# Everyday Problem Solving in Low SES Nondemented Elderly

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Everyday cognitive competence is integral to one's ability to function independently and effectively in our society. Loss of everyday competence is the cardinal diagnostic feature of dementia (American Psychiatric Association, 1987). Most low functioning elderly, and many patients in the early phases of AD, are community-dwelling, sometimes living alone, and attempting to carry out many of the activities required in daily living. Indeed, it is the person's inability to perform cognitively demanding everyday tasks, such as managing financial affairs and adhering to medication schedules that frequently motivates spouses and adult children to seek assessment and diagnosis.

Assessment of everyday competence is particularly important because loss of complex cognitive skills begins to occur early both in the onset of dementia and in normative age-related decline. Mental impairment typically appears earlier in the progression of AD than severe physical or motor debilitation. Earlier decline is often noted in performance of the cognitively higher-order instrumental activities of daily living (IADLs) prior to decline in self-maintenance tasks (ADLs; Ashford, Hus, Becker, Kuman, & Bekian, 1986).

Although of importance in the study of both normal and impaired elderly, everyday competence is rarely assessed directly. It is usually inferred from the elderly's self-reports or caregiver ratings. While self-ratings are valuable, there are several limitations. Normal elderly tend to overestimate their level of functional competence, when compared with clinician's ratings of competence (Fillenbaum, 1978; Ford et al., 1988). Impaired patients diagnosed as having an organic disorder have been found more likely to overestimate competence, whereas those with a functional disorder were more likely to underestimate performance (Kuriansky et al, 1976). There is need, then for objective measures of everyday functioning to complement existing self report data.

There has been surprisingly little research done on the relationship between subjects' cognitive performance, as assessed by traditional clinical and neuropsychological measures, and their everyday competence. A few epidemiological surveys have reported significant relationships between self-report of everyday competence and a brief cognitive assessment instrument (Fillenbaum, 1985). In the Duke epidemiological studies, Fillenbaum and associates (Galanos, et al., 1991) have reported that three to six times as many people with cognitive impairment reported problems with instrumental activities than did those with unimpaired cognitive functioning.

The present study has two major aims. The first aim is to examine the performance of low educated nondemented elderly on a recently developed measure of everyday problem solving. The Everyday Problems for Cognitive Challenged Elderly (EPCCE) provides an objective measure of everyday problem solving. The second aim is to examine the relationship between performance on this measure of everyday cognition and on a battery of clinical and neuropsychological measures frequently used in screening for dementia.

Accurate cognitive assessment of low educated, low SES elderly is a particular concern. Low SES elderly are at greater risk with regard to morbidity, institutionalization, and mortality. Socioeconomic status, specifically low educational levels has also been identified as a major risk factor in dementia. While low SES elderly are at greater risk, diagnosis of cognitive impairment very early in disease progression is particularly difficult when studying low functioning elderly. The clinician is faced with the challenge of differentiating between low levels (and decline) in cognitive functioning due to pathology (e.g., Alzheimer's disease) versus socioeconomic factors (e.g., low education, low income).

The findings to be reported represent early pilot data from a program of research being conducted in collaboration with the Monongahela Valley Independent Elders Survey (MoVIES), an ongoing prospective community study of cognitive impairment and dementia begun in 1987 to establish a population-based dementia registry. The MoVIES sample is

ideally suited for the present study in that it represents a rural blue-collar low SES and low education group of elderly permitting detailed examination of the role of SES and education on the elderly's ability to deal with cognitively complex tasks of daily living.

## Method

### Subjects

The sample included 127 older adults, 83 (65%) female and 44 (35%) males. The mean age was 77 years (sd = 4.19; Range 70-90 years). Approximately one-third of the subjects (N = 45; 35%) were classified as young-old (< 75 years), approximately 61% (N = 77) as old-old (75-84), and 4% (N = 5) as very old. Approximately 17% of subjects completed between 6th and 9th grades; 17% had some high school; 37% graduated from high school; 13% attended technical school; 7% had some college; 6% had college degrees; and 3% had graduate/professional training. The correlation between age and educational level is not significant ($r$ = .09)

The everyday problem solving measure was first introduced during the third follow-up wave (1994-1995) of the MoVIES study. The findings reported in this paper represent early pilot data collected during a four month interval in 1994, and thus represent only a small subset of participants expected to participate in the third follow-up wave. Since introduction of the everyday measure into the MoVIES, 139 MoVIES subjects have been assessed with the EPCCE. Of the 139 subjects administered the everyday measure, data on 12 subjects were eliminated from the current analyses since these subjects had been rated as .5 or higher on the CDR, a dementia rating scale. Only subjects with a CDR of 0 were included in this study.

