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MOOD, COGNITION AND DRIVE IN FEMALE NURSING HOME RESIDENTS

By

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ABSTRACT

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By

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Depression and cognitive impairments are two of the most common psychological impairments of advanced age (Hagestad, 1987). The causes of such changes are still, in part, speculative. Both normal and pathological processes have been implicated, as have a variety of psychological and social factors (Weingartner & Silber, 1982; Wigdor, 1980; Ames, 1973; Henry, 1965). Traditionally, drive is posited as a necessary source of energy used in both the experience of depression and the exercise of cognitive faculties (Freud, 1924; Rorschach, 1942). This study examined the relationship of psychic drive, measured by Pine's Drive Rating System for the Thematic Apperception Test (Pine, 1960), and changes in cognition and mood. A number of hypotheses linking drive to depression and cognition were tested, as were hypotheses concerning the relationships between cognition and depression. Additionally, the Rorschach was examined as an indicator of mood, cognition and drive among elderly female subjects.

Subjects consisted of 100 women over the age of 65, living in nursing homes, and scoring above 14 on the Mini-Mental Status Exam (Folstein, Folstein & McHugh, 1975) and above a 6 scaled score on the Vocabulary Subtest of the Wechsler Adult Intelligence Scale - Revised. In addition, subjects were administered the Senile Dementia Alzheimer's Type Battery (Storandt et al, 1984), the Brief Symptom Inventory (Derogatis & Spencer, 1983), the Geriatric Depression Scale (Yesavage et al, 1983), the Hamilton Rating Scale for Depression (Hamilton, 1960), the Rorschach, scored with the Exner Comprehensive System

(Exner, 1991), and the TAT, scored with Pine's Drive Rating System (Pine, 1960). Data concerning demographic variables and current social activity were also collected.

Drive was not found to be significantly related to measures of cognition or depression. Nor was any Rorschach variable or demographic factor predictive of drive measures. Cognition and depression were found to be significantly and negatively related. Age, education, number of children and social contact were found to have significant effects on depression and cognition. Several Rorschach variables were found to indicate cognitive ability and level of depression among the elderly subjects in a direction not seen with younger adults.

DEDICATION:

TO MARY ANNE MAYNE

IN APPRECIATION FOR HER CONSTANT

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INTRODUCTION

Depression and cognitive impairments are two of the most commonly studied, and often the most feared, psychological phenomena in elderly subjects. Public perception of the aging process is increasingly one of years spent depressed and demented, with little hope for change (Hagestad, 1987). Recent articles in the lay literature by psychologists encourage this perception (Rubenstein, 1991). Although much is known about depression and cognitive changes in older adults (for a review see Birren & Sloane, 1980), the causes of such changes and whether or not they are natural by-products of the aging process is still unclear to both professional researchers and lay people (Thomae, 1980).

However, contrary to common fears, there is epidemiological evidence that neither depression nor dementia are necessary correlates of aging. The current elderly population has a lower life-time prevalence of depression than the rest of the population and only a small minority are diagnosed as cognitively impaired (Henderson, 1989). It may be that severe depression and significant impairments are linked to pathological processes separate from aging (Weingartner & Silber, 1982; Wigdor, 1980). However, many theorists believe that cognitive changes are part of the aging process and that increasing life expectancies will bring increased chances of cognitive impairment (Ames et al, 1974; Henry, 1965). The suspected reasons for such changes lie within the aging body: cognitive efficiency and the energy for motivated behavior appear to decline in later decades even in the absence of pathology (Ames, 1973; Thomae, 1980; Wigdor, 1980). It is unclear whether this decreased energy for initiation is directly related to cognitive changes or if it is more closely connected to some separate process of aging (Wigdor, 1980). Such impetus or arousal to action is psychologically and biologically defined as

drive (Freud, 1924; Wigdor, 1980). Theoretically all behavior results from drive, but not all drives result in overt behavior (Elias & Elias, 1977; Wigdor, 1980). The measurement of drive in humans utilizes expressions of interest and arousal in order to include drive that does not find expression in observable actions.

This study examined the interaction of depression, cognition, and drive in elderly nursing home residents. Depression was defined both affectively and behaviorally, using staff- and self-reports. Cognition was measured on a variety of scales, including measures of memory, attention, calculation and verbal skills. Drive was defined psychoanalytically, using Pine's system (1960) to score TAT stories.

In addition to the examination of the inter-relationships of these three psychological constructs, the effects of each (drive, cognition and depression) on perceptual processes was studied through Rorschach responses. Perceptual changes related to drive are not yet reported in the literature. However, perception is intrinsic to cognition (Exner, 1991; Ryan, Paolo, & Brungradt, 1990) and changes in perception have been linked to the duration of depressed mood (Hale & Strickland, 1976; Weingartner & Silberman, 1982). In light of the ease with which projective tests are given (Hayslip & Lowman, 1986; Kahana, 1978), and the large body of normative data available for younger adults (Exner, 1991), the expansion of such norms for elderly subjects, particularly in these areas of critical concern, was warranted.

LITERATURE REVIEW

1. Depression in the Elderly

The prevalence of depression among elderly adults is subject to some debate in the literature. Epidemiological studies report a lifetime prevalence rate under 2% for Americans over the age of 60, compared to a rate of 3% for younger adults (Myers et al, 1984). However, Gerner (1979) reviews studies indicating that over 33% of citizens over 60 have depressive symptoms and that 25% meet DSM-III diagnostic criteria. Parmelee & Lawton (1989) describe 3.7% of those over 60 as meeting the criteria for major depressive episodes and 26% displaying dysthymia and depressive symptomatology. Close to half of the new geriatric admissions to psychiatric hospitals are for the treatment of depression (Gerner, 1979; Henderson, 1989), and over 75% of nursing home patients are described as meeting diagnostic criteria for major depression (Sadavoy, Smith, Conn, & Richards, 1990). Henderson (1989) suggests that the discrepancy between the high rates of symptoms and lower rates of diagnosis is attributable to a lack of quantity of symptoms and a masking of the severity of symptoms necessary for DSM-III or III-R diagnoses.

Generally, depression is defined as "slowed thinking and decreased purposeful physical activity accompanying the mood change... In many severe cases this reduction involves obvious slowing of thinking and acting, but may also include a withdrawal from previous fields of interest (Stenback, 1980, p. 618)." Although such slowing and withdrawal described might be interpreted as lower energy levels, dynamic theory suggests that depression requires energy. Emotional and cognitive energy is believed to be directed internally towards a lost object, reducing the drive available for external activity (Freud, 1924; Stenback, 1980). There is evidence that depression does not manifest itself in the same manner throughout the life span. Older adults report much higher levels of apathy, more somatic complaints, more frequent symptoms of paranoia, and express less accompanying feelings of guilt (Gerner, 1979). Psychiatrists report

higher levels of masked or denied depression among elderly patients, and estimates describe as high as one third of all geriatric depression as being masked by the patient (Gerner, 1979; Miller, 1980). This poses obvious difficulties in identifying and treating older adults for depressive disorders.

2. Depression and Cognition

Much of the clinical literature on depression in the elderly centers on distinguishing depressed patients from those who are cognitively impaired. Indeed, an entire literature exists concerning the diagnosis of "pseudodementia," or the mimicking of organic dementia by depressive symptoms in the elderly (see for example, Sadavoy, 1984; Salzman & Gutfreund, in Poon, 1987; Wells, 1979). Unfortunately, this diagnostic issue may suggest to some researchers that the cognitive impairments caused by depression are not "real."

Cognitive impairment does not result solely from biological pathology. Affective changes and personality processes also cause changes in cognitive ability and may exacerbate existing pathological processes, although the pathways for this are still unknown (Heidell & Kidd, 1975; Miller, 1980). Depressed, but healthy, elderly subjects score higher on measures of cognitive impairment than do normal elderly (Miller, 1980; Sadavoy et al, 1990). In a review of the literature, Weingartner and Silberman (1982), conclude that depression results in both qualitative and quantitative changes in cognition, particularly in the efficiency of information processing, concentration, attention and memory retrieval. They report increased over-generalizations, selective attention to negative consequences, and changes in perceived loci of control. Additionally, reduced ability to sustain concentration, increased reaction time, response inhibition, and a conservative response bias are reported among depressed patients (Hale & Strickland, 1976). The memory deficits reported among depressed subjects seems particularly

related to difficulties remembering unrelated stimuli or handling tasks without internal structure (Weingartner & Silberman, 1982).

Miller (1980) reports that patients with organic impairments also display deep and genuine depressions which are not biologically attributable to their impairments. Using the Hamilton Rating Scale for Depression, she found that over 50% of her cognitively impaired patients were severely depressed and that this depression did not dissipate as their impairment grew more severe. However, Sadavoy et al (1990) report that any cognitive impairment increases the likelihood of depression, and that mild impairment increased depression more than does severe impairment. Sadavoy and her colleagues suggest that this may reflect the amount of energy and emotion mildly impaired subjects focus on their concentration difficulties. Depression was found more frequently among impaired males than impaired females (Sadavoy et al, 1990).

In addition to depression, the cognitive abilities of elderly subjects are vulnerable to many other damaging processes. Indeed, there is some evidence that the normal process of aging is in itself a dementing process (Wigdor, 1980). This "normal" process seems to be mediated by SES, residence, and sex (Hayslip & Lowman, 1986; Thomae, 1980). Other common causes of cognitive impairment include cerebral vascular accidents, infections, and atrophy, as well as dementing disorders such as Alzheimer's Disease, Multi-Infarct Dementia, and Parkinson's Disease.

