Reduces the incidence of heart disease and high blood pressure by approximately 40%. Lowers the risk of stroke by 27%.

*Lowers the risk of developing type II diabetes by 58%*

*Can be twice as effective in treating type II diabetes than the standard insulin prescription and can save $2,250 per person per year when compared to the cost of standard drug treatment.*

Adults with greater muscle strength have a 20% lower risk of mortality than adults with low muscle strength.

*A low level of fitness is a bigger risk factor for mortality than mild-moderate obesity. It is better to be fit and overweight than unfit with a lower percentage of body fat.*

Can decrease depression as effectively as Prozac or behavioral therapy.

---

**Optimal Therapy**

Reduce the incidence of heart disease and high blood pressure by approximately 40%.

Lowers the risk of stroke by 27%.

*Lowers the risk of developing type II diabetes by 58%*

*Can be twice as effective in treating type II diabetes than the standard insulin prescription and can save $2,250 per person per year when compared to the cost of standard drug treatment.*

Adults with greater muscle strength have a 20% lower risk of mortality than adults with low muscle strength.

*A low level of fitness is a bigger risk factor for mortality than mild-moderate obesity. It is better to be fit and overweight than unfit with a lower percentage of body fat.*

Can decrease depression as effectively as Prozac or behavioral therapy.
Physical Activity Guidelines for U.S. Adults

**Aerobic Activity:**
- A minimum of 150 minutes of moderate intensity aerobic activity per week
- 75 minutes of vigorous intensity aerobic activity per week
- An equivalent combination of the two per week

**Resistance Training:**
- A minimum of 2 days per week of resistance training

**Underlying Message:**
Some is better than none, more is better than some

Statement of the Problem

- **Receive less** support, education and encouragement for physical activity compared to other aspects of DSME/S
- Only **39%** are considered regularly active
- Ages 60 years and older are **2-3x more likely to report inability** to walk ¼ mile, climb stairs, or do housework

Diabetes Educators

**AADE 2014 Membership Information**
- 53% are Nurses (now 61%)
- 29% are Dietitians (now 25%)
- 9% pharmacists (now 11%)
- 3% other (same)
  - < 1% exercise physiologists
  - 46 of the 17,876 CDEs
- 63% are CDE and or BC-ADM (now 62%)

Objective

- To identify factors that may influence the diabetes educator’s ability to counseling on physical activity (PA) during DSME/S

Study Aims

**Primary Aims**
- Time dedicated to PA counseling
- Importance placed on PA as a treatment
- Knowledge of the current PA guidelines for Adults
- Level of Confidence for PA counseling
- Barriers toward PA counseling
  - Personal
  - Practice based

**Exploratory Aims**
- Level of Education
- Education Background
- Practice Setting
- Possession of the CDE
- Personal Exercise behaviors

Recruitment and Sample Population

- Diabetes Educators attending the AADE, 3rd Annual PA State Diabetes Conference

  **Eligibility Criteria:**
  - Currently practicing Diabetes Educators
  - Providing DSME/S to adults (18 years and older)

  **Survey Distribution:**
  - Unique identifier
  - Approved by AADE State Coordinating Body and Pitt IRB

  **Incentives:**
  - Raffle for $150
  - Diabetes and Exercise Resource
    - Exercise and Diabetes: A Clinician’s Guide to Prescribing Physical Activity written by Sheri Colberg, PhD
Demographics

Table 1: Demographic characteristics of the Diabetes Educators who responded to the survey at the 2014 Pennsylvania State Diabetes Conference

<table>
<thead>
<tr>
<th>Variables</th>
<th>Categories</th>
<th>Sample (%)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (N)</td>
<td></td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Age (Years)</td>
<td>51.9 ±10.7</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Gender (% Female)</td>
<td>95.8% (114)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Caucasian</td>
<td>94.1% (112)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Black or African American</td>
<td>3.4% (4)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td>.8% (1)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Asian</td>
<td>.8% (1)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Other</td>
<td>.8% (1)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Hispanic (% Yes)</td>
<td>2.5% (3)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Educational Discipline</td>
<td></td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Nursing</td>
<td>60.5% (72)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Nutrition</td>
<td>28.6% (34)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>5.9% (7)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Health Education</td>
<td>2.5% (3)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Other (Exercise Physiologist)</td>
<td>1.7% (2)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Other</td>
<td>.8% (1)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Level of Education</td>
<td></td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Associate’s Degree</td>
<td>11.8% (14)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>50.4% (60)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Master’s Degree</td>
<td>23.5% (28)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Doctoral Degree</td>
<td>5.0% (6)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>Other Degree</td>
<td>9.2% (11)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>CDE (% Yes)</td>
<td>73.9% (88)</td>
<td></td>
<td>119</td>
</tr>
</tbody>
</table>

Demographics (Cont.)