### Procedure

**MoVIES project**. The parent population for the MoVIES was assembled in 1987 to be an age-stratified random sample of non-institutionalized older adults from the rural mid-Monongahela Valley region of southwestern Pennsylvania. Eligibility criteria were that subjects be 65+ years, living in the community, fluent in English and having at least a 6th grade education. Since 1989, the survivors of the MoVIES cohort have been followed with repeated cognitive screening at 18-24 month intervals with the primary goals of identifying incident cases of dementia and risk factors for dementia and to examine normal and abnormal patterns of cognitive change over time. At each wave, a three-stage assessment procedure (in-home screening, two-stage clinical evaluations) is carried out.

In order to preserve the integrity of the MoVIES protocol across waves, subjects in the present study were first administered the MoVIES battery in their homes. This included a cognitive battery of clinical and neuropsychological screening measures, and a standardized semi-structured interview of demographic/descriptive information including disease conditions, 24-hour dietary intake, prescription medications, and use of formal and informal health and social services. At the end of the screening interview, subjects are asked to participate in a new phase of the study which involves the everyday problems test. Subjects are paid $10 for participation in the MoVIES interview and an additional $10 for taking the everyday problems test.

### Measures

**Clinical and neuropsychological measures**. MoVIES participants are administered at each study wave a clinical and neuropsychological test battery (Ganguli, Ratcliff, Huff, Belle, Kancel, Fischer, Seaberg, & Kuller, 1991) that includes measures from the CERAD protocol (Morris,Heyman, Mohs, et al, 1989).

*Mini-Mental State Examination (MMSE)* (Folstein, Folstein, & McHugh, 1975). MMSE is a widely used brief global cognitive screening battery which assesses orientation, immediate

and delayed recall, concentration, language, and praxis. In the present study, the Serial 7's test was used to assess attention, with a maximum score of five points. The maximum MMSE score is 30.

*Temporal Orientation.* (Benton, Hamsher, Varney et al, 1982). Data necessary to calculate a score on this test was acquired by adding a question about the time of day to the temporal orientation questions already in the MMSE. The error score is calculated by subtracting points for each month, year, date, day, and half hour by which the subject's guess is incorrect. A perfect score is 0. This test is not part of the CERAD battery.

*Word List Recall* (Morris,Heyman, Mohs, et al, 1989). The subject is required to read a list of ten words presented at the rate of one every 2 sec, and then to recall them. There are three trials of word list learning with immediate recall, with the list presented in a different order each time. The maximum score for each trial is 10 with a score of 30 for the total of the three trials. There is then a delayed recall trial of the word list with a maximum score of 10, conducted after the praxis tests are performed. In the present study, the score from Trial 3 immediate recall and the delayed recall score were used. A Savings score (Trial 3 score minus Delayed Recall score) was computed to examine the difference between immediate and delayed recall performance.

*Praxis.* The CERAD tests of simple construction requires the subject to copy four increasingly complex geometric forms (circle, intersecting rectangles, diamond, and cube) with up to 2 min for each drawing. These items are from the Alzheimer's Disease Assessment Scale (Rosen, Mohs, Davis, 1984). The total score is 11.

*Clock Drawing* (Kaplan, 1990). A test involving executive functions, planning, and constructional ability. The subject is required to draw the face of a clock and set the hands at 10 minutes after 11. The total score is 8. This test is not in the CERAD battery.

*Modified Boston Naming Test: CERAD Version.* Subjects are asked to name fifteen line drawings of objects whose names are of high, medium, and low frequency in the English language, allowing 10 sec for each picture. This is a CERAD modification (Morris, Heyman, & Mohs, 1989) of the original test (Kaplan, Goodglass, & Weintraub, 1978). The maximum score is 15.

*Verbal Fluency.* This test measures verbal production, access to semantic memory, and language. The subject is asked to list as many items as possible in a given category (words beginning with the letters P and S, fruits, animals) in 60 sec each (Borkowski, Benton, Spreen, 1967; Benton & Hamsher, 1976). The CERAD version includes only fluency for names of animals. The total score for each category is equal to the number of different words listed by the subject.

