



Research Questions

1. Is there a relationship between diabetes educators' beliefs towards the patient as self-manager as measured by the CS-PAM, and self-management support strategies employed by diabetes educators in clinical encounters as measured by the Clinician Self-Management Scale?
2. Are there statistically significant differences in the beliefs of diabetes educators towards the importance of patient self-management, as determined by the CS-PAM, and the diabetes educators' characteristics (discipline, work setting, age, gender, and years as a diabetes educator)?
3. Are there statistically significant differences in the self-support management strategies used by diabetes educators when consulting with their patients, as determined by the Clinician Self-Management Scale, and diabetes educators' characteristics (as above)?

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Conceptual Model

- Goal of self-management support is to help patients take a more active role and be more competent and confident managers of their health and health care.



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Instrumentation

- Clinician Support—Patient Activation Measure (CS-PAM)
 - Assesses beliefs towards patient self-management and the extent HCPs support self-management (4 domains or patient competencies)
 - Scored on a 0-100 metric
- Clinician Self-Management Scale
 - Assesses HCPs-reported strategies used to support patients
- Reliability analysis:
 - $\alpha = .83$ (CS-PAM) and $\alpha = .84$ (Clinician Self-Management Scale)

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CS-PAM Domains

Four domains assess a clinician's view of a patient's role in their care

| Domain | Not important | Somewhat important | Important | Extremely important | N/A |
|--|---------------|--------------------|-----------|---------------------|-----|
| Patient should follow medical advice | | | | | |
| Are able to take actions that will help prevent or minimize symptoms associated with their health condition(s)? | Not important | Somewhat important | Important | Extremely important | N/A |
| Are able to make and maintain lifestyle changes needed to manage their chronic condition? | Not important | Somewhat important | Important | Extremely important | N/A |
| Can follow through on medical treatments you have told them they need to do at home? | Not important | Somewhat important | Important | Extremely important | N/A |
| Understand which of their behaviors make their chronic condition better and which ones make it worse? | Not important | Somewhat important | Important | Extremely important | N/A |
| Patient should make independent judgments | | | | | |
| Know what each of their prescribed medications is for? | Not important | Somewhat important | Important | Extremely important | N/A |
| Are able to figure out solutions when new situations or problems arise with their health condition(s)? | Not important | Somewhat important | Important | Extremely important | N/A |
| Are able to determine when they need to go to a medical professional for care and when they can handle the problem on their own? | Not important | Somewhat important | Important | Extremely important | N/A |
| Patient should function as member of care team | | | | | |
| Want to be involved as a full partner with me in making decisions about their care? | Not important | Somewhat important | Important | Extremely important | N/A |
| Tell you the concerns they have about their health even when you do not ask? | Not important | Somewhat important | Important | Extremely important | N/A |
| Want to know what procedures or treatments they will receive and why before the treatments or procedures are performed? | Not important | Somewhat important | Important | Extremely important | N/A |
| Patient should independently seek info | | | | | |
| Understand the different medical treatment options available for their chronic condition(s)? | Not important | Somewhat important | Important | Extremely important | N/A |
| Look for trustworthy sources of information about their health and health choices, such as on the web, news stories, or books? | Not important | Somewhat important | Important | Extremely important | N/A |
| Bring a list of questions to their office visit? | Not important | Somewhat important | Important | Extremely important | N/A |

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Clinician Self-Management Scale

LAST MONTH, when you treated patients with chronic conditions, how often did you do each of the following? Never (1), Rarely (2), Sometimes (3), Often (4), Very often (5)

1. Tell the patient you will be their "coach" but that they are the one that has to carry out the plan
 2. Ask the patient what change s/he wants to focus on
 3. Work with the patient to jointly set very specific behavioral goals (e.g. walk up two flights of stairs or around the block daily)
 4. Try not to overwhelm a patient with too many recommended changes
 5. Have patients come back frequently to check on progress towards behavioral goals
 6. Celebrate with the patient when they make even small behavioral improvements
- When a patient is not making progress toward a needed behavioral change, like exercising or diet, how often do you: Never (1), Rarely (2), Sometimes (3), Often (4), Very often (5)
7. Brainstorm with the patient on how to overcome the problems holding them back
 8. Challenge them to try to take one small step toward a change
 9. Tell the patient how much you care about him/her and his/her health