3. Drive and the Aging Process

The earliest psychological theories of aging suggest that the process is in and of itself pathological. Freud (1924) writes that libidinal energy weakens in patients over 45 and that thought processes become more rigid. Rorschach (1942) agreed with Freud's statements and predicted that concomitant with weakening drive and decreased cognitive abilities, older adults would experience diminished capacity to use inner resources and weakening of reactions to emotional stimuli. Drive, in the psychodynamic sense, is the

energy impulse arising from physiological or psychological needs and external stimulation, resulting in heightened arousal (Wigdor, 1980). Physiologically, drives are described as arousal to action caused by biological needs. Most authors list four physiological drives: hunger, thirst, sex, and exploratory drive (Elias & Elias, 1977; Wigdor, 1980). The last is seen in both human and nonhuman animals and emerges as the need for stimulation and behavior which manipulates the environment after basic physiological needs are satisfied. As Freud noted, the basic drives of hunger, thirst, and sex do decline with aging. In both normal and pathological aging, changes in the limbic system, hormonal systems, and cortical efficiency may account for these decreases (Wigdor, 1980). Exploratory drive does not clearly decline with age, but is described as being maintained in some subjects by an unknown personality variable (Wigdor, 1980). However, Wigdor suggests that changes in frontal lobe functioning may account for decreases in initiation of behavior or emotional reactivity.

Decreases in motivated behavior are consistent with the disengagement theory of aging proposed by Henry (1965) which argues that as adults enter old age, they withdraw from society and become increasingly less active or engaged with the external world. Disengagement theory suggests that stereotypes of aggressive or outspoken older adults are pejorative descriptions of behaviors that are actually below the baseline for such actions when performed by younger adults. Jung and Erikson (in Brammer, 1984) in their descriptions of the aging process also suggest that the goals and expressions of drive change with age, and reflect a waning of underlying drive. Maslow (also in Brammer, 1984) postulated that the aging process might cause a regression to lower levels of functioning. Some personality researchers agree. Rosen & Neugarten (1960) report decreases in ego energy directly related to age, and unrelated to sex or SES.

However, in human research, socialization and learning have been shown to have large effect on the expression of drives. Elias & Elias (1977) report on the apparent effects of socialization on male sexual drive; despite a general and consistent decrease in

the frequency of sexual activity, measures of interest remain high into the ninth decade. Research on the activity level of adults is equivocal and the culturally proscribed roles for older adults may also contribute to reduced expression of drive. Havighurst (1963) in his activity theory, proposed that older persons have the drives and needs of middle aged adults, but that those drives must be acted upon to maintain health. He argued that reduced drive expression among elderly adults is due primarily to social expectancies and forced role reduction (Havighurst, 1963).

4. The Rorschach and Aging

Personality research, while not unequivocal, tends to support theories of declining drive due to the aging process. Rorschach studies of aging subjects generally report responses that are constricted, stereotyped, and of poor clarity (Lawton, Whelihan, & Belsky, 1980). Fewer responses, decreased movement responses, and lower levels of organizational activity (Zf) are all interpreted as reflecting decreased drive and lower ego energy (Ames et al, 1973; Insua & Loza, 1986; Mattlar, Knuts, & Virtanen, 1985; Prados & Fried, 1947; Rorschach, 1942). Decreased color and vista responses (Ames et al, 1973; Hayslip & Lowman, 1986) are assumed to reflect decreased affective energy and reduced introspection. Perceptual accuracy and intellectual efficiency, reflected in form quality and production of integrated whole responses, also declines (Ames et al, 1973; Mattlar et al, 1985; Shimonaka & Nakazato, 1991; Rorschach, 1942).

Although the above data seems overwhelming in its evidence for a "pathology" of normal aging, the Rorschach literature is not without alternative interpretations and warnings. A number of researchers claim that many of the changes seen in elderly subjects are artifacts of cross-sectional research and reflect changes in SES and education occurring over the last century (Reichlin, 1984). Thomae (1980) argues that the rigidity associated with aging is negatively correlated to intelligence and SES. Insua and Loza (1986) report that all types of movement responses are positively correlated with verbal

skills; a factor which cross-sectional research may not consider. Reichlin (1984) suggests that it may be normal for elderly subjects to have increased F%, low R, and low C due to lack of educational experience. Caldwell (1954) notes that a number of responses (Z, F+%, F%, content variation, and shading responses) correlate with global intelligence and that

reported changes in the aging process may reflect poorly controlled research.

Mattlar et al (1985), in a 10-year longitudinal study of elderly Finnish males, argue that many commonly reported age changes in Rorschach responses are attributable to residential status (community versus nursing home). In their very healthy sample (all community dwelling with Mini-Mental Status Exam scores above 24), they did not find any changes in F+%, popular responses, or animal movement. Ames et al (1973) make a similar distinction and divide their subjects into three groups: normal aged, institutionalized aged, and presenile. They report that normal aged subjects score higher F+, M, FM, FC, and P; that institutionalized aged score higher F% and anatomy content; and that presenile subjects give elevated animal content, more form responses, and lower F+%. Prados and Fried (1947) likewise, suggest that the institutionalized elderly demonstrate an accelerated aging process and should therefore be considered separately.

In addition to errors in research methods, theorists caution against biases in interpretation. Wigdor (1980) notes that decreased responses may reflect increased caution and lessened risk taking in response to changes in social rewards rather than the more common interpretation of decreased productivity. Klopfer (1974) cautions against pathologizing the aging process and suggests that common changes in the protocols of elderly subjects (decreased human and animal movement responses, increased F%, and decreased popular or color responses) may reflect a shedding of theoretical problems and a focusing on survival skills and increased relaxation. Eisdorfer (1960), working with elderly subjects, reported that subjects with hearing loss respond with greater rigidity, more control, and withdrawal. Eisdorfer (1960) failed to find similar changes when

subjects had poor vision, but Hayslip and Lowman (1986) present data on deterioration of color discrimination among elderly subjects and argue that interpretation of low color responses is insupportable.

Very few researchers have examined how diagnostic signs on the Rorschach might change with age. Orme (1955, in Reichlin, 1984) reports that compared to senile subjects, elderly depressed subjects give fewer whole responses, more anatomical content, more animal movement, and more form-color responses. Reichlin (1984) believes that depression will manifest for elderly subjects in the same ways it does for younger subjects on the Rorschach. It is known that demented subjects respond with poorer form quality, a narrow range of content and determinants, increased animal and anatomic content, an absence of movement responses, and increased perseveration (Ames, 1974; Reichlin, 1984), but no other diagnostic categories have been studied using elderly subjects and the Rorschach. The search for diagnostic signs of depression on the Rorschach has been exhaustive and prolonged (Exner, 1991); the most recent research by Exner (1991) has proposed two indices based on numerous criteria for detecting affective disturbances: the Depression Index (DEPI) and the Coping Deficit Index (CDI). However, these indices have been normed only for subjects 60 years old and younger. Exner (1991) does not mention elderly subjects in his Comprehensive System.

Although the Rorschach has not been normed for older adults, Hayslip and Lowman (1986) argue that projective tests are ideal for use with elderly patients. In their review of testing literature, they write that projectives do not induce fatigue, are easily understood, do not require sophisticated verbal skills, are difficult to fake, increase rapport, and may allow the testing of many "untestable" people.

HYPOTHESES

This study examined the interaction of drive, depression, and cognition in the perceptual processes of elderly nursing home residents. In light of the literature reviewed above, the following hypotheses were tested:

1. Drive, fueled by biological and psychological processes, was expected to decline only in the presence of severe biological impairment, as measured by tests of cognitive impairment and dementia.
    a. It was expected that as dementing processes continued, subjects would progress from direct-socialized expressions of drive to direct-unsocialized expressions, to indirect-weak expressions.
    b. It was hypothesized that drive is necessary for the presence of depression. Thus, as the expression of drive shifts from direct-socialized and direct-unsocialized expressions to weak-disguised expressions, it was predicted that depression would decline.
    c. Drive, as measured by the Pine System (1960), was expected to be reflected in Rorschach variables of organizational activity (Zf), movement responses (M, FM, and m), experience stimulation (es), the Depression Index (DEPI) and the Coping Deficit Index (CDI).
2. Cognition and depression were expected to be related to each other.
    a. Mild to moderate cognitive impairment was expected to correlate positively with depression, as depression exacerbates cognitive difficulties.
    b. Mild depression was expected to be masked by high cognitive abilities, but in less cognitively intact subjects it was expected to manifest in increased Rorschach responses of anatomical and morbid content, as well as increased animal movement.

3. Rorschach indicators were hypothesized to differentially reflect depression and cognitive changes.
   a. As the severity of depression increased, it was predicted Rorschach variables of (R), W%, M would decrease and variables DEPI, CDI, FM, m, and popular responses would increase.
   b. Cognitive impairment, measured by the Mini-Mental Status Exam and the Senile Dementia Alzheimer's Type Battery, was expected to affect the productivity and quality of Rorschach responses (R, Lambda, M, A%, Zf, F+% and CDI) as reported in earlier studies (Ames et al, 1973; Hayslip & Lowman, 1986), but the effects were predicted to be mediated by depression.
4. Cognitive impairment was predicted to increase with age.

