Development of Model Using Sociocognitive Variables to Explain Self-Care in Adult Women with Type 2 Diabetes

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Background

• Diabetes affects 8.3% of population, 25.8 million people, 90 – 95% have T2DM

• Women are affected disproportionately to men

• Disparate effect in ethnic minorities versus White Americans
Significance

• 95% of diabetes disease management resides with the individual in diabetes self-care

• Self care & health behaviors occur within the context of a social environment

• Need to determine the psychosocial processes that influence self-care behavior in women with T2DM
Purpose

• Determine if four sociocognitive variables explain self-care behavior in women with T2DM and answer:

1. Do personal diabetes beliefs including barriers to self-care, self-efficacy, outcome-efficacy, and social support explain diabetes self-care in women with T2DM?

2. Do findings from this study support the empirical and theoretical evidence that variables from the HBM, Social Cognitive Theory and Social Support explain self-care behavior?
Method

- **Design:** Cross-sectional predictive design

- **Non-probability Sampling:**
  - 198 women with T2DM
  - Mean age 51.52 years
  - Mean duration of diabetes 10.27 years
  - 79.7% Hispanic
  - 31.6% reported less than high school education
  - 64.4% reported income less than $14,999
  - 75% reported using a combination of multiple therapies
## Results - Bivariate Correlations

### Explanatory Variables

<table>
<thead>
<tr>
<th></th>
<th>Social support</th>
<th>Self efficacy</th>
<th>Outcome expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support</td>
<td></td>
<td>.325**</td>
<td></td>
</tr>
<tr>
<td>Outcome expectancy</td>
<td></td>
<td>.310**</td>
<td></td>
</tr>
<tr>
<td>Exercise barriers</td>
<td>-.161*</td>
<td>-.324**</td>
<td></td>
</tr>
<tr>
<td>Diet barriers</td>
<td>-.408**</td>
<td></td>
<td>-.228**</td>
</tr>
<tr>
<td>Medication barriers</td>
<td>-.352**</td>
<td>-.228**</td>
<td></td>
</tr>
<tr>
<td>Glucose barriers</td>
<td>-.289**</td>
<td>-.176 *</td>
<td></td>
</tr>
<tr>
<td>Total barriers</td>
<td>-.413**</td>
<td>-.148 *</td>
<td></td>
</tr>
</tbody>
</table>

*significant at the 0.05 level (2 tailed)
**significant at the 0.01 level (2-tailed)
## Results - Bivariate Correlations

### Explanatory & Demographic Variables

<table>
<thead>
<tr>
<th></th>
<th>Social support</th>
<th>Barriers</th>
<th>Dietary barriers</th>
<th>Outcome expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td>-.201**</td>
<td>-.229**</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>-.276**</td>
<td></td>
<td></td>
<td>.156*</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td>-.149 *</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*significant at the 0.05 level (2 tailed)

**significant at the 0.01 level (2-tailed)
Results
Model 1 Dietary Self-Care

Demographic Variables

Income
$\beta = 0.27$

Hispanic
$\beta = -0.19$

Explanatory Variables

Diabetes Self-Efficacy
$\beta = 0.29$

Dietary Barriers
$\beta = -0.29$

Diet Self-Care
$R^2 = 0.37^{***}$

Diabetes diet self-care model (n = 174) with standardized betas of the significant variables in the model (***(= p ≤ .001)
Results

Model 2 Medication Self-Care

Explanatory Variables

Barriers to Medication
\[ \beta = -0.18 \]

Medication Self-Care
\[ R^2 = .15^{***} \]

Social Support
\[ \beta = 0.17 \]

Medication self-care model (n = 171) with standardized betas for the significant variables in the model (***p = .007)
Results
Model 3 Blood Glucose Monitoring

**Medication Variables**

Oral and Injectable Medication

$\beta = 0.30$

**Explanatory Variables**

Self-Care Self-Efficacy

$\beta = 0.50$

Glucose Monitoring

$R^2 = 0.32^{***}$

Diabetes glucose monitoring self-care (n = 175) with standardized betas of the significant variables in the model (**p \leq .001**
Results

Model 4 Exercise Self-Care

Demographic Variables

- Income
  - $\beta = 0.15$

Explanatory Variables

- Social Support
  - $\beta = 0.29$

- Barriers to Exercise
  - $\beta = -0.34$

Exercise Self-Care
- $R^2 = 0.37***$

Diabetes exercise self-care model (n=178) with standardized betas for the significant variables in the equation (***p≤.001)
Results
Model 5 Diabetes Self-Care

Explanatory Variables

Self-efficacy
$\beta = 0.75$

Social Support
$\beta = 0.11$

Diabetes Self-Care
$R^2 = .74^{***}$

Diabetes self-care model (n=174) with standardized betas of the significant variables in the model ($***p \leq .001$)
Discussion

• Income positively influenced diet self-care while being Hispanic negatively influenced

• Contextual factors of barriers to self-care, self-efficacy and social support consistently explained diabetes self-care

• Outcome efficacy did not contribute to the explanation of self-care

• The model analyses were not affected by socially desirable responding
Conclusion

• This study found evidence to support all variables of interest (Barriers, Social Support for Self-Care, Self-Care Self-Efficacy, Outcome Efficacy) except one
  
  ➢ Outcome-efficacy did not contribute to explanation of diabetes self-care in this sample

• Findings from this study extend the empirical evidence that concepts of self-efficacy, social support and barriers explain self-care
Implications

• Further exploration with samples representative of other ethnic groups
• Explore what interventions may improve self-efficacy
• Explore ways to help women develop supportive relationships
• Develop women’s problem solving skills to minimize barriers to self-care
• Further examine the economic barriers to self-care, especially for minority women