Greene et al., 2016

Design and Methodology

- Quantitative, cross-sectional, descriptive, correlational study
- Power analysis: alpha of .05, power of .8, and a moderate effect size of .13 ($R^2 = .13$); estimated sample size is 85 participants

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Inclusion / Exclusion / Setting

- Inclusion criteria:
 - Diabetes educators, a registered nurse, registered dietitian, or pharmacist with training and experience pertinent to DSMES, or another professional with certification in diabetes care and education, such as a CDE and a BC-ADM;
 - provide DSMES to persons with diabetes;
 - are working in an AADE outpatient accredited diabetes education program;
 - have an Internet connection, and;
 - are English speaking.
- Exclusion criteria:
 - HCPs who do not possess training and experience with DSMES, and;
 - do not work in accredited diabetes education programs.
- Setting: various outpatient facilities

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Data Collection Methods

- Letter of invitation (informed consent) with self-report online survey using *Qualtrics*
- Participant anonymity and confidentiality
- Sent to 764 diabetes educators with 233 return (30% return rate)
 - 225 recorded
- Survey open one month—three week reminder email

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Descriptive Analysis of Demographic Variables (n = 225)

| Variable | N | % |
|--------------------------------|-----|------|
| Discipline / Profession | | |
| RN | 110 | 48.9 |
| Dietician | 74 | 32.9 |
| Pharmacist | 29 | 12.9 |
| Other | 12 | 5.3 |
| Work Setting | | |
| Outpatient Hospital | 90 | 40.0 |
| Physician's Office | 39 | 17.3 |
| Pharmacy | 21 | 9.3 |
| Clinic | 32 | 14.2 |
| Other | 43 | 19.1 |

Descriptive Analysis of Demographic Variables (n = 225)

| Variable | N | % |
|--|-----|------|
| Age | | |
| 25 - 50 years | 109 | 48.7 |
| 51 - 75 years | 115 | 51.1 |
| Gender | | |
| Male | 15 | 6.7 |
| Female | 210 | 93.3 |
| Years Worked as a Diabetes Educator | | |
| 0-20 years | 173 | 76.9 |
| Over 20 years | 48 | 21.3 |

Findings RQ 1

Pearson's Correlation Analysis Examining the Relationship between CS-PAM Scores with Clinical Self-Management Scores (n = 225)

- Higher CS-PAM scores are positively associated with higher Clinician Self-Management scores at a statistically significant level, $r(223) = .27$, $p < .001$

| Variable | 1 | 2 r (p) |
|------------------------------------|----|-------------|
| 1. CS-PAM Score | -- | .27 (<.001) |
| 2. Clinician Self-Management Score | -- | -- |

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Findings RQ 2

1. Mean CS-PAM score **77.7** (range 56.1 to 100.0) *SD* 13.11
2. Support of specific patient domains (see slides 19-23).
3. No statistically significant differences between CS-PAM scores and independent variables (one-way ANOVA and independent sample t-test)

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Bivariate Analysis of CS-PAM Scores with Diabetes Educator Characteristics (n = 225)

| Variable | n | CS-PAM: M (SD) | t/F(df) | p |
|-----------------------|-----|----------------|---------------|-----|
| Discipline/Profession | | | | |
| RN | 110 | 79.6 (13.74) | 1.92 (3, 221) | .13 |
| Dietitian | 74 | 75.1 (12.20) | | |
| Pharmacist | 29 | 76.9 (11.65) | | |
| Other | 12 | 80.0 (14.34) | | |
| Gender | | | | |
| Female | 210 | 77.7 (13.17) | -.41 (223) | .68 |
| Male | 15 | 79.1 (12.57) | | |
| Age | | | | |
| 25-50 years | 109 | 76.8 (13.21) | -1.06 (222) | .29 |
| 51-75 years | 115 | 78.6 (12.90) | | |
| Years Worked | | | | |
| 0-20 years | 173 | 77.3 (13.47) | -.67 (219) | .50 |
| 21-35 years | 48 | 78.7 (11.79) | | |
| Work Setting | | | | |
| Out-patient | 90 | 77.31 | .172 (4, 220) | .95 |
| Physician office | 39 | 76.9 | | |
| Pharmacy | 21 | 78.8 | | |
| Clinics | 30 | 78.9 | | |
| Other | 45 | 78.3 | | |