METHODS

Subjects

This study utilized nursing home residents as subjects. It is recognized that this group represents a very select population of aging people and is not representative of the average or "healthy" elderly person. However, it is the population most at risk for cognitive and emotional impairments, as well as that most likely to receive psychological intervention. Some of the differences between this institutionalized population and older adults living in their own homes are: the nursing home population is generally female, with a female:male ratio of 3:1 or higher; residents tend to have multiple and concurrent chronic illnesses and to be at higher risk for injuries and acute infections (Levenson, 1987). Additionally, nursing home residents have a increased incidence of cognitive and emotional impairments; Sadavoy et al (1990) report that 75% of nursing home residents admitted for physical disabilities are also cognitively impaired, with over half showing severe impairments. This population tends to be an older sample of the aging population with mean age of 80-83 (Levenson, 1987; Libow, 1981). They have higher mortality rates and much higher levels of medical intervention; residents average 6-10 prescribed medications daily (Levenson, 1987).

Subjects were referred by the social workers of 5 nursing homes. The social workers were asked to provide the names of residents who might be depressed or cognitively impaired, but who had adequate verbal and visual skills to complete the protocol. In order to be included, subjects had to be 60 years old or older and demonstrate adequate ability to respond to the testing procedures. Ability was judged adequate if the subject scored above 14 on the Mini-Mental Status Exam (MMSE) and a Scaled Score of 6 or above on the WAIS-R Vocabulary Subtest.

Procedure

Once referred by the social worker, subjects were invited to participate in the research. Subjects were told that their participation was voluntary and part of a university research project on aging; consent was sought for both screening and subsequent testing. (Appendix A contains a copy of the consent form.) If they consented to participate, subjects were screened with the MMSE and the WAIS-R Vocabulary Subtest. After screening, subjects were administered the Senile Dementia Alzheimer's Type Battery (SDAT), the Geriatric Depression Scale (GDS), the Brief Symptom Inventory (BSI), the Rorschach, and ten of the TAT cards (cards 1, 2, 3BM, 4, 5, 6BM, 7GF, 9GF, 14 MF and 16). The Hamilton Rating Scale for Depression (HRSD) was scored based on the interview, chart review, and consultation with nursing home staff; demographic information including age, SES, education, and current medications was collected from medical charts and reviewed for accuracy with the subject. All assessments were administered by clinical psychology graduate students with training in the administration and scoring of these instruments as well as prior experience in the assessment of nursing home residents.

Tests and Measures

1. Brief Symptom Inventory (BSI)

(Derogatis & Spencer, 1983).

The BSI is a short form of the Symptom Check List-90 (SCL-90). It is reported to have correlations between .92 and .99 with the SCL-90 (Derogatis, 1977). It measures nine symptom clusters using self-report responses to 53 items. The nine scales measured are: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Normative data for elderly subjects was provided by Hale, Cochran, & Hedgepath (1984). Hale et al (1984) report that elderly subjects describe higher levels of distress on all scales; however, they

obtained their norms using community-dwelling adults. It should be expected that nursing home residents will score even above the norms established for the elderly.

2. Exner Comprehensive System for the Rorschach

(Exner, 1991.

The Exner method of Rorschach scoring and interpretation (Exner, 1991) is currently the most commonly used system (Piotrowski, Sherry, & Keller, 1985). Inter-rater reliability for scoring is usually reported at or about .85 (Gross, Newton, & Brooks, 1990); validity measures vary, but are reported in great detail by Exner (1991). At this time there are no published norms for adults over 60 years of age, but the research cited above in this paper suggests a number of differences between the scores of the elderly and other adults.

3. Geriatric Depression Scale (GDS)

(Yesavage, Brink, Rose, Lum, Huang, Adey, & Leirer, 1983).

The GDS is a 30 item self-report scale based on the Beck Depression inventory, but modified for use among elderly adults. It has been validated in a number of settings with both institutionalized and community-dwelling subjects. Parmelee and Lawton (1989) report that it is highly reliable over time (.86 over one year) and consistent with clinical diagnoses (78%) irrespective of cognitive deficits. Other researchers report similar results and high correlations between GDS scores and other measures of depression (Hickie & Snowdon, 1987; Parmelee & Lawton, 1989; Scogin, 1987).

4. Hamilton Rating Scale for Depression (HRSD)

(Hamilton, 1960).

The HRSD is a 21 item measure, completed by an interviewer or observer, thus eliminating the issues of reliability surrounding self-report measures (Hamilton,1960). Miller (1980) describes it as a well-validated and well-standardized measure of depression.

5. Mini-Mental Status Exam (MMSE)

(Folstein, Folstein, & McHugh, 1975).

The MMSE consists of 30 questions which test five areas of mental status: orientation, registration, attention, calculation, recall, and language. It is reported to be a highly reliable (.82-.98 over 24 hours) and valid measure of cognitive impairments correlating with CAT-scans, neurological examinations, and the WAIS-R (Holzer, Tischler, Leaf & Myers, 1984).

6. Pine's Scoring System for the TAT

(Pine, 1960).

Pine's system uses TAT stories to measure drives in a classic psychoanalytical sense; "aggressive and libidinal drives and partial drives including oral, phallic, genital, exhibitionistic, voyeuristic, sadistic, masochistic, homosexual, and narcissistic" content is coded (Pine, 1960, p. 33). The presence of drive is scored as either a neutralization of drive energy for productive activity or a weakening of ego control with maladaptive results. Thus expression of drive is scored in one of three categories: indirect-disguised, direct-socialized, and direct-unsocialized. The system also allows the measurement of drive integration, which is believed to reflect ego control. Integration is categorized as thematic, incidental, or nonappropriate. In his review of the literature, Bellak (1986) concludes that Pine's system is reliable and taps into characterological differences significant to the subjects' adaptive styles.

7. Senile Dementia Alzheimer's Type Battery (SDAT)

(Storandt, Botwinick, Danzinger, Berg, & Hughes, 1984).

The SDAT is a brief (10 minute) battery used to test cognitive functioning. It consists of four subtests including: the tests of Mental Control and Logical Memory from the Wechsler Memory Scale (Wechsler & Stone, 1983); Trailmaking A from the Halstead-Reitan Neuropsychological Battery and the test of Word Fluency which asks the subject to list as many words beginning with a specific letter as possible in 60 seconds.

8. Vocabulary Subtest, WAIS-R

The Vocabulary Subtest of the WAIS-R is considered the most reliable of all of the subtests (Ryan, Paolo, & Brungardt, 1990). Scores are believed to represent not only verbal skills but also reflect premorbid intellectual functioning, and provide a useful screening test to distinguish between normal and impaired subjects (Ryan, 1983).

Scoring

Four measures required advanced training and skilled judgment to score: the WAIS-R Vocabulary Subtest, the SDAT, the Rorschach and the TAT. The investigator scored all protocols; four other graduate students in clinical psychology volunteered to rescore the protocols in order to establish reliability; each protocol was rescored only once. When the second scoring differed from the original scoring, a third opinion was sought to decide the final score. WAIS-R scores percent agreement was .97; SDAT percent agreement was .94; Rorschach percent agreement was .91; and TAT percent agreement was .87. The agreement levels reflect both the scorers' familiarity with the instruments and the precision of the scoring guidelines.

Analysis

Standard descriptive statistics were computed for all relevant variables. Correlations with Bonferroni-adjusted p-values or Kruskal-Wallis statistics were calculated to examine simple relationships. Regression was used to test the following relationships:

1. The interactions between drive and cognition, and drive and depression (Hypothesis 1).
2. Depression and cognition (Hypothesis 2).
3. Rorschach variables as indicators of drive, cognition, and depression (Hypotheses 1c and 3).

Multiple regression was used to examine the following inter-relationships :

1. Drive quality as mediated by cognition and depression (Hypothesis 1).
2. Cognitive impairment and age (Hypothesis 4).

RESULTS

Sample Selection and Response Rate

Five nursing homes were used in the study. One was financially sponsored by the Jewish faith community and a second was run by the Dominican sisters; the remaining three nursing homes were privately owned and run. Two of the nursing homes were located in a medium sized city in Michigan, one in a mid-sized Canadian city, one in a small New York town, and one in a large Texas city. The author completed all of the assessments. Subjects were nominated for the study by the social workers in each nursing home. The social workers were told that subjects would need to score at least a 14 on the Mini-Mental Status Exam and that they needed adequate visual acuity to take a Rorschach Test. Each social worker was familiar with the MMSE from her own work, and using a census list of residents, highlighted residents she thought appropriate. Of the 123 subjects nominated, six scored below the required 14 on the MMSE, one was too visually impaired to take a Rorschach or TAT, eleven refused to participate, and five discontinued the testing without completing the protocol. The remaining 100 completed the full battery. Some finished in as little as three hours; most required two sessions totaling 4 hours of examiner time.

DESCRIPTIVE STATISTICS

Demographic Data

The sample ranged in age from 67 to 103, with a mean age of 80 years. The women had been in nursing homes for an average of 16 months. Their educational levels averaged 11 years, but the population was bimodal, with 26 percent stopping after the eighth grade, and fifty-three percent finishing with a high school diploma. They reported a mean number of children of 4, with a range of 0 to 15 births. The majority of subjects were widows (71%), similar to the general population of elderly women. Table 1

provides the statistical data on age, time in nursing home, education, and number of children. Table 2 lists their marital status.

Table 1: Means and Distribution of Age, Time in Nursing Home, Education and Children

	Age	Months in Nursing Home	Education	Children
Mean	80.35	16.44	11.10	4.03
Minimum	67.00	1.00	8.00	0.00
Maximum	103.00	108.00	18.00	15.00
Standard Deviation	6.87	16.64	1.97	2.94

N = 100

Table 2: Marital Status

Widowed	71%	Married	12
Divorced/Separated	11	Never Married	6

N = 100

Table 3 lists the careers of the subjects and their husbands. Although virtually all of the subjects had held formal employment at some time in their lives, 52 percent identified themselves as homemakers. When subjects had been married more than once, the highest status career held by their husbands was counted. It should be noted that over half of the data was gathered in midwestern industrial cities; this may account for the high number of factory workers.