Table 2: Delivery of Diabetes Self-Management and Support

<table>
<thead>
<tr>
<th>Variables</th>
<th>Categories</th>
<th>Sample (%)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (N)</td>
<td></td>
<td></td>
<td>111</td>
</tr>
<tr>
<td>DSME/S Format:</td>
<td>Group 21.6% (24) Individual 78.4% (87)</td>
<td></td>
<td>111</td>
</tr>
<tr>
<td>DSME/S Setting:</td>
<td>Inpatient 22.8% (26) Outpatient 77.2% (88)</td>
<td></td>
<td>114</td>
</tr>
<tr>
<td>Practice Setting:</td>
<td>outpatient 51.7% (60) primary care 11.2% (13)</td>
<td></td>
<td>116</td>
</tr>
<tr>
<td></td>
<td>within hospital 19.0% (22) pharmacy 4.9% (5)</td>
<td></td>
<td>116</td>
</tr>
<tr>
<td></td>
<td>home health 1.7% (2) other 15.5% (18)</td>
<td></td>
<td>116</td>
</tr>
<tr>
<td>Performing DSME/S:</td>
<td>Years 13 ±8.62</td>
<td></td>
<td>115</td>
</tr>
</tbody>
</table>

Time Counseling on Physical Activity

Figure 1: Percent of Time Spent Addressing the 4 Common Content areas of DSME/S

Importance of Physical Activity Counseling

Table 3: Level of Importance Placed on the 4 Common Content Areas of Diabetes Self-Management Education and Support

<table>
<thead>
<tr>
<th>Variables</th>
<th>Median Rank</th>
<th>(% of N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Eating</td>
<td>20.4% (22)</td>
<td></td>
</tr>
<tr>
<td>Taking Medications</td>
<td>31.8% (34)</td>
<td></td>
</tr>
<tr>
<td>Physical Activity</td>
<td>21.5% (23)</td>
<td></td>
</tr>
<tr>
<td>Blood Glucose Monitoring</td>
<td>26.2% (28)</td>
<td></td>
</tr>
</tbody>
</table>

Physical Activity Guidelines Knowledge

Table 4: Knowledge of Current PA Guidelines for Adults

<table>
<thead>
<tr>
<th>Variable</th>
<th>Established Guidelines [% Yes(N)]</th>
<th>Percent Stating Correct Guidelines (N)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAPA</td>
<td>-----------</td>
<td>74 (88)</td>
<td>150-300 min</td>
</tr>
<tr>
<td>VAPA</td>
<td>40.2 (45)</td>
<td>51% (23)</td>
<td>75-300 min</td>
</tr>
<tr>
<td>RT</td>
<td>64 (72)</td>
<td>98.6 (71)</td>
<td>2-5 days</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Most likely to report correct amount of MAPA and VAPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition Degree</td>
<td>(p&lt;0.011)</td>
</tr>
<tr>
<td>CDE</td>
<td>(p&lt; 0.001)</td>
</tr>
</tbody>
</table>

Counseling Confidence

Table 5: Level of Confidence for Delivering PA Counseling as a Treatment

<table>
<thead>
<tr>
<th>Variable</th>
<th>Very Confident [% (N)]</th>
<th>Somewhat Confident [% (N)]</th>
<th>Not Confident at All [% (N)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAPA</td>
<td>54.7 (64)</td>
<td>41 (48)</td>
<td>4.3 (5)</td>
</tr>
</tbody>
</table>

- Those working in the inpatient hospital setting had a significantly greater level of confidence compared to the outpatient hospital setting (mean rank= 65.7 versus 48.7, respectively) (p=0.01). - Those who engage in regular physical activity (over last 6 months) were more confident compared to their inactive counterparts (p=0.02).
Summary of Findings

