reasons I'm here is that I saw that toolbox. That's what really attracted me to come to class, the toolbox"
- "I mean I know I'm mechanically inclined and just comparing—made a lot of sense, it's tremendous. I really enjoyed it, I really enjoyed it. I would do it all over again."
- "Just the fact of, changing from you know learning diabetes to the comparisons, to engines and so forth."

Appreciative Inquiry Focus Groups:
The Diabetes Garage Concept

- "...learning diabetes to the comparisons, to engines and so forth. I think,... if you, just concentrated on one area like, the basic of diabetes and that's all you talk about you're gonna get a bunch of people that really not going to listen. But if you intertwine with, ok, this is how it affects the car and this is how your body runs and so forth and so on, then it provided...more of an interest for me! To not only know about diabetes but to also know about cars too."

Conclusion

1. The Diabetes Garage™ shows the potential to improve men's self-care behaviors and physical health outcomes
2. The concept of using automotive maintenance/repair analogies is reported to be an acceptable approach for engaging men
   - Suggestions to include sports analogies for non-car guys
3. Additional funding can provide resources for improving recruitment efforts and ease with feasibility of logistics for pre-post assessments
Limitations and Strengths

Limitations

1. Small sample size does not allow assessing accurate impact of The Diabetes Garage™ or generalizability
2. Convenience sample and selection bias may exist where men who more apt to attend classes participated in The Diabetes Garage™

Strengths

3. Quantitative and qualitative data collected
4. Support: Momentum to plan, prepare curriculum-garage, and implement pilot studies occurred within 1 year time frame
5. Valuable lessons learned via pilot studies

Next Steps

- Funding secured to implement The Diabetes Garage™ in 2019
- Community financial donations for implementing classes
- Expand partnerships to increase outreach efforts

Thank you
From The Diabetes Garage Steering Committee