Religious affiliation is presented in Table 4. All but one of the subjects acknowledged a strong religious value system, and 88% described themselves as belonging to a particular religious group. Eleven percent did not feel that they belonged to any particular denomination, but described themselves as "Christians." One stated that she did not believe in God or religion. Two of the participating nursing homes were religiously affiliated: one was financially supported by the Jewish community and a second was run by the Dominican sisters.

Table 3: Identified Careers for Subjects and Spouses

	Subjects	Husbands
Beautician	2 %	
Business Owner (Small)	2	15%
Clerk	8	4
Construction		2
Craftsperson	2	8
Domestic Help	5	1
Factory Work	14	28
Farmers	2	26
Homemakers	52	
Manual Labor		3
Military		1
News Reporter		2
Nurses	5	
Professional	2	10
Teachers	6	
N =	100	94

Table 4: Religious Affiliation

Agnostic	1%
Baptist	6
Jewish	14
Lutheran	9
Methodists	4
Presbyterian	13
Protestant	22
Roman Catholic	20
Nondenominational Christians	11

N = 100

Social contact and activity are widely regarded as enhancing of mood and cognitive status. Nursing home staff generally work to encourage family and community visits. They are required by law to provide a wide range of activities for their residents, and staff strongly encourage residents to attend the programs. Agency social workers are required to track resident participation and contact for their records. Table 5 presents the average number of visits and telephone calls received weekly by subjects, as well the average number of activities and hobbies subjects engaged in over a week. Television watching, reading, knitting and card games were the most frequently reported hobbies.

Table 5: Weekly Visits and Telephone Calls

Number of Contacts/ Activities	Visits	Telephone Calls	Facility Activities	Hobbies
0	59%	43%	11	27
1	11	27	18	18
2	17	19	28	48
3	1	0	4	4
4	0	2	4	2
5	1	0	3	1
6	0	0	1	
7	1	9	14	
8	0	0	3	
9	0	0	8	
10	10	0	2	
12	0	0	2	
15	0	0	1	

N = 100

Increasingly, nursing home residents are presenting with multiple medical diagnosis (TGEC, 1993). Table 6 presents the number of diagnoses carried and the number of prescriptions ordered on the subjects' charts. Appendix B lists all diagnoses and medications. Dementia was considered a medical diagnosis; due to the selection criteria of this study, there were a low number of demented patients. Psychiatric diagnoses listed

on the charts consisted of depression, anxiety disorders, and paranoid personality disorder. In gathering data on medications, nutritional supplements were excluded.

Table 6: Number of Diagnoses and Prescriptions Per Subject

Quantity	Medical Diagnoses	Psychiatric Diagnoses	Prescriptions
1	11%	10%	1%
2	1	2	22
3	15		18
4	38		25
5	29		22
7	4		9
8 or more	2		3

N = 100

Measures of Depression

Three standardized measures of depression were used: the Geriatric Depression Scale (GDS), the Hamilton Depression Rating Scale (Hamilton), and the Depression Subscale of the Brief Symptom Inventory (BSI-Depression). The mean scores, range, and distribution for each test is shown in Table 7. Standard scores were used to determine the intercorrelations of the three instruments. As would be expected, the three rating were all significantly and positively correlated with each other (Table 8). The two self-report measures (GDS and BSI-Depression) were more closely related to each other than to the Hamilton which relies on observer-ratings. In order to utilize all three measures in statistical analyses involving depression, the standard scores of the three were additively combined into a Total Depression Score. The correlations of this new score with its component parts are listed in Table 9.

Table 7: Depression Rating Measures: Mean Scores and Distribution

	GDS	Hamilton	BSI-Depression
Mean	12.79	10.06	1.05
Minimum	2.00	0.00	0.17
Maximum	25.00	42.00	2.67
Variance	32.67	140.70	0.63
Standard Deviation	5.71	11.86	0.79

N = 100

Table 8: Pearson Correlations Between Depression Rating Measures (Using standard scores.)

	GDS		Hamilton		BSI Depression	
	p		p		p	
GDS	1.00	(0.00)				
Hamilton	0.60	(0.00)	1.00	(0.00)		
BSI-Depression	0.89	(0.00)	0.47	(0.00)	1.00	(0.00)

N: 100

Table 9: Total Depression Score Correlated with Measures of Depression (Using standard scores.)

	Total Depression	
		p
Total Depression	1.00	(0.00)
GDS	0.82	(0.00)
Hamilton	0.95	(0.00)
BSI-Depression	0.70	(0.00)

N: 100

Measures of Cognition

Cognition was measured with three instruments: the Mini-Mental Status Exam (MMSE), the WAIS-R Vocabulary Subtest (WAIS-Vocab), and the Senile Dementia of the Alzheimer's Type Battery (SDAT). As noted in the Methods Section above, each of these tests measures a different aspect of cognition. The MMSE tests mental status and orientation; the WAIS-Vocab provides a measure of premorbid intelligence. The SDAT measures memory, attention, concentration, and executive functioning. Normally, the SDAT includes Trails A, from the Halstead-Reitan Test Battery. A large number of subjects (37) could not complete the Trails A subtest due to hemiparesis, arthritis or other motor difficulties. Therefore, this measure was dropped from the SDAT scores. The mean and distribution of scores for each of the cognition measures is presented in Table 10. The relationship between the three varied measures was tested using their standard scores and Pearson's Correlation; results are show in Table11. All three were significantly correlated. The SDAT was negatively correlated with the MMSE and the WAIS-Vocab because it measures cognitive decline; a low score indicates greater cognitive abilities than does a high score. In order to assist with further analyses requiring a measure of cognition, the SDAT scores were reversed in sign (so that positive scores indicated greater cognitive ability), and the standard scores of the three tests were combined additively into a Total Cognition Score. The relationships between the Total Cognition Score and the three individual measures of cognition are shown in Table 12.

Table 10: Cognitive Measures: Means and Distribution

	MMSE	WAIS-Vocab	SDAT
Mean	23.01	34.99	-0.57
Minimum	14.00	12.00	-4.61
Maximum	29.00	62.00	3.17
Standard Deviation	4.26	16.78	1.67

N = 100

Table 11: Correlations Between Measures of Cognition

	MMSE	p	WAIS-Vocab	p	SDAT	p
MMSE	1.00	(0.00)				
WAIS-Vocab	0.62	(0.00)	1.00	(0.00)		
SDAT	-0.58	(0.00)	-0.47	(0.00)	1.00	(0.00)

N: 100

Table 12: Total Cognition Score Correlated with Individual Measures of Cognition

	MMSE	WAIS-Vocab	SDAT	Total Cognition
Total Cognition	0.70	0.99	-0.44	1.00
p	(0.00)	(0.00)	(0.00)	(0.00)

N: 100

Measures of Drive

Drive was measured using Pine's scoring system for the TAT. Three types of scores are derived. The level of the drive's socialization is scored as unsocialized-direct (Level 1), socialized-direct (Level 2), and indirect-disguised (Level 3). The integration of the drive content within the story is scored as Thematic, Incidental, or Nonappropriate. The type of drive is scored as aggressive, libidinal, or partial; due to the distribution of scores in this sample, partial drives were scored as oral or other. The Total Drive Score represents the number of times drive is expressed. Table 13 presents the descriptive statistics for the drive scores.

Table 13: Drive Scores: Means and Distribution

	Total	Level 1	Level 2	Level 3
Mean	7.53	1.61	3.62	2.62
Standard Deviation	3.02	1.50	2.91	2.28
Minimum	0.00	0.00	0.00	0.00
Maximum	17.00	8.00	11.00	8.00

	Thematic	Incidental	Nonappropriate
Mean	5.97	1.35	0.42
Standard Deviation	2.28	1.39	1.06
Minimum	1.00	0.00	0.00
Maximum	14.00	7.00	7.00

	Aggressive	Libidinal	Oral	Other
Mean	4.26	1.710	1.380	0.290
Standard Deviation	2.31	1.452	2.004	0.832
Minimum	0.00	0.000	0.000	0.000
Maximum	11.00	6.000	9.000	4.000

N = 100

Rorschach Responses

The Exner Comprehensive Scoring System yields over 120 different scores for a Rorschach profile. A comprehensive listing of subjects' responses is listed in Appendix C. This section reports the sample's scores on those variables hypothesized above to relate to depression, cognition, and drive. Hypotheses were made concerning R, W%, M, FM, m, Popular, Lambda, A, Zf, F+%, es, DEPI and CDI. The descriptive statistics for these variables are presented below in Table 14.