- Diabetes educators spend the least amount of time addressing physical activity (Aim 1)
- Diabetes educators ranked physical activity as the 3rd most important treatment strategy (Aim 2)
- Physical Activity Guidelines (Aim 3):
  - 25% did not report at least 150 minutes per week of MPA
  - 80% did not report at least 75 minutes per week of VPA
  - 37% did not report at least 2 days per week of RT
- 55% felt very confident counseling on physical activity (Aim 4)
- Barriers (Aim 5):
  - Greatest personal barrier was “assuring safe physical activity plans for diabetes patients”
  - Greatest practice barrier was “time to discuss physical activity”

Who is Responsible for PA Counseling??

- 30% of DEs stated they are not responsible for counseling on PA
  - 60% CEP
  - 14% not sure
  - 11% MD
  - 8% Personal Trainer

We are reaching a point where NOT prescribing or counseling on physical activity should be considered patient neglect?

KEEP CALM AND COUNSEL ON EXERCISE
Address Physical Activity??

Common physical activity counseling approaches

AADE 15

AADE 15

AADE 7 Self Care Behaviors

- Monitoring
- Taking Medications
- Healthy Eating
- **Being Active**
  - Reducing Risks
  - Problem Solving
  - Healthy Coping

The role for Physical Activity in Clinical Settings are expanding

- The Healthcare sector is the nation’s largest industry
- Healthcare professionals are **INCREASINGLY** called upon to initiate physical activity counseling
  - Change in policies = change in deliveries
- DEs can expand our worth by becoming a stronger resource for engaging patients in **effective** physical activity regimens through a number of avenues

Coordinated Care

Physical activity Resources (for patient and provider)

**Continuing Education**
- ADA, ACSM, AADE
- Webinars
- Online Learning
- Certification (ACSM, ACE, NSCA, NASM, etc.)

**WEB SOURCES**
- [www.health.gov/paguidelines/guidelines](http://www.health.gov/paguidelines/guidelines)
- [www.acsm.org](http://www.acsm.org)
- [www.exerciseismedicine.org](http://www.exerciseismedicine.org)
- [www.acefitness.org](http://www.acefitness.org)
- [http://www.diabetesmotion.com](http://www.diabetesmotion.com)

**Activity Trackers/Apps**
- My Fitness Pal
- Map My Fitness
- Fitbit

What happened to written logs????

BOOKS

Physical Activity Resources: REFERRALS

Clinical Exercise Centers
- Medical/ Clinical Exercise Centers
  - Cardiac Rehabilitation
  - Physical Therapy
  - Diabetes Exercise Centers

MARSHALL UNIVERSITY Diabetes Exercise Center

Effects of the Cardiac Rehab Setting on Diabetes Patients

<table>
<thead>
<tr>
<th>Economic Domain</th>
<th>Medical System Utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>Pre</td>
</tr>
<tr>
<td>Medication</td>
<td>7.94</td>
</tr>
<tr>
<td>ER visits</td>
<td>1.68</td>
</tr>
<tr>
<td>Hospital Admissions</td>
<td>1.08</td>
</tr>
<tr>
<td>Physician visits</td>
<td>8.39</td>
</tr>
</tbody>
</table>

*p<0.01

Diabetes Patients with CVD Enrolled in a Diabetes Exercise Program (4 year results)

Diabetes Patients with CVD Enrolled in a Diabetes Exercise Program (4 year results)

Physical Activity Resources: REFERRALS

Fitness Centers
- Community Fitness Centers
- YMCA
- LA Fitness
- SNAP Fitness
- Wellness Centers
General Recommendations for Chronic Disease Management and Prevention:

150 minutes of moderate aerobic exercise per week

OR

75 minutes of vigorous aerobic exercise per week

OR

Equivalent combination of moderate to vigorous aerobic exercise per week

PLUS:

2 days per week resistance training

MY CHALLENGE TO YOU
TRAIN YOUR WEAKNESSES:

• Expand YOUR:
  - Medical home resources
  - Referrals, measuring/demonstration tools
  - Physical activity knowledge
  - Physical Activity counseling strategies

Thank You

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Marshall University
William Marley, PhD
Lois Adkins, MS
Kari Britt, MS

AADE Members
Physical Activity Community of Interest

References