*Story Recall: Immediate and Delayed.* This test is similar to the Logical Memory test of of the Wechsler memory Scale (Wechsler & Stone, 1972). A simple story is read to the subject at the beginning of the cognitive testing period. The subject is required to recall as much of it as possible immediately and again at the end of all the other tests, a delay of no less than 20 min. This particular story recall test was devised for and used at the University of Pittsburgh AD research program and reported by Becker et al (1987). There are 18 scorable bits of information; the subject's total score reflects the number of bits he/she recalled. Bits recalled accurately receive one point; those recalled poorly but retaining the gist are scored half a point, and those omitted or recalled in error are scored 0. This test is not part of the CERAD battery.

*Trailmaking Tests A and B.* (Reitan, 1955; Reitan & Tarshes, 1959). An allied procedure of the Halstead-Reitan battery, Trail A entails speed, visual scanning, and sequencing. Trail B also requires the ability to maintain and integrate two series simultaneously while alternating between them. It requires the subject to connect 25 numbered and alphabetized circles in order. Trail A has circles numbered 1-25; Trial B has circles numbered 1-13 or lettered A-L which must be connected alternating between numbers and letters. The score is the time to completion measured in seconds; a better score is reflected in a shorter time. The maximum time allowed is 5 min (300 sec). These tests are not part of the CERAD battery.

*Savings scores.* In addition to the clinical/neuropsychological measures, two savings scores were created for this study. The Story Savings scores represents the difference between Story Recall Immediate and Story Recall Delayed. The Word List Savings score represents the difference between the Trial 3 Score on the Word List and the Word List Delayed Recall.

**Everyday Problems for Cognitively Challenged Elderly Test (EPCCE)**

The present study involves the use of a new measure of everyday problem solving, developed for use with low SES nondemented elderly and with early stage Alzheimer's patients. The subject is shown printed material encountered in everyday activities (e.g., prescription drug label, emergency phone numbers) and asked to solve a problem associated with the stimuli (e.g., "How many pills should Mrs. Jones take in one day?"). Two questions are asked for each of 16 printed materials, for a total of 32 items. Stimulus materials and associated questions are presented in Table 1.

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Table 1 about here

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A two-month test-retest reliability for low SES nondemented elderly was $r = .93$. The internal consistency as measured by Cronbach's alpha was .87. In previous measurement development work with a group of 20 community dwelling AD patients, the EPCCE correlated significantly with clinician ratings of Orientation ($r = -.63$, $p < .001$) and Functioning and Self Care ($r = -.49$, $p < .01$) on the Brief Cognitive Rating Scale (Reisberg, 1983). Clinician ratings on the Global Deterioration Scale were also significantly related to the EPCCE ($r = .61$, $p < .02$).

**Results**

Table 2 shows the mean, median, range and standard deviation for the EPCCE and for each measure in the clinical/neuropsychological battery, used in this study. Of particular interest are descriptive information on the EPCCE. The mean score for the EPCCE was 22, indicating that on average 69% of the items were answered correctly. As expected younger subjects (< 75 years) were performing ($\bar{X} = 25.1$; sd = 5.4 ) at a higher level than older subjects (≥ 75 years; $\bar{X} = 20.9$ ; sd = 6.7).

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Table 2 about here

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Table 3 presents the correlation matrix for the EPCCE, clinical/ neuropsychological battery, age, and education. Note that the EPCCE is significantly correlated with each of the clinical/neuropsychological scores. The only variable not significantly correlated was the Story Savings measure. The EPCCE was also significantly correlated with age and education.

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Table 3 about here

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To examine which of the clinical/neuropsychological measures exhibited significant unique variance associated with the EPPCE, a series of simultaneous multiple regression analyses were conducted. First, the association between the components of the MMSE and the EPPCE were examined. In the first analysis, eight components of the MMSE were entered: Orientation (time); Repeat three objects; Serial seven's; Recall three objects; Repeat phrase; Follow three-stage command; Read and obey command; Write spontaneous sentence; Copy two pentagons. Three components had no variance: Name watch and pencil; Orientation (place); and Name two objects (Watch, pencil). Table 4 presents the findings from the regression analysis. Five MMSE components were identified as significant predictors: Recalling three objects; Serial seven's; Orientation (time); Repeating a phrase; and Repeating three objects.