Table 14: Rorschach Variables: Descriptive Statistics

	Mean	SD	Min	Max	Skew	Kurtosis
R	14.58	3.91	6.00	22.00	-0.36	0.72
W%	0.53	0.25	0.12	0.88	-0.27	-1.22
Lambda	1.07	1.53	0.08	11.00	5.51	33.27
Zf	4.19	2.14	0.00	8.00	0.52	-0.93
F+%	0.59	0.27	0.33	1.00	0.52	-1.33
es	5.67	2.91	1.00	12.00	0.38	-1.20
M	1.41	1.56	0.00	4.00	0.73	-1.09
FM	3.05	1.99	0.00	8.00	-0.03	-0.86
m	0.37	0.48	0.00	1.00	0.54	-1.71
A	0.57	0.14	0.00	0.77	-1.50	3.84
Popular	4.24	1.96	1.00	7.00	-0.50	-0.90
DEPI	3.40	0.82	2.00	5.00	0.38	-0.35
CDI	3.42	1.16	1.00	5.00	-0.44	-0.53

N = 100

STATISTICAL ANALYSES OF VARIABLE RELATIONSHIPS

Relationships between Demographic Variables, Depression, Cognition, and Drive

Pearson Correlations were computed to determine how depression, cognition, and drive were related to age, time in nursing home, education, and number of children. Using the Total Depression Score, depression was found to correlate significantly and positively with number of children. Using the Total Cognition Score, cognition was found to correlate significantly and positively with education. Cognitive abilities correlated significantly and negatively with number of children. There was a strong positive trend relating cognition and the amount of time in a nursing home. None of the correlations involving Total Drive were significant. Results are presented in Table 15.

The Kruskal-Wallis Test was used to detect any significant interactions of depression, cognition and drive with marital status, career, spouse's career, and religious affiliation. Results are presented in Table 16. Only one of the tests approached significance; drive was strongly associated with self-identified former career. Table 17 presents the data. Former nurses scored the lowest amount of drive, while homemakers and factory workers scored the highest amount.

Table 15: Depression, Cognition and Drive Correlated to Age, Time in Nursing Home, Education and Number of Children

	Age	Months in Nursing Home	Education	Children
	p	p	p	p
Total Depression Score	-0.23 (0.41)	-0.12 (1.00)	0.20 (1.00)	0.62 (0.00)
Total Cognition Score	-0.00 (1.00)	0.30 (0.06)	0.44 (0.00)	-0.39 (0.00)
Total Drive Score	0.04 (1.00)	-0.09 (1.00)	-0.09 (1.00)	0.00 (1.00)

N = 100

Table 16: Depression, Cognition and Drive related to Marital Status, Career, Spouse's Career and Religious Affiliation.

	Kruskal-Wallis	p	df
Cognition			
Marital Status	2.88	(0.41)	3
Career	11.70	(0.37)	10
Spouse's Career	15.15	(0.18)	11
Religion	8.40	(0.43)	8
Depression			
Marital Status	0.93	(0.82)	3
Career	13.29	(0.21)	10
Spouse's Career	12.01	(0.36)	11
Religion	8.03	(0.43)	8
Drive			
Marital Status	2.32	(5.10)	3
Career	17.49	(0.06)	10
Spouse's Career	12.92	(0.30)	11
Religion	7.37	(0.50)	8

N = 100

Table 17: Drive and Career
(Careers are ranked in order of drive expressed, from highest to lowest.)

Career	Count	Rank Sum
Homemaker	52	3115.000
Factory Worker	14	736.000
Farmer	2	101.000
Business Owner	2	85.500
Domestic Help	5	199.000
Professional	2	79.000
Beautician	2	74.000
Craftsperson	2	74.000
Teacher	6	215.000
Clerk	8	262.000
Nurse	5	109.500

Kruskal-Wallis Test Statistic = 17.491, $p < 0.064$, Df = 10
N = 100

In order to determine the relationships of social contact and activity with mood, cognition, and drive, correlations were computed for each pair. Visits and telephone calls were negatively correlated with depression, visits to a significant level and calls to a near significant level. Visits and calls were both correlated significantly and positively with cognitive abilities. Neither activities nor hobbies demonstrated a significant relationship with mood or cognition, although the relationship between activities and cognitive strength indicated a slight trend. Drive was not significantly correlated with social contact or activity. Table 18 presents the data.

Similarly, a Pearson's Product Moment Correlation was computed to find the correlations between the number of medical diagnoses, psychiatric diagnoses, and medications prescribed, and the subjects' measures of depression, cognition, and drive. The relationships which include psychiatric diagnoses are suspect due to the extremely small sample size (only twelve subjects had psychiatric diagnoses). The significant relationships were a positive correlation between depression and number of medical diagnoses, and a negative correlation between drive and number of medical diagnoses. Cognition was not significantly affected by number of diagnoses or medications. The results are listed in Table 19.

Relationships Between Depression and Cognition

Depression was predicted to be negatively correlated with cognition and positively correlated with cognitive impairment (Hypothesis 2a). This hypothesis was tested in two ways. First, the correlation of depression with general cognition was tested; then the relationship between depression and the SDAT (the measure of cognitive impairment) was tested. When the Total Cognition Score was used, cognition was negatively and significantly correlated with depression as predicted. When the SDAT was used alone as a measure of cognitive impairment, the relationship was not significant. Results are presented in Table 20.

Table 18: Correlations Between Social Contact, Activity, Mood, Cognition and Drive

	Visitors	Calls	Activities	Hobbies
Visitors	1.00			
p	(0.00)			
Calls	0.86	1.00		
p	(0.00)	(0.00)		
Activities	-0.20	-0.24	1.00	
p	(1.00)	(0.50)	(0.00)	
Hobbies	0.24	0.31	0.24	1.00
p	(0.50)	(0.06)	(0.52)	(0.00)
Total Depression Score	-0.32	-0.30	-0.25	-0.22
	(0.05)	(0.094)	(0.365)	(0.87)
Total Cognition Score	0.46	0.56	-0.27	0.02
p	(0.00)	(0000)	(0.21)	(1.00)
Total Drive Score	0.11	-0.01	0.14	0.18
p	(1.00)	(1.00)	(1.00)	(1.00)

N = 100

Table 19: Correlations Between Number of Medical Diagnoses, Number of Psychiatric Diagnoses, Number of Medications, Depression, Cognition, and Drive

	Medical Diagnoses	Psychiatric Diagnoses	Medications
Medical Diagnoses	1.00		
p	(0.00)		
Psychiatric Diagnoses	-1.00 *	1.00 *	
p	(0.00)	(0.00)	
Medications	0.36	-1.00 *	1.00
p	(0.01)	(0.00)	(0.00)
Total Cognition Score	0.05	-0.93 *	-0.05
p	(1.00)	(0.00)	(1.00)
Total Depression Score	0.36	1.00 *	-0.11
p	(0.00)	(0.00)	(1.00)
Total Drive Score	-0.31	-0.75 *	0.15
p	(0.00)	(0.05)	(1.00)

* Individual tests for Psychiatric Diagnoses are suspect due to the small sample size.

Note: N for Psychiatric Diagnoses = 12; N for all others = 100.

Table 20: Depression and Cognition.

	Total Cognition Score	SDAT
Total Depression Score	-0.50	-0.00
p	(0.00)	(1.00)

N = 100

Relationships Between Drive and Cognition

Expression of drive was hypothesized to be mediated by cognition, and to be necessary for the experience of depression (Hypothesis 1). A number of analyses were computed to test these hypotheses. First, the Total Drive Score was examined relative to cognition; the relationship was found to be insignificant. Table 21 presents the data.

Table 21: Drive and Cognition

	Total Drive	Total Cognition
Total Drive	1.00 (0.00)	
Total Cognition	0.06 (0.56)	1.00 (0.00)

N = 100

Drive was hypothesized to decline most sharply in the presence of severe cognitive decline (Hypothesis 1a). To investigate further, the relationship between Cognition and Drive was tested among the lowest quartile of Cognitive scores and then again on the remaining top three quartiles. The relationship remained insignificant both with the subjects scoring within the lowest quartile on Total Cognitive Score and those scoring among the top three quartiles. Table 22 displays the results.

It was originally hypothesized that as Cognition declined, Drive expression would shift from Level 2 (Direct-Socialized) to Level 1 (Direct-Unsocialized) to Level 3

(Indirect-Weak). The relationships between Cognition and Drive Expression Levels 1, 2 and 3 were investigated by using the percentage of Drive Level in order to control for changes in the amount of drive expressed. Contrary to hypothesis, cognition was not significantly correlated with any of the levels of drive. Level 1 Expression was positively and significantly correlated with both Level 2 and Level 3 expressions. Table 23 presents the data.

Table 22: Correlation: Total Drive and Total Cognition Using Lower Quartile of Cognitive Scores (N = 25)

	Total Drive	Total Cognition
Total Drive	1.00 (0.00)	
Total Cognition	0.18 (9.38)	1.00 (0.00)

Using Upper 3 Quartiles of Cognitive Scores (N = 75)

	Total Drive	Total Cognition
Total Drive	1.00 (0.00)	
Total Cognition	0.00 (0.99)	1.00 (0.00)

Table 23: Correlations: Cognition by Level of Drive

	Total Cognition	Level 1	Level 2	Level 3
Total Cognition	1.00 (0.00)			
Level 1	0.16 (0.66)	1.00 (0.00)		
Level 2	0.15 (0.83)	0.48 (0.00)	1.00 (0.00)	
Level 3	0.06 (1.00)	0.80 (0.00)	0.20 (1.00)	1.00 (0.00)

N = 100

Relationships Between Drive and Depression

Drive was hypothesized to be necessary for the experience of depression. The possibility of a dependent relationship between depression and drive was tested using regression analysis. Using all 100 cases, the relationship was found to be statistically insignificant. Two subjects (60 and 100) were flagged as wielding too much leverage in the computations, so an additional regression was computed deleting these cases; the relationship was still insignificant. Table 24 shows the results. When depression was examined in relationship to Level of Drive Expression (Hypothesis 1b), results were again insignificant. Table 25 presents the results.

