Self-Efficacy and the Self-as-Doer:

New Perspectives in Diabetes Self-Care Behavior Management

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Presenter Disclosures

Amanda Brouwer

(1) The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

"No relationships to disclose"

Aims of the Study

- Introduce the self-as-doer in relation to diabetes self-care behaviors
- Examine the relationship of self-as-doer and the frequency of diabetes self-care behaviors in relation to other factors found to impact diabetes self-care behaviors

Diabetes

- Significant health concern
- Diabetes is caused by a lack of or insufficient ability to produce insulin
- Controlling glycemic levels are vital for health body functioning

American Diabetes Association, 2009

The World Health Organization, 2006

Diabetes

- **Self-care behaviors significantly contribute to proper glycemic control**
  - **Diet and Nutrition Management**
  - **Insulin Injections/Oral Medications**
  - **Glucose Testing**
  - **Exercise**

American Diabetes Association, 2005; Norris, Engelgau, & Narayan, 2001; Ramchandani, et al., 2000; Sousa, Zauszniewski, Musil, Lea, & Davis, 2005

Social Cognitive Theory

- **4 Psychosocial Determinates of Health Behavior:**
  - Self-efficacy
  - Outcome Expectancies
  - Barriers
  - Motivation/Goals

Bandura, 1998;
Williams, Anderson, & Winett, 2005;
Hertz, Unger, & Lustik; Iannotti, et al., 2006;
Senecal, Nouwen, & White, 2000

Influential Factors in Self-Care Behaviors

- **Self-efficacy**
  - ***Perceived ability*** **to carry out a task or behaviors**
- **Outcome Expectancies**
  - **Belief that carried out behaviors will lead to a desired outcome.**
- **Self-Care Agency**
  - ***The ability*** **to perform self-care actions**
- **Social Support**
  - **Family, Peers, Health Care Providers**

Sigurdardottir, 2005; Lundlow, Gein, 1995; Iannotti, et al., 2006; , et al. 2005; Bandura, 1977, 1982, 1986; Williams, Anderson, & Winett, 2005 Orem, 1991; Weijnam, 2005

Self-As-Doer

- **Identification with *doing* a behavior or action**
  - Cognitive link between self and action being performed
  - Active combination of the self and behavior
  - A source of motivation and persistence beyond goal commitment, reinforcement, self-concordance, habit, and expectancies

- **Rational for assessment with diabetes self-care behaviors:**
  - Diabetes is self-managed, requiring many self-generated care behaviors
  - Diabetes requires a dynamic agent, an identification
  - Self-care behaviors are not enjoyable or reinforcing

Houser-Marko & Sheldon, 2006

Hypotheses

1. **Self-efficacy, outcome expectancies, social support, self-care agency, and self-as-doer will contribute significantly to the frequency of self-care behaviors.**

2. **Self-as-doer will account for a significant proportion of the variance in the frequency of self-care behaviors above and beyond all other self-related factors (self-efficacy and self-care agency).**

3. **Greater frequency of self-care behaviors will be associated with better glycemic control.**

Methods

- **Participants**
  - **97 Diabetics**
    - 26 males, 71 females
    - Age Range: 18 - 86 (*M* = 32.24, *SD* = *16.83)*
  - **Type of Diabetes:**
    - Type I: 85
    - Type II: 10
    - Other: 2
  - **Amount of time with diabetes:**
    - 6 months to 50 years.
- **Procedure**
  - **E-mailed Surveys**
    - Insulin Pump Support E-mail
    - www.diabetesmonitor.com
    - Personal Networking
  - **Mailed Surveys**
    - Social Support Group and Diabetic Clients

Methods

Materials

- **Summary of Diabetes Self-Care Activities**
  - Toobert, & Glasgow, 1994
    - **Summation of standardized frequencies for exercise, diet, medication and blood glucose monitoring self-care behaviors**
- **Multidimensional Diabetes Questionnaire**
  - Talbot, et al., 1997
    - Self-Efficacy
    - Outcomes Expectancies
    - Social Support
      - General, Positive Reinforcing Behaviors, Misguided Behaviors
- **Appraisal of Self-Care Agency Scale**
  - Evers, 1986
- **Self-As-Doer**
  - Houser-Marko and Sheldon, 2006
- **Glycemic Control**
  - Self-report HbA1c

Self-As-Doer Measure and Examples

For the survey below I would like you to think about 6 diabetes care related goals for the next 2-3 years. Please write them on the first line/or in the space after each number (1, 2, 3, 4). Leave the second line/space (1b, 2b, etc.) blank until further instructions.