Approximately 33% ($R^2$ = .326) of the variance in the EPCCE was accounted for by these components of the MMSE. In a second regression analysis, the eight MMSE components plus age and education were entered. Education and age were both significant predictors. Three of the MMSE components remained significant predictors: Recalling three objects, Orientation (time); and Serial seven's. Approximately 39% ($R^2$ = .392) of the variance in the EPCCE was accounted for by age, education, and these MMSE components.

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Table 4 about here

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In a second series of regression analyses, the association between the clinical/neuropsychological battery and the EPCCE was examined. In the first analysis, the eight measures showing the highest correlations with the EPCCE and those that were hypothesized to be related to the EPCCE conceptually were entered: MMSE (including serial 7's); Boston Naming; Fluency (Animals/Fruits); Story Immediate Recall; Story Delayed Recall; Trails B; Word List Recall - Trial 3; and Word List Recall - Delayed. Table 5 presents the findings from the regression analysis. Significant predictors were: Trails B, Boston Naming, and the MMSE. Overall, the three measures accounted for approximately 63% ($R^2$ = .628) of the variance in the EPCCE. In a second analysis, the eight measures plus age and education were entered. Neither education nor age accounted for significant unique variance. The significant measure predictors were: Trails B; Boston Naming, and MMSE Approximately 63% ($R^2$ = .628) of the variance in the EPCCE was accounted for by the three cognitive measures and education.

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Table 5 about here

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**Discussion**

A major aim of this study was to examine the utilization of an objective measure of everyday cognitive functioning with a population of low SES nondemented elderly. On average, older subjects were answering approximately 70% of the items correctly; as expected, the young old were performing significantly better (78% correct) than the old-old (63% correct). The measure appears to have sufficient range to examine the pattern and rate of age-related decline in such a sample longitudinally.

Of particular interest was the relationship between the measure of everyday cognitive functioning and clinical and neuropsychological measures frequently used in batteries such as the CERAD in screening for dementia. The EPCCE was found to correlate significantly with all measures in the MoVIES cognitive battery. Given that there is considerable multicollinearity among the cognitive measures, regression analyses were conducted to examine measures in the cognitive battery that exhibited significant unique variance associated with the EPCCE. Furthermore, both the EPCCE and the cognitive measures were shown, as in previous research, to be significantly correlated with educational level and with age. Thus, it was important to examine the association between variables when taking into account the influence of education and age.

We first examined components of the Mini-Mental Status Exam that were associated with the EPCCE. Components representing delayed recall (Recall 3 words) and concentration (Serial 7's) were particularly salient predictors of EPCCE performance. To examine the influence of age and education on these associations, a second analysis was conducted. Education was the most salient predictor of the variance in the EPCCE; age was also

significant. The MMSE components representing delayed recall, orientation and concentration were significant.

Second, the association between the EPCCE and measures in the MoVIES battery was examined. Three cognitive measures accounted for approximately 60% of the variance on the EPCCE: Trails B, Boston Naming, and the MMSE. The Trail B requires the subject to hold in mind two sets of information and to select appropriate information from each set when needed. These cognitive demands are similar to those represented by the construct of working memory, which has been found to be one of the most salient dimensions of memory in cognitive aging. In contrast to the significant influence of educational level and age in regression analyses with the MMSE, education and age did not account for only an additional variance when entered with measures from the cognitive battery. Thus, these three cognitive measures are accounting for variance in the EPCCE that is not shared with the demographic variables of age or education.

Both series of regression analyses indicate that the everyday problems test is cognitively complex. Variance cannot be accounted for by any single cognitive process (e.g., memory, language). It is likely that part of the difficulty of many everyday tasks is due in part to the multiple abilities and skills required to perform the tasks. These multiple cognitive demands may explain why decline is often seen earliest in instrumental activities of daily living. Adults suffering from cognitive deficits or decline in several domains may be particularly disadvantaged in dealing with complex tasks of daily living since these activities often involve multiple cognitive demands.

Finally, it should be noted that the findings reported in this paper are from early pilot data collected with subjects in the MoVIES project. Interpretation of findings must be made with extreme caution at this early stage in the data collection process.