Table 24: Regression Analysis: Dependent Variable: Depression, Independent Variable: Drive

Multiple R = 0.02, Squared Multiple R = 0.00
Adjusted Squared Multiple R = 0.00
Standard Error of Estimate = 16.59

Variable	Standard Coefficient	Tolerance	T	p (2-tailed)
Constant	0.00	5.55	0.00	
Total Drive	-0.02	1.00	-0.23	0.82

N = 100

Regression Analysis with High Leverage Cases Deleted.

Multiple R = 0.01, Squared Multiple R = 0.00
Adjusted Squared Multiple R = 0.00
Standard Error of Estimate = 16.69

Variable	Standard Coefficient	Tolerance	T	p (2-tailed)
Constant	0.00	4.87	0.00	
Total Drive	0.01	1.00	0.02	0.90

N = 98

Table 25: Regression Analysis: Dependent Variable: Depression Independent Variable: Level of Drive (1, 2, 3)

Multiple R = 0.09, Squared Multiple R = 0.017
Adjusted Squared Multiple R = 0.00
Standard Error of Estimate = 16.70

Variable	Standard Coefficient	Tolerance	T	p (2-tailed)
Constant	4.63	0.00		
Level 1	-0.06	0.93	-0.527	0.61
Level 2	0.00	0.57	0.02	0.99
Level 3	0.08	0.55	0.57	0.57

N = 100

Rorschach Variables and Depression

Rorschach variables R, W%, and M were predicted to be negatively correlated with depression; DEPI, CDI, FM, m and Popular responses were predicted to be positively correlated with depression (Hypothesis 3a). Table 26 presents the Pearson correlations for these factors. As predicted, R and W% were negatively correlated with depression; however the relationship for W% was not significant. The relationship between CDI and depression was positive, as predicted, but also failed to reach significance. Contrary to prediction, the correlation between M and depression indicated a positive trend. Also contradicting earlier hypotheses, DEPI, FM, m and Popular responses were all negatively correlated with depression scores; the relationships for DEPI, m and Popular responses reached significance.

Rorschach variables An, MOR and FM were predicted to correlate positively with depression in less cognitively intact subjects (Hypothesis 2b). For the analysis, subjects were ranked by Total Cognition Scores. Three sets of correlations were then computed; one for the lowest ranking quartile of cognitive scores, one for the lower half of cognitive

scores, and one for the entire sample. Table 27 presents the correlations for this hypothesis. Cognitive scores exerted a marked influence on the results. Amongst the lowest quartile of cognitive scores, none of the variables (An, FM or MOR) were significant predictors of depression. For the lower half of the cognitive scores, the FM and MOR scores were negatively and significantly correlated with depression scores. When the entire population was sampled, all three variables, AN, FM, and MOR, were negatively and significantly correlated with depression.

Table 26: Rorschach Variables and Depression

	Total Depression Index	
R	-0.79	(0.00)
W%	-0.05	(1.00)
M	0.16	(1.00)
FM	-0.02	(1.00)
m	-0.50	(0.00)
Populars	-0.48	(0.00)
DEPI	-0.42	(0.00)
CDI	0.17	(0.58)

N: 100

Table 27: Rorschach Variables and Depression, Sampled by Cognitive Scores

	An	FM	MOR
Lower Quartile (N=25)			
Total Depression Score	-0.16	0.38	-0.38
p	(1.00)	(0.40)	(0.42)
Lower Half (N=50)			
Total Depression Score	-0.14	-0.39	-0.66
p	(1.00)	(0.05)	(0.00)
Entire Sample (N=100)			
Total Depression Score	-0.40	-0.01	-0.53
p	(0.00)	(1.00)	(0.00)

Rorschach Variables and Cognition

Rorschach variables R, Lambda, M, A%, Zf and F+% were predicted to be positively correlated with cognition, when depression was held constant. The CDI was predicted to be negatively correlated with cognition when depression was held constant. Four of these Rorschach scores were significantly related to cognition; R, M, and Zf were all related in a positive direction; Lambda was related in a negative direction. A%, F+% and CDI were not significantly related to cognition. Table 28 presents the data.

Table 28: Regression Analysis: Rorschach Variables Dependent on Total Cognition, Depression Held Constant

	R	Lambda	M	A%	Zf	F+%	CDI
Standard Coefficient	0.21	-0.35	0.61	0.05	0.67	0.16	-0.01
T	3.16	-3.32	6.62	0.54	8.24	1.41	-0.10
p (2-tailed)	0.00	0.00	0.00	0.59	0.00	0.16	0.92

N = 100

Rorschach Variables and Drive

Drive was hypothesized to be positively associated with Zf, M, FM, m, and es. Drive was hypothesized to be negatively related to DEPI and CDI. None of the relationships reached significance; the relationship between Zf and Drive indicated a trend. Table 29 presents the data.

Table 29: Regression Analysis: Rorschach Variables Dependent on Total Drive

	Standard Coefficient	T	p (2-tailed)
Zf	0.15	1.49	0.14
M	-0.06	-0.61	0.54
FM	0.04	0.04	0.70
m	0.03	0.30	0.77
es	0.05	0.53	0.60
DEPI	-0.03	-0.30	0.77
CDI	0.03	0.33	0.74

N = 100

DISCUSSION

Demographics

The mean age of the sample reflects the mean reported for nursing home residents (80 years) (Levenson, 1987). The time spent living in a nursing home was also comparable to the reported national average (16 months) (Levenson, 1987). Participants were not seen to differ in number of children, education, or occupation when compared to residents within their own nursing homes. Neither were they different in number of visitors, calls, or weekly activities. They did have slightly fewer medications and diagnoses when compared to national averages (median diagnoses for subjects = 4; for nation = 6; median medications for subjects = 4, for nation = 6) (Levenson, 1987). This may be due in part to the screening criteria which asked for the more cognitively intact. It should also be noted that dietary supplements were not recorded, and that "status post" diagnoses were not recorded unless requiring current treatment (many nursing home charts record multiple status post diagnoses no longer receiving treatment).

Depression

The mean score for depression on all three measures falls below the cutoff for a diagnosis of depression. Although the subjects spanned a wide range of scores, the majority did not fall within the depressed range. On the three tests of depression, 67-70% of the subjects fell below the cutoff for depression; 20% scored within the mild-to-moderately depressed range; and 10% were scored within the severely depressed range.

Cognition

The mean scores on tests of cognition place the sample on the cutoff line between dementia and intact cognitive functioning. On the MMSE, the mean score for the sample is one point below the standard cutoff for dementia; however, the high number of motor impairments (38% had impairments of manual dexterity) would lower the cutoff score two points for this particular sample, placing the mean just above the cutoff. On the WAIS-R Vocabulary Subtest, the mean score for the sample was 35, or a scaled score of

8. This placed the sample at the twenty-fifth percentile for their age group or at an estimated Verbal IQ of 90. On the SDAT, the mean sample score was -0.574; positive scores are considered indicative of dementia.

Drive

There is no normative data available for Pine's Drive Rating System. In his manual for the rating system, Pine (1960) reported an average of 2.84 drive expressions per story, when testing college students. Dieztel and Abeles (1971), also testing college students, found an average of 2.85 expressions of drive per card. The average for this sample of older women was 0.75 drive expressions per card. Although there was not a significant correlation of age with drive within the subject sample, a comparison of these three studies suggests that there might be a significant relationship across a larger age span. Such a finding would support drive theory which posits a negative relationship between age and drive (Freud, 1924; Wigdor, 1980).

Interactions of Variables

Demographic Variables with Depression, Drive, and Cognition

Of the demographic variables tested, only number of children was found to correlate significantly (and positively) with depression; number of children also correlated (negatively) with level of cognition. The relationship between children, mood and cognition appears to be an artifact of other relationships. Statistically, children are negatively and significantly correlated with education; education was a positive and significant predictor of cognitive level in this study. Cognition and mood are negatively and significantly related. Neither education nor remaining cognitive level should be equated with premorbid intelligence for the population under study. Education was publicly funded only through the eighth grade for most of the subjects, and additional education often resulted from family resources and social status rather than intellectual ability or interest. By extension, education was also correlated with the subjects' adult

income and social status. The positive relationship between cognition and education for this cohort was confounded with better resources and higher social status as well as the benefits of resources: access to medical care, food, and environmental safety.

In addition to number of children and education, time in the nursing home was strongly correlated with cognitive level ($p < .06$). Time in nursing home was positively correlated with cognitive status; the direction of the relationship was surprising. This is most likely a result of the screening criteria which selected only the cognitively intact. Those residents who have lived in nursing homes for extended lengths of time (one subject had lived in the nursing home for 12 years) and who are still scoring within the range required for this study, do not suffer from dementing diseases. Patients who survive long periods of time within nursing homes and are sufficiently intact to participate in studies such as this are the most cognitively intact.

Drive was not predicted by any of the demographic variables. This contradicts earlier hypotheses that drive would decline with age. As noted above, it may be that the span of years (36 years), particularly with this cohort of medically impaired subjects, was not significant to detect the relationship between drive and biological drive.

The relationship between drive and career approached significance. The relationship between career and drive was unrelated to education, and examination of the data does not suggest an explanation for the relationship. Table 17 above (page 29) presents the order of the careers and related levels of drive expression.

Social contact was significantly correlated with depression and cognition. Social contact was a negative predictor of depression and a positive predictor for cognitive status. The subjects in this study represent the higher functioning residents in nursing homes and each voluntarily participated in the research. Those who received the least social interaction were not lacking ability to communicate meaningfully. Although the initial causal relationship is unknown, and most likely varied, considerable research

indicates that increased social contact has a positive and causal effect on mood and cognition (Beck, 1974). Social contact was not predictive of drive expression.