1.	Try to resist sweets	1b.	Sweet Resister
2.	Exercise on a daily schedule	2b.	Daily Exerciser
3.	Get and A1c under 7	3b.	Good A1c Getter
4.	To lose the 10 pounds to better my diabetes	4b.	Weight Loser
5.	Resist Chocolate 6 days a week	5b.	Chocolate Resister
6.	Embrace the support I receive from outside sources	6b.	Good Support Embracrer

Further Instructions:

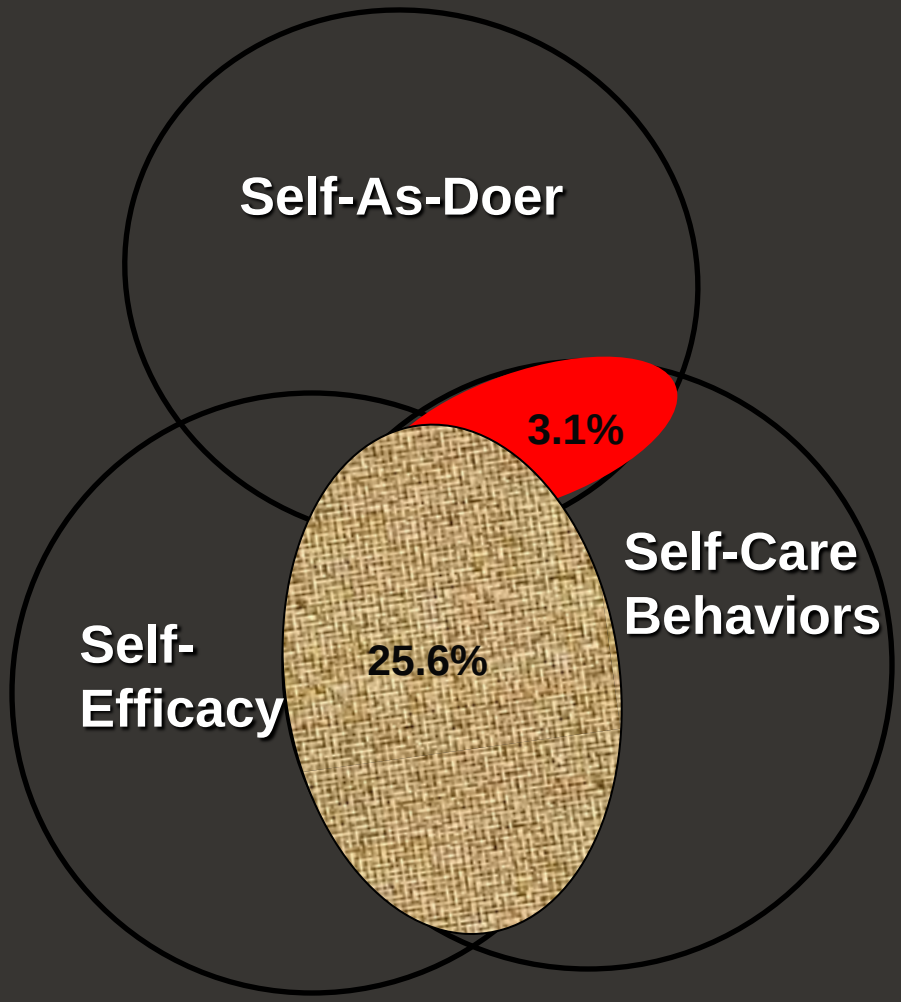
Every personal goal contains both a *verb* and an *object*.
For example, for the goal "to get an A_{1c} level of 7.3" the verb is *get* and the object is *an A_{1c} of 7.3*.

I would like you to think about the verb and object in each of the diabetes care goals you have and create a *special phrase* using the "er" suffix. Place this in the second blank above (1b, 2b, 3b, etc.).
This phrase will refer to a *person who does the goal*.
For example, the goal "to get an A_{1c} of 7.3" might be rephrased "good A_{1c} getter".

Results : Hypothesis One/Two

- **Stepwise Multiple Regression**
  - **Self-Efficacy**
    - Accounted for 25.6% of the unique variance
    - $t(71) = 6.26$, $p < .001$
  - **Self-As-Doer**
    - Accounted for an additional 3.1%
    - $\Delta R^2 = .031$, $\Delta F(73) = 4.71$, $p = .033$
    - $t(70) = 2.17$, $p = .033$
  - **Total Variance Accounted for: 52.4%**
  - **All other predictors were factored out**

Relationship Among Self-Efficacy, Self-As-Doer and Self-Care Behaviors



Results: Hypothesis One/Two

- **Hypothesis One**: Self-efficacy, outcome expectancies, social support, self-care agency, and self-as-doer will contribute significantly to the frequency of self-care behaviors.