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## TABLE 1

## DESCRIPTION OF ITEMS

| ACTIVITY DOMAIN | STIMULUS | QUESTION/PROBLEM |
|---|---|---|
| Phone | Emergency Phone | If you lived in Spring Mill and if your neighbor fell and broke her hip, what number would you need to dial? |
| Medications | Laxative | To get the most benefit, for how many days should you use this product? |
| Finances | Health Enrollment Form | Where would you indicate that your Blue Cross plan pays for your medications? |
| Transportation | Driver's Manual | If you are continuing on the same road through an intersection, who should yield to you? |

**Table 2**

**Description of Cognitive Variables**

| Variable | Possible Range | Actual | Mean | SD |
|---|---|---|---|---|
| Everyday Problems Test (EPCCE) | 0 - 32 | 2 - 32 | 22.39 | 6.55 |
| Story Recall | 0 - 18 | 1.5 - 17 | 7.86 | 3.16 |
| Story Recall - Delay | 0 - 18 | 0 - 16.5 | 6.93 | 3.28 |
| Fluency - Letters | n/a | 11 - 52 | 24.30 | 8.34 |
| Fluency - Animals & Fruits | n/a | 11 - 47 | 27.58 | 7.47 |
| Boston Naming Test | 0 - 15 | 8 - 15 | 14.30 | 1.20 |
| MMSE | 0 - 30 | 19 - 30 | 26.71 | 2.34 |
| Orientation - Time | 0 - 5 | 2 - 5 | 4.76 | .52 |
| Orientation - Place | 0 - 5 | 5 - 5 | 5.00 | .00 |
| Repeat 3 Objects | 0 - 3 | 2 - 3 | 2.94 | .24 |
| Serial 7's | 0 - 5 | 0 - 5 | 3.78 | 1.33 |
| Recall 3 Objects | 0 - 3 | 0 - 3 | 1.94 | .94 |
| Name 2 Items | 0 - 2 | 2 - 2 | 2.00 | .00 |
| Repeat Phrase | 0 - 1 | 0 - 1 | .76 | .43 |
| Read & Obey Command | 0 - 1 | 0 - 1 | .98 | .12 |
| Follow 3-Step Command | 0 - 3 | 1 - 3 | 2.71 | .52 |
| Write a Sentence | 0 - 1 | 1 - 1 | 1.00 | .00 |
| Copy Drawing | 0 - 1 | 0 - 1 | .84 | .37 |
| Temporal Orientation | 0 - 113 | 0 - 61 | .91 | 5.59 |
| Word List - Trial 3 | 0 - 10 | 4 - 10 | 8.33 | 1.40 |
| Word List - Delayed Recall | 0 - 10 | 2 - 10 | 6.94 | 1.86 |
| Praxis | 0 - 12 | 7 - 12 | 9.98 | 1.21 |
| Clock | 0 - 8 | 5 - 8 | 7.24 | .82 |
| Trail A | 0 - 300 | 25-118 | 50.53 | 18.26 |
| Trail B | 0 - 300 | 50-300 | 143.32 | 72.74 |
| Word Savings | | -1 - 5 | 1.39 | 1.30 |
| Story Savings | | -3 - 9.5 | .93 | 1.62 |

Correlation Matrix

| ariable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| . Story | | | | | | | | | | | | | | | | |
| . Story - Delay | .87 | | | | | | | | | | | | | | | |
| . Fluency - Letters | .37 | .28 | | | | | | | | | | | | | | |
| . Fluency - Fruit/Animals | .40 | .35 | .55 | | | | | | | | | | | | | |
| . Boston Naming | .42 | .39 | .35 | .43 | | | | | | | | | | | | |
| . MMSE | .33 | .37 | .28 | .34 | .31 | | | | | | | | | | | |
| . Temporal | -.19 | -.21 | -.14 | -.23 | -.18 | -.30 | | | | | | | | | | |
| . Word List - Trial 3 | .48 | .39 | .32 | .45 | .20 | .20 | -.16 | | | | | | | | | |
| . Word List Recall Delay | .49 | .44 | .27 | .36 | .34 | .29 | -.20 | .72 | | | | | | | | |
| 0. Constructional Praxis | .14 | .11 | .31 | .22 | .11 | .30 | .04 | .17 | .19 | | | | | | | |
| 1. Clock | .27 | .21 | .28 | .36 | .40 | .19 | -.04 | .19 | .27 | .29 | | | | | | |
| 2. Trail Making - A | -.18 | -.22 | -.24 | -.34 | -.30 | -.34 | .15 | -.28 | -.33 | -.31 | -.12 | | | | | |
| 3. Trail Making - B | -.27 | -.30 | -.35 | -.44 | -.52 | -.56 | .22 | -.32 | -.37 | -.31 | -.35 | .60 | | | | |
| 4. Story Savings | .19 | -.31 | .17 | .08 | .03 | -.10 | .04 | .16 | .07 | .04 | .11 | .11 | .02 | | | |
| 5. Word List Savings | -.16 | -.21 | -.04 | -.03 | -.27 | -.20 | .11 | -.06 | -.65 | -.09 | -.18 | .17 | .19 | .07 | | |
| 6. Everyday Problems Test (EPCCE) | .50 | .50 | .43 | .52 | .60 | .57 | -.31 | .42 | .50 | .35 | .35 | -.53 | -.67 | -.04 | -.26 | |
| 7. Age | -.10 | -.12 | -.12 | -.23 | -.31 | -.26 | .00 | -.17 | -.23 | -.05 | -.16 | .33 | .45 | .05 | .15 | -.32 |
| 8. Education | .39 | .35 | .37 | .36 | .28 | .42 | -.05 | .20 | .20 | .33 | .29 | -.28 | -.35 | .06 | -.07 | .44 |