Diabetes Educators' Beliefs About the Importance of Patient Self-management Competencies (n = 225)

| CS-PAM Domains | Survey Item (Variable) | Survey Item Scoring n (%) | | | | |
|--------------------------------------|---|---------------------------|--------------------|-----------|---------------------|---------|
| | | Not Important | Somewhat Important | Important | Extremely Important | N/A |
| Patient should follow medical advice | Are able to take actions that will help prevent or minimize symptoms associated with their health condition(s). | | | 28 (12.4) | 197 (87.6) | |
| | Are able to figure out solutions when new situations or problems arise with their health condition(s). | | 3 (1.3) | 44 (19.6) | 178 (79.1) | |
| | Bring a list of questions to their office visit. | 3 (1.3) | 27 (12) | 97 (43.1) | 97 (43.1) | 1 (0.4) |
| | Are able to make and maintain lifestyle changes needed to manage their chronic conditions. | | | 36 (16.0) | 189 (84.0) | |

Diabetes Educators' Beliefs About the Importance of Patient Self-management Competencies (n = 225)

| CS-PAM Domains | Survey Item (Variable) | Survey Item Scoring n (%) | | | | |
|--|--|---------------------------|--------------------|-----------|---------------------|-----|
| | | Not Important | Somewhat Important | Important | Extremely Important | N/A |
| Patient should make independent judgements | Can follow through on medical treatments you have told them they need to do at home. | | 3 (1.3) | 65 (28.9) | 153 (68.0) | |
| | Know what each of their prescribed medication(s) is for. | | 12 (5.3) | 66 (29.3) | 147 (65.3) | |
| | Are able to determine when they need to go to a medical professional for care and when they can handle the problem on their own. | | 1 (0.4) | 44 (19.6) | 180 (80.0) | |

Diabetes Educators' Beliefs About the Importance of Patient Self-management Competencies (n = 225)

| CS-PAM Domains | Survey Item (Variable) | Survey Item Scoring n (%) | | | | |
|--|---|---------------------------|--------------------|------------|---------------------|---------|
| | | Not Important | Somewhat Important | Important | Extremely Important | N/A |
| Patient should function as a member of the care team | Understand which of their behaviors make their chronic condition better and which ones make it worse. | | 1 (0.4) | 49 (21.8) | 175 (77.8) | |
| | Understand the different medical treatment options available for their chronic condition(s) | | 8 (3.6) | 109 (48.4) | 108 (48.0) | |
| | Tell you the concerns they have about their health even when you do not ask. | | 3 (1.3) | 71 (31.6) | 150 (66.7) | 1 (0.4) |
| | Want to be involved as a full partner with me in making decisions about their care. | | 6 (2.7) | 65 (28.9) | 150 (66.7) | 4 (1.8) |

Diabetes Educators' Beliefs About the Importance of Patient Self-management Competencies (n = 225)

| CS-PAM Domains | Survey Item (Variable) | Survey Item Scoring n (%) | | | | |
|--|--|---------------------------|--------------------|-----------|---------------------|---------|
| | | Not Important | Somewhat Important | Important | Extremely Important | N/A |
| Patient should independently seek info | Look for trustworthy sources of information about their health and health choices, such as on the web, news stories, or books. | | 22 (9.8) | 89 (39.6) | 113 (50.2) | 1 (0.4) |
| | Want to know what procedures or treatments they will receive and why before the treatments. | | 12 (5.3) | 78 (34.7) | 127 (56.4) | 8 (3.6) |

Findings RQ 3

- Mean Clinician Self-Management score 4.29 (range 2.44 to 5.00) SD .499
- No statistically significant differences between Clinician Self-Management scores and educators characteristics
- Pearson's correlation indicates that higher Clinician Self-Management scores are positively associated with increased age and years worked
 - Final multivariate model: multiple linear regression with no statistically significant differences found; Age was at a level approaching significance