PARTIALLY SUPPORTED

- **Hypothesis Two**: Self-as-doer will account for a significant proportion of the variance in the frequency of self-care behaviors above and beyond all other self-related factors (self-efficacy and self-care agency).

PARTIALLY SUPPORTED

Results: Hypothesis Three

- **Greater frequency of self-care behaviors will be associated with greater glycemic control.**

SUPPORTED

- $t(88) = 2.17$, $p = .03$, $\eta^2 = .32$.

- **Adequate Glycemic Group:**
  - * $M = .16$, $SD = .53$
- **Inadequate Glycemic Group:**
  - * $M = -.10$, $SD = .55$

*Note: Self-care behaviors are standardized

General Discussion

- **Self-Efficacy and Self-As-Doer:**
  - Significant predictors of the frequency of self-care behaviors in persons with diabetes
  - Suggest that developing a doer identity consistent with health care goals is beneficial for motivating self-care behaviors
- **Other Constructs Factored Out:**
  - Factors did significantly correlate with self-care behaviors
  - Self-efficacy and self-as-doer were stronger predictors in this model

Discussion

- **Implications for Health Care**
  - Increasing self-efficacy ***and*** self-as-doer more likely to increase self-care behaviors
  - Implement programs which promote ability and identification as doer of behaviors.
- **For all whom wish to promote and maintain good health**
  - Self-as-doer may go beyond just diabetes self-care behaviors to be relevant for other health behaviors

Discussion

- **Limitations**
  - **Participants**
    - Homogenous
  - **Self-Report Measure**
  - **Ceiling Effects**
    - Outcome Expectancies
  - **Generalizability**
    - More Type I than Type II
- **Future Research**
  - **Self-as-doer**
    - Re-test these effects
      - Larger Sample
      - More diverse population
    - How to increase identification with a behavior
    - How to implement self-as-doer into health care
    - Self-as-Doer with other self-care behaviors, not specific to diabetes

Participant Descriptives

	Type of Diabetes			
	Type I	Type II	Other	Total
Number of Participants	85	10	2	97
Months of Diagnosis , *M (SD)*	212.44 (136.41)	80 (89.1)	171.5 (137.89)	197.94 (137.38)
Medication Type:				
Insulin	67.1%	0%	100%	60.8%
Insulin plus other medication	7.1%	10%	0%	7.2%
Injections	23.5%	10%	50%	22.7%
Oral Medication	0%	90%	50%	10.3%
Insulin Pump	71.8%	10%	50%	63.9%
No Medication	0%	0%	0%	0%

Note. Percentages may not add up to 100% because participants were asked to check all that applied.

Scale Descriptives

Scales	*M*	*SD*	Range	Min	Max	α
Self-Care Behaviors	.000	.58	N/A	-1.87	1.02	.80
Self-As-Doer	3.14	.87	0-5	1	5	.74
Self-Efficacy (MDQ)	484.39	145.56	0-700	4	700	.88
Outcome Expectancies (MDQ)	557.70	49.58	0-600	320	600	.70
SS – General (MDQ	17.94	5.08	0 – 24	4	24	.75
SS – Positive Reinforcing (MDQ)	15.75	11.12	0-48	0	44	.83
SS – Misguided (MDQ)	6.44	5.75	0-24	0	23	.76
Self-Care Agency	91.61	9.98	0-120	59	115	.53

Stepwise Regression

		Total Self-Care Behaviors		
		SE	**β**	**sp^2**
Step1				
	Self-Efficacy	**.00**	**.59**	**.26**
Step 2				
	Self-As-Doer	**.14**	**.21**	**.03**

Note. Step 1 $\Delta R^2 = .51^{***}$, Step 2 $\Delta R^2 = .03^{*}$
$p <$ .05. $^{**}p < .01$; $^{***}p <$. 001.

Predictor Correlations with Self-Care Behaviors

Variables	1.	2.	3	4.	5.	6	7.
1. Self-Care Behaviors	1						
2. Self-Efficacy	.70***						
3. Self-As-Doer	.52***	.49***					
4. Self-Care Agency	.60***	.72***	.47***				
5. Outcome Expectancies	.25*	.33**	.16	.27**			
6. Social Support – General	.27**	.38***	.20*	.40***	.23*		
7. Social Support – Positive Reinforcing Behaviors	.16	.24*	.29**	.30**	.08	.49***	
8. Social Support – Misguided Behaviors	-.80	-.08	.05	.09	.002	.25*	.50***

* p < or = to .05, ** p < or = .01, *** p < or = to .001

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