Activity in the form of program participation or hobbies was not predictive of cognition, mood or drive. This may reflect the level of activity programming available in most nursing homes; frequently it is aimed at lower functioning residents who are less able to find activity independently. Lower functioning residents are also given more encouragement to attend activities; higher functioning residents are permitted more latitude.

The number of medical diagnoses carried by each subject was a positive predictor of depression and a negative predictor of drive. The relationship between depression and diagnoses is consistent with results reported elsewhere (Sadavoy et al, 1990). The more medically involved patient is more susceptible to depression. The relationship between drive and diagnoses also follows from theory and research (Wigdor, 1980); as the body declines in physical health, it declines in physical and psychic energy. The directions of the relationships for drive and depression contradict the traditional theory tested here that posits that drive is necessary for the presence of depression (Freud, 1924). In this study, as subjects became more ill, drive declined, and depression increased. The traditional theory of drive and depression may not apply to medically involved subjects.

Number of diagnoses was not predictive of cognitive status. Number of medications failed to predict drive, depression or cognition.

Depression, Cognition and Drive

Depression was significantly and negatively correlated with cognition, as predicted. The most cognitively intact subjects were the least depressed. Several explanations are possible, none of which excludes another. More cognitively intact subjects received more social contact; as stated above, social contact is negatively associated with depression. More cognitively intact subjects may have possessed greater personal resources to combat depressed mood. Finally, cognitive impairments are associated as both cause and effect of depression. That is, subjects reported feeling depressed over their changes in mental status, and depression is known to lessen one's cognitive ability (Sadavoy, et al, 1990; Miller, 1980).

Drive was not found to be related to either depression or cognition, despite hypotheses to the contrary. This study indicates that the theoretical basis for relating drive to depression and cognition was not confirmed in this population. It may be that depression and cognition are predictive of drive in younger or healthier groups.

Rorschach Variables with Depression, Drive and Cognition

Rorschach variables DEPI, R, m and Populars were each significantly and negatively associated with depression. These variables represent response rate (R), inanimate movement (m), and popular responses; the DEPI is a cluster of pathonomic signs positively associated with depression in younger adults. That the response rate was negatively correlated with depression is consistent with hypotheses as well as reported experience with younger subjects (Exner, 1991). More depressed subjects offer fewer responses to external stimuli. The negative association between DEPI, m and popular responses with depression was unexpected. In younger subjects, DEPI, m responses and popular responses are positively associated with depression (Exner, 1991). In this study, DEPI, m and popular responses were positively correlated with R. It is likely that in this particular population, depression lowers over-all response rate so severely that the

presence of DEPI, m responses and popular responses are inversely associated with depression.

It had been predicted that cognitive level and depression would interact in such a way that An, FM, and MOR responses would predict depression in the less cognitively intact subjects. It was found that An and MOR responses were negatively associated with depression only in the more intact subjects. This finding not only contradicts the earlier hypothesis, but also differs from the normative data for younger subjects, wherein An and MOR responses are positively associated with depression (Exner, 1991). Again, the explanation appears to lie in the number of responses found in this particularly restricted population. An and MOR responses were not common and did not reach the clinically significant level found in depressed younger adults. In the protocols of these subjects, An and MOR responses indicated sufficient involvement and resources to provide an overall higher number of responses. FM responses predicted depression in subjects scoring among the lower half of cognitive scores. However, FM responses were not predictive for the least cognitively intact. The predictability for only a narrow range of cognitive levels makes FM an questionable measure of depression.

Rorschach variables R, M and Zf were found to predict cognitive status positively and significantly as hypothesized. This is also true with younger populations (Exner, 1991). R, again, refers to response rate; the more cognitively intact subjects were able to report more perceptions per card. M responses are those involving human movement. They are thought to reflect interest in other people as well as to require higher levels of cognitive ability to perceive (Exner, 1991). Zf reflects the subjects' abilities to organize the inkblots into relational figures which requires additional organization and complexity of perception. Such organizational ability is associated with higher cognitive levels.

Lambda scores were found to correlate with cognitive abilities negatively and significantly. This finding contradicted earlier hypotheses. Lambda scores are derived by comparing the subjects' use of pure form responses to total response rate. A "pure

form" response is one that uses only the shape of the inkblot to determine the answer; color, shading, movement and contour are ignored. To use only the blot's shape is usually interpreted as a simpler response and one that does not require as much cognitive involvement with the stimulus. Higher Lambda scores indicate a greater percentage of these cognitively less complex responses. Exner (1991) writes that Lambda indicates a tendency to avoid the complexities of a stimulus situation and that it is highly situation specific. In the more cognitively intact subjects of this study, their lower Lambda scores may reflect a greater willingness and higher level of resources available to engage in novel and complex tasks such as the Rorschach.

None of the predicted Rorschach variables (Zf, M, FM, m, es, DEPI, CDI) were significantly correlated with drive. This may be a function of methodological factors (such as scoring criteria) or theoretical issues pertaining to the particular population studied.

SUMMARY

This study examined the relationships between depression, cognition and drive, as well their relationships to demographic variables. Additionally, it tested specific Rorschach variables as predictors for depression, cognition and drive. Depression and cognition were found to interact significantly and inversely with each other. Drive was not found to be reliably related to either depression or cognition.

The demographic variables of age, education, number of children and social contact were found to have significant effects on depression and cognition. Prior career predicted drive, although the relationship was not consistent with current theory.

Rorschach variables R, m and Populars were reliable predictors of depression. The Exner Depression Index (DEPI) was also significantly related to depression, but in the direction opposite to it's traditional use; lower DEPI values indicated increased depressive symptoms. Variables R, M, Zf and Lambda were significantly correlated with cognition. None of Rorschach variables tested predicted drive.

The repeated failure to find predictors or correlates of drive, calls into question the applicability of using drive, as rated by the Pine System, for elderly institutionalized populations. It may be that the tested theory was erroneous, but it is also possible that the distribution of drive over the life span is not linear and that its relationship to mood and cognition varies at different developmental stages.

The relationship between depression and cognition found in this study is consistent with that reported for other, younger populations. The direction of the relationship (negative) adds to the importance of assessing and treating depression within the elderly population given its high risk for cognitive impairments.

REFERENCES

Ames, L. B. (1974) Calibration of aging. Journal of Personality Assessment, 38, 507-519.

Ames, L. B., Learned, J., Metraux, R. W., & Walker, R. N. (1973). Rorschach Responses in Old Age. New York: Brunner/Mazel.

Beck, A. T. (1974). The development of depression: A cognitive model. Friedman, R. S., & Katz, M. M. (Eds.), The Psychology of Depression: Contemporary Theory and Research. New York: John Wiley & Sons.

Bellak, L. (1986). The TAT, CAT, and SAT in clinical use (4th ed.). New York: Grune & Stratton.

Birren, J. E., & Sloane, R. (1980). Handbook of Mental Health and Aging, Englewood Cliffs, NJ: Prentice-Hall

Brammer, L. (1984). Counseling theory and the older adult. Counseling Psychologist, 12(2), 29-37.

Brink, T. L., Yesavage, J., Lum, O., Heersema, P. H., Adey, M., & Rose, T. L. (1982). Screening tests for geriatric depression. Clinical Gerontology, 10, 37-44.

Burke, W. J., Houston, M. J., Boust, S. J., & Roccaforte, W. H. (1989). Use of the Geriatric Depression Scale in dementia of the Alzheimer type. Journal of American Geriatrics Society, 37(9), 856-860.

Caldwell, B. McD. (1954). The use of the Rorschach in personality research with the aged. Journal of Gerontology, 9, 316-323.

Costa, P. T., & McCrae, R. R. (1986) Age, personality, and the Holtzman Inkblot Technique. International Journal of Aging and Human Development, 23, 115-125.

Derogatis, L. R. (1977). The SCL-90 manual I: Scoring,administration and procedures for the SCL-90. Baltimore, MD: John Hopkins University School of Medicine.

Derogatis, L. R., & Spencer, P. M. (1983). BSI Manual I: Administration and Procedures. Baltimore, MD: Johns Hopkins University School of Medicine, Clinical Psychometrics Unit.

Dietzel, C. S., & Abeles, N. (1971). Thematic drive expression and self-esteem. Journal of Personality Assessment, 35(5), 442-447.

Eisdorfer, C. (1960). Rorschach rigidity and sensory decrement in a senescent population. Journal of Gerontology, 15, 188-190.

Elias, M. F. & Elias, P. K. (1977). Motivation and activity. In Handbook of Mental Health and Aging, eds. J. E. Birren and R. B. Sloane. 357-378 Englewood-Cliffs, NJ: Prentice-Hall.

Exner, J. E. (1991). The Rorschach: A Comprehensive System, Volume 2: Interpretation, (Second Edition). New York: Wilely-Interscience.

Folstein, M. F., Folstein, S. E., & McHugh, P. R. (1975). Mini-mental state: A practical method for grading the cognitive state of patients for the clinician. Journal of Psychiatric Research, 12, 189-198.

Freud, S. (1924). On Psychotherapy. Collected Papers (Vol. 1), London: Hogarth Press.

Gerner, R. H. (1979). Depression in the elderly. In O. J. Kaplan, Psychopathology of aging. pp. 97-148. NY: Academic Press.

Gross, A., Newton, R. R., & Brooks, R. B. (1990). Rorschach responses in healthy, community dwelling older adults. Journal of Personality Assessment, 5(1 & 2), 335-343.