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Bivariate Analysis of Clinician Self-Management Scores with Diabetes Educator Characteristics (n = 225)

| Variable | n | Clinician Self-Management: M (SD) | t/F(df) | p |
|-----------------------|-----|-----------------------------------|---------------|-----|
| Discipline/Profession | | | 1.74 (3, 221) | .16 |
| RN | 100 | 4.30 (.46) | | |
| Dietitian | 74 | 4.31 (.47) | | |
| Pharmacists | 29 | 4.11 (.70) | | |
| Other | 12 | 4.45 (.42) | | |
| Age | | | 1.63 (220) | .12 |
| 25-50 years | 109 | 4.25 (.52) | | |
| 51-75 years | 115 | 4.35 (.42) | | |
| Gender | | | 1.30 (223) | .20 |
| Female | 210 | 4.30 (.49) | | |
| Male | 15 | 4.13 (.51) | | |
| Years Worked | | | -.494 (219) | .62 |
| 0-20 years | 173 | 4.28 | | |
| 21-35 years | 48 | 4.31 | | |
| Work Setting | | | .375 (4, 220) | .83 |
| Out-patient hospital | 90 | 4.31 | | |
| Physician office | 39 | 4.25 | | |
| Pharmacy | 21 | 4.23 | | |
| Clinics | 30 | 4.24 | | |
| Other | 45 | 4.28 | | |

Pearson's Correlation Analysis of Clinician Self-Management Scores with Age and Years as a Diabetes Educator (n = 225)

| Variable | 1 | 2 r (p) | 3 r (p) |
|------------------------------------|------|------------|-------------|
| 1. Clinician Self-Management Score | 1.00 | .19 (.006) | .15 (.02) |
| 2. Age | -- | 1.00 | .57 (<.001) |
| 3. Years as a Diabetes Educator | -- | -- | 1.00 |

Multiple Linear Regression Examining Clinician Self-Management Scores and Age and Years as a Diabetes Educator (n = 225)

| Variable | B (SE) | β | p |
|-------------------------------------|-----------|---------|-----|
| Age | .01 (.00) | .15 | .07 |
| Years Worked as a Diabetes Educator | .00 (.00) | .07 | .41 |

Model = $F(2,224) = 4.34, p < .01, R^2 = .04, Adjusted R^2 = .03$

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Conclusions

- Diabetes educators who are more supportive of the patient role in the care process are more likely to engage with patients using effective self-management support strategies when working with patients in clinical encounters.
- Cumulatively, diabetes educators value patient involvement in their care (CS-PAM 77.7), but less so with a few competencies.
- High mean score of Clinician Self-Management (4.29), but a range of scores may be important as it may present a source of variation in patient outcomes.

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Limitations

- Limited to level two and three diabetes educators working in accredited programs (as defined by AADE¹¹); may not be generalizable
- Social desirability response bias
- Cross-sectional, convenience sample

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Implications

- With the increasing prevalence of diabetes (and pre-diabetes), the significance of the diabetes educators role is highlighted in diabetes care.
- Study indicates that diabetes educators who are more supportive of patients in self-managing are more likely to use effective support strategies to promote a sense of patient ownership in their own care and to promote behavioral change leading to improved health outcomes.

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Implications

- Diabetes educators reporting consistent use of effective self-management support strategies may possibly serve as role models/teachers for others (and decrease inefficiency of trial and error) per Clinician Self-management Scale.
- Clinical significance—no statistical significant differences among educators and personal characteristics.

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Recommendations

- Examine whether diabetes educators' beliefs and support strategies used are related to actual patient behavioral change (e.g., measuring with the PAM).
- Ore studies with the Clinician Self-management Scale
- A larger sample including *Other* diabetes educators should be replicated for generalizability.

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Disclosure to Participants

- Conflict of Interest (COI) and Financial Relationship Disclosures:
 - None
- Non-Endorsement of Products:
 - None
- Off-Label Use:
 - None

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THANK YOU & QUESTIONS

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