ote N = 127: r > .17 p < .05: r > .22 p < .01: r > .28 p < .001

**Table 4**

| Variable | β | t | p | Total $R^2$ |
|---|---|---|---|---|
| **MMSE Items[a]** | | | | |
| Recall 3 Objects | .29 | 3.74 | .001 *** | |
| Serial 7's | .25 | 3.26 | .001 *** | |
| Orientation (Time) | .19 | 2.32 | .02 * | |
| Repeat 3 Objects | .18 | 2.33 | .02 * | |
| Repeat Phrase | .17 | 2.23 | .03 * | |
| Copy 2 pentagons | .11 | 1.38 | .17 | |
| Read & Obey Command | .06 | .77 | .44 | |
| Follow 3-Step Command | -.02 | -.24 | .81 | .33 |
| **MMSE, Age, and Education[b]** | | | | |
| Education | .24 | 3.04 | .003 ** | |
| Recall 3 Objects | .21 | 2.76 | .01 ** | |
| Age | -.18 | -2.38 | .02 * | |
| Orientation (Time) | .18 | 2.27 | .02 * | |
| Serial 7's | .17 | 2.24 | .03 * | |
| Repeat Phrase | .13 | 1.73 | .09 | |
| Repeat 3 Objects | .12 | 1.67 | .10 | |
| Read & Obey Command | .07 | .95 | .34 | |
| Copy 2 Pentagons | .06 | .83 | .41 | |
| Follow 3-Step Command | -.02 | -.23 | .81 | .39 |

N = 127; [a]$F = 27.01$, $p < .001$

[b]$F = 21.82$, $p < .001$

**Table 5**

| Variable | β | t | p | Total $R^2$ |
|---|---|---|---|---|
| **CERAD[a]** | | | | |
| Trail B | -.28 | -3.68 | .001 *** | |
| Boston Naming | .23 | 3.26 | .001 *** | |
| MMSE | .20 | 2.92 | .01 ** | |
| Story Recall -Delayed | .15 | 1.26 | .21 | |
| Fluency -Animals/Fruits | .11 | 1.59 | .11 | |
| Word List - Delayed Recall | .11 | 1.26 | .21 | |
| Word List - Trial 3 | .07 | .75 | .45 | |
| Story Recall - Immediate | -.01 | -.08 | .93 | .63 |
| **CERAD, Age, and Education[b]** | | | | |
| Trail B | .28 | -3.43 | .001 *** | |
| Boston Naming | .23 | 3.25 | .01 ** | |
| MMSE | .18 | 2.53 | .01 ** | |
| Story Recall - Delayed | .15 | 1.32 | .19 | |
| Word List - Delayed Recall | .11 | 1.34 | .18 | |
| Fluency - Animals/Fruits | .10 | 1.37 | .17 | |
| Education | .09 | -1.41 | .16 | |
| Word List - Trial 3 | .07 | .78 | .44 | |
| Story Recall - Immediate | -.04 | -.32 | .74 | |
| Age | -.005 | -.09 | .92 | .63 |

[a] $F = 27.01$, $p < .0001$

[b] $F = 21.82$, $p < .0001$