Hagestad, G. O. (1987). Able elderly in the family context: Changes, chances, and challenges. The Gerontological Society of America, 27(4), 417-422.

Hale, W. D., Cochran, C. D., & Hedgepeth, B. E. (1984). Norms for the elderly on the Brief Symptom Inventory. Journal of Clinical and Consulting Psychology, 52(2), 321-322.

Hale, W. D., and Strickland, B. R. (1976). Induction of mood states and their effect on cognitive and social behaviors. Journal of Consulting and Clinical Psychology, 44, 155.

Hamilton, M. (1960). A rating scale for depression. Journal of Neurology, Neurosurgery and Psychiatry, 23, 56-62.

Hansell, A. G., Lerner, H. D., Milden, R. S., Ludolph, P. S. (1988). Single-sign Rorschach suicide indicators: A validity study using a depressed inpatient population. Journal of Personality Assessment, 52(4), 658-669.

Havighurst, R. J. (1963). Successful aging. In R. H. Williams, C. T. Bitts, & W. Donahue, (Eds.), Processes of Aging, NY: Atherton Press.

Hayslip, B., & Lowman, R. L. (1986). The clinical use of projective techniques with the aged: A critical review and synthesis. Clinical Gerontologist, 5(1/2), 63-93.

Heidell, E. D., Kidd, A. H. (1975). Depression and senility. Journal of Clinical Psychology, 31, 643-645.

Henderson, A. S. (1989). Psychiatric epidemiology and the elderly. International Journal of Geriatric Psychiatry, 4(5), 249-253.

Henry, W. E. (1965). Engagement and disengagement: Toward a theory of adult development. In R. Kastenbaum, (Ed.), Contributions to the Psychobiology of Aging, NY: Springer.

Hickie, C., Snowdon, J. (1987). Depression scales for the elderly: GDS, Gilleard, Zung. Clinical Gerontologist, 6(3), 51-52.

Hiroto, D. S. (1974). Locus of control and learned helplessness. Journal of Experimental Psychology. 102, 187-193.

Holzer, C. E., Tischler, G. L., Leaf, P. J., & Myers, J. K. (1984). Community cognitive impairment. In Greenley, J. R. (Ed.), Research in Community and Mental Health, London: JAI Press.

Insua, A. M., & Loza, S. M. (1986). Psychometric patterns on the Rorschach of healthy elderly persons and patients with suspected dementia. Perceptual and Motor Skills, 1986, 63, 931-936.

Kahana, B. (1978). The use of projective techniques in personality assessment of the aged. In M. Storandt, I. C. Siegler, & M. F. Elias (Eds.), The clinical psychology of aging (pp. 145-180). New York: Plenum.

Kastenbaum, R. (1978). Personality theory, therapeutic approaches, and the elderly client. In M. Storandt, I. Siegler, & M. Elias (Eds.), The clinical psychology of aging. New York: Plenum.

Kiernan, B. U., Wilson, D., Suter, N., Naqvi, A., Moltzen, J., Silver, G. (1986). Comparison of the Geriatric Depression Scale and Beck Depression Inventory in a nursing home setting. Clinical Gerontologist, 6(1), 54-56.

Klopfer, W. G. (1974). The Rorschach and old age. Journal of Personality Assessment, 38(5), 420-422.

Lawton, M.P., Whelihan, W. M., & Belsky, J. M. (1980). Personality tests and their uses with older adults. In Handbook of Mental Health and Aging, eds. J. E. Birren and R. B. Sloane. 537-553 Englewood-Cliffs, NJ: Prentice-Hall.

Levenson, S. A. (1987). Innovations in nursing home care. Generations, 12(1), 74-79.

Libow, 1981. Geriatric medicine and the nursing home: A mechanism for mutual excellence. The Gerontologist, 22, 134-136.

Mandel, B., Last, U., Belmaker, R. H., & Rosenbaum, M. (1984). Rorschach indicators in euthymic manic-depressive illness. Neuropsychobiology, 12, 96-100.

Mattlar, C. E., Knuts, L. R., & Virtanen, E. (1985). Personality structure on the Rorschach for a group of healthy 71-year old females and males. Projective Psychology, 30(1), 3-8.

Miller, N. E. (1980). The measurement of mood in senile brain disease: Examiner ratings and self reports. In J. O. Cole & J. E. Barrett (Eds.), Psychopathology in the Aged. New York: Raven Press.

Miller, W. R. (1975). Psychological deficit in depression. Psychological Bulletin, 32, 238-260.

Myers, J. M., Sheldon, D., & Robinson, S. S. (1963). A study of 138 elderly first admissions. American Journal of Psychiatry, 120, 224-249.

Myers, J. K., Weissman, M. M., Tischler, G. L., Holzer, C. E., Leaf, P. J. Ovaschel, H., Anthony, J. C., Boyd, J. H., Burke, J. D., Kramer, M., & Stoltzman, R. (1984). Six-month prevalence of psychiatric disorders in three communities: 1980-1982. Archives of General Psychiatry, 41, 959-967.

Orme, J. E. (1955). Intellectual and Rorschach test performances of a group of senile dementia patients and a group of elderly depressives. Journal of Mental Science, 202, 863-870.

Panek, P. E., Wagner, E. E., & Kennedy-Zwergel, K. (1983). A review of projective test findings with older adults. Journal of Personality Assessment, 47(6), 562-582.

Parmelee, P. A., & Lawton, M. P. (1989). Psychometric properties of the Geriatric Depression Scale among the institutionalized aged. Psychological Assessment, 1(4), 331-338.

Paul, M. E., & Duckworth, J. C. (1987). Geriatric normative data for the Rorschach Inkblot Test. Paper presented at the Midwestern Psychological Association, 5/8/1987.

Pine, F. (1960). A manual for rating drive content in the Thematic Apperception Test. Journal of Projective Techniques, 24, 32-45.

Piotrowski, C., Sherry, D. G., & Keller, J. W. (1985). Psychodiagnostic test usage: a survey of the Society for Personality Assessment. Journal of Personality Assessment, 49, 115-119.

Piotrowski, Z. A., & Berg, D. A. (1955). Verification of the Rorschach Alpha diagnostic formula for underactive schizophrenics. American Journal of Psychiatry, 112, 443-450.

Prados, M., & Fried, E. G. (1947). Personality structure in the older groups. Journal of Clinical Psychology, 3(2), 113-120.

Reichlin, R. E. (1984). Current perspectives on Rorschach performance among older adults. Journal of Personality Assessment, 48, 71-81.

Reifler, B. V., Larson, E., & Hanley, R. (1982). Coexistence of cognitive impairment and depression in geriatric outpatients. American Journal of Psychiatry, 139(5), 623-626.

Rorschach, H. (1942). Psychodiagnostics. New York: Grune & Stratton.

Rosen, J. & Neugarten, B. (1960). Ego functions in middle and later years. Journal of Gerontology, 15, 62-67.

Rubenstein, E. A. (1991). The not so golden years. Newsweek, Oct. 8, 13.

Ryan, J. J. (1983). Clinical reliability of a WAIS-R short form. Journal of Clinical Psychology. 39(2), 261-262.

Ryan, J. J., Paolo, A. M., & Brungradt, T. M. (1990). WAIS-R reliability and standard errors for persons 75 to 79, 80 to 84, and 85 and older. Journal of Psycho-educational Assessment, 8(1), 9-14.

Sadavoy, J. (1984). A review of psuedodementia. Modern Medicine, 39(3), 319-322.

Sadavoy, J., Smith, I., Conn, D. K., & Richards, B. (1990). Depression in geriatric patients with chronic medical illness. International Journal of Geriatric Psychiatry, 5, 187-192.

Salzman, C. & Gutfreund, M. J. (1987). Clinical techniques and research strategies for studying depression and memory. In L. W. Poon (Ed.), Handbook for Clinical Memory Assessment of Older Adults. Washington, D. C.: APA Press.

Scogin, F. (1987). The concurrent validity of the geriatric depression scale with depressed older adults. Clinical Gerontologist, 7(1), 23-31.

Seligman, M. E. P. (1971). Depression and learned helplessness. Friedman, R. S., & Katz, M. M. (Eds.), The Psychology of Depression: Contemporary Theory and Research. New York: John Wiley & Sons.

Shimonaka, Y. & Nakazato, K. (1991). Aging and terminal changes in Rorschach responses among the Japanese elderly. Journal of Personality Assessment, 57(1), 10-18.

Stenback, A. (1980). Depression and suicidal behavior in old age. In Handbook of Mental Health and Aging, eds. J. E. Birren and R. Sloane. 616-652. Englewood-Cliffs, NJ: Prentice-Hall.

Storandt, M., Botwinick, J., Danziger, W. L., Berg, L., & Hughes, C. P. (1984). Psychometric differentiation of mild dementia of the Alzheimer's type. Archives of Neurology, 41, 497-499.

Tamkin, A. S. & Hyer, L. A. (1983). Defensiveness in psychiatric elderly persons: Fact or fiction. Psychological Reports, 52, 455-458.

TGEC, 1993. Nursing Home Care: Trends and Changes for the 21rst Century. Texas Geriatric Education Consortium, 12, 4-5.

Thomae, H. (1980). Personality and adjustment to aging. In Handbook of Mental Health and Aging, eds. J. E. Birren and R. B. Sloane. 285-309 Englewood-Cliffs, NJ: Prentice-Hall.

Wechsler, D. & Stone, C. P. (1983). Manual: Wechsler Memory Scale. New York: Psychological Corporation.

Weingartner, H., & Silberman, E. