Role of Emotion and Reason in Medication Adherence of Older Women

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Medication Adherence

- Medication adherence: problematic for older adults
  - Impaired vision
  - Cognitive impairment
  - Co-morbidities
- High risk for adverse events
  - Treatment failure
  - Hospitalization
  - Morbidity and mortality

(van Eijken, Tsang, Wensing, de Smet, & Grol, 2003; Schlenk, Burke, & Rand, 2001; Clemput, 2002)

Medication Adherence

- Definition:
  - "taking the correct amounts on the correct dosing schedule in accordance with any special instructions" (McDonald-Miszczak et al., 2004)
- Intentional vs. Unwitting (Schlenk, 2001)

Medication Adherence

- Numerous determinants
  - Individual, interpersonal, environmental

  (Ockene, 2001).
- Role of emotion is understudied

Definitions
(Buck 1988)

- Emotion: Syncretic cognition – integration of sensory (e.g., olfactory, tactile) information that leads to (nonverbal) knowledge of feelings and desires

Definitions
(Buck 1988)

- Reason: Analytic knowledge - attaching sensory information to symbols (i.e., language), and organizing these into a logical sequence

Emotion and Medication Adherence

- Fear of medication or its side effects, satisfaction with medications, (e.g., Unson et al., 2001, 2003, 2005; Givens et al, 2006, Hall et al, 2007, Brown et al, 2006, Young and Oppenheimer, 2006)
- Depression (Wang et al., 2002)
- Anger, hostility or trust (with healthcare providers) (Christensen, et al.,1997; Lee et al., 1992, Unson et al, 2003)
- Confidence and being in-control (McDonald-Miszczak et al., 2004)
- Curiosity about medications (Unson, 2003)
- Loyalty and gratitude (Orr et al., 2007)

Research Questions

1. Are emotions associated with medication adherence?
2. Which emotions are associated with medication adherence?
3. What beliefs and demographic factors are associated with emotions?

Sample

- Convenience sample of 92 older women
- Recruited from three senior centers and two senior public and private housing complexes
- Method: Face-to-face interviews by trained interviewers
- IRB approved questionnaire with close-ended questions

Dependent Variables: Adherence to Most Important Medication

- "How frequently do you take your medication exactly according to your doctor's instructions?"
- 7- point Likert scale in which 1 indicated "rarely' and 7 "always."

Mean adherence rate: 6.7, SD = .9

Independent Variables: CASC Scale

Negative Emotions

Isolated, Resentful, Hatred, Insulted, Hostile, Humiliated, Disgusted, Ashamed, Detached, Helpless, Lonely, Sad, Angry, Nervous, Selfish, Suspicious, Vulnerable, Afraid, Curious, Weak, Inquisitive, Guilty, Embarrassed [7-point Likert scale (Not at All to Very Much)].

Eigen value = 14.1, 37% of variance; Cronbach alpha = .95

Mean = 1.4 (SD = .8)

Independent Variables: CASC Scale

Positive Emotions

Proud, Secure, Confident, Trusting, Happy, Loyal, Energetic, Cared for, Faithful, Loving/loved, Powerful, Vigorous, Intimate, Satisfied

Eigen value = 6.3, 17% of variance; Cronbach alpha = .90

Mean = 4.6, SD = 1.4

7-point Likert scale (Not at All to Very Much).

Independent Variables: Cognitive Scales

- In-depth knowledge of medication (e.g., I have considered the benefits and side effects of my medication.) – Cronbach alpha = .83
  - Mean = 5.8 (SD = 1.3)
- Affordability (e.g., My medications are affordable.) – Cronbach alpha = .91
  - Mean = 5.5 (SD = 2.1)

1 = not agree at all, 7 = strongly agree
(McDonald-Miszczak et al., 2004)

Independent Variables: Cognitive Scales

- Medication regimen difficulties (e.g., My medication schedule should be simplified.) – Cronbach alpha = .67
  - Mean = 1.7 (SD = 1.2)
- Ease of remembering medication schedule (I am good at remembering the amount of medication I need to take)
  - Mean = 6.6 (SD = 1.1)

  1 = not agree at all, 7 = strongly agree

Results: Demographic Characteristics

- Mean age: 74.6 (SD = 8.05) years
- Birthplace: 93.4% born in the United States
- Ethnicity: white (47.8%), African-American (44.9%)

Results: Socio-economic & Health Status

- Mean years of education: 12.2 (SD = 3.1)
- Has health private health insurance: 69.6%
- Own home: 37.4%
- Own car: 65.2%
- Incomes other than social security: 55.4%
- Self-rated health: "somewhat good" to "good" physical health (M = 5.3, SD = 1.5) and mental health (M = 5.9, SD = 1.3).

Results: Prescribed Medications

- Mean number of medications: 5.2 (SD = 2.9)
- Most important medications: blood pressure (45.7%), diabetes (15.2%), heart conditions (10.9%), high cholesterol (8.7%)
  - Mean duration: 6.8 years (SD =8.1)
  - Mean importance rating: 6.7 (extremely important) (SD = .94)

Correlations

	1	2	3	4	5	6
1 Adherence rate						
2 Negative emotions	-.04					
3 Positive emotions	.33**	.03				
4 Knowledge of meds	0	.02	.22*			
5 Affordable	-.15	0	.06	-.05		
6 Simplify med schedule	-.02	.24*	-.07	.25*	.07	
7 Easy to remember	.42**	0	.33**	.02	.10	-.12

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Multiple Regression
DV = Medication Adherence

	Beta	t	Sig.
(Constant)		9.198	.001
Negative emotions	-.078	-.796	.43
Positive emotions	.233	2.299	.02
Knowledge of medications	-.012	-.118	.91
Affordable	-.201	-2.132	.04
Simplify medication schedule	.009	.089	.93
Med schedule is easy to remember	.391	3.916	.001
Years of education	-.174	-1.647	.10

Adjusted R^2 = .24, $F(7,81) = 4.87$, $p < .001$

Conclusions

- Adherence rates are associated with:
  - Positive emotions
  - Affordability
  - Ease of remembering medication schedule
- Positive emotions are associated with:
  - Knowledge of medication
  - Ease of remembering medication schedule

Conclusions

- Negative emotions associated with need to simplify medication schedule
- Emotions can indeed affect medication adherence decisions