



# The Relationship between Depression & Dementia in a Geriatric Psychiatry Population

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## Predicting the Severity of Dementia using Standardized Beta Coefficients

### OBJECTIVES:

- To investigate the relationship between depression and dementia in a geriatric psychiatry sample
- To identify the best predictors of dementia

**SETTING:** Geriatric psychiatry unit in a tertiary care regional mental health facility.

**PARTICIPANTS:** 237 (111 males and 126 females) geriatric psychiatry inpatients ranging in age from 61 to 93 (mean = 74).  
 • Number of medical conditions ranged from 0-8 (mean = 2.08).  
 • 46.8% had a minimum of a secondary school diploma

### MEASURES: Cambridge Cognitive Examination

[CAMCOG] (Martin, Huppert, Mountjoy, & Tym, 1988) which is a multidimensional measure of cognitive functioning.

**CAMCOG Subscales:** Orientation, Language (Comprehension & Expression) Memory, Attention/concentration, Praxis, Abstract thinking, Perception, and Executive functioning.

> 90 (normal/no dementia): 21 male; 23 female  
 80-89 (mild cognitive impairment): 34 male; 41 female  
 70-79 (mild dementia): 26 male; 23 female  
 50-69 (moderate dementia): 17 male; 29 female  
 < 50 (severe dementia): 12 male; 10 female

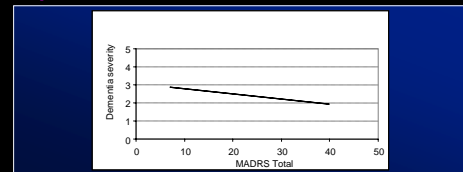
**Montgomery-Asberg Depression Rating Scale [MADRS]:** (Montgomery & Asberg, 1979) A ten item rating scale of the somatic, cognitive & affective symptoms of depression.

0-6 (asymptomatic): 47 male; 41 female  
 7-19 (mild depression): 42 male; 50 female  
 20-34 (moderate depression): 21 male; 33 female  
 > 35 (severe depression): 1 male; 2 female

### RESULTS:

- Correlation coefficient analysis:** supported a significant negative relationship between severity of dementia and level of depression ( $r = -.191, p < 0.05$ ) for those who were depressed.

### Depression as a function of Level of Dementia



	NORMAL	MILD COGNITIVE IMPAIRMENT	MILD DEMENTIA	MODERATE DEMENTIA	SEVERE DEMENTIA
Orientation	.189 **	.314 **	.497 **	.329 **	.195 **
Language	.417 **	.533 **	.631 **	.468 **	.415 **
Memory	.703 **	.959 **	.862 **	.545 **	.298 **
Attention	.218 **	.576 **	.670 **	.362 **	.171 **
Praxis	.335 **	.501 **	.577 **	.342 **	.201 **
Abstract	.319 **	.516 **	.605 **	.319 **	.200 **
Perception	.324 **	.447 **	.482 **	.377 **	.217 **
MADRS	x	x	x	x	x
MMSE	x	x	x	x	x

NOTE: \*\* = Standardized Beta Coefficients are significant at  $p < .001$   
 x = scale has no predictive utility in the prediction equation

- Bivariate regression analysis:** was performed to determine the best predictors of the severity of dementia.

- Normal (no Dementia): CAMCOG Memory subscale
- Mild cognitive Impairment: CAMCOG Memory subscale
- Mild Dementia: CAMCOG Memory subscale
- Moderate Dementia: CAMCOG Memory subscale
- Severe Dementia: CAMCOG Language subscale

### Correlation Matrix of CAMCOG, MADRS, & MMSE Scores

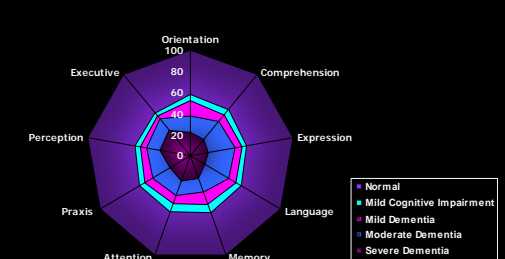
	Orientation	Language	Memory	Attention	Praxis	Abstract	Perception	CAMCOG	MADRS	MMSE
Orientation	-	.647 **	.738 **	.515 **	.566 **	.485 **	.465 **	.808 **	.087	.834 **
Language		-	.673 **	.657 **	.689 **	.528 **	.531 **	.880 **	.054	.812 **
Memory			-	.570 **	.582 **	.538 **	.488 **	.887 **	.118	.762 **
Attention				-	.542 **	.486 **	.382 **	.750 **	.089	.810 **
Praxis					-	.406 **	.532 **	.773 **	.038	.698 **
Abstract						-	.415 **	.676 **	.179 **	.600 **
Perception							-	.655 **	.028	.549 **
CAMCOG								-	.108	.922 **
MADRS									-	.076
MMSE										-

NOTE: Orientation = CAMCOG Orientation subscale; Language = CAMCOG Language subscale; Memory = CAMCOG Memory subscale; Attention = CAMCOG Attention subscale; Praxis = CAMCOG Praxis subscale; Abstract = CAMCOG Abstract subscale; Perception = CAMCOG Perception subscale; CAMCOG = CAMCOG Total score.

\*\* Significant at  $p < .01$

## Changes in Cognitive Functioning with Increasing Levels of Dementia

CAMCOG T Scores



### CONCLUSIONS:

- Individuals with mild to moderate dementia are at the greatest risk of depression
- Individuals with severe dementia report few symptoms of depression.
- The best predictor of dementia varies with the level of severity
- For mild cognitive impairment, mild dementia and moderate dementia, memory is the single best predictor of dementia.
- For severe dementia, language is the single best predictor of dementia
- Relative to the CAMCOG Subscales, the MMSE has limited utility for predicting the severity of dementia

### References

Martin, R., Huppert, F., Mountjoy, C. Q., & Tym, E. (1988). The Camdex. Cambridge university press: Cambridge, UK.  
 Montgomery, S. A. & Asberg, M. (1979). A new depression scale designed to be sensitive to change. British journal of Psychiatry, 134, 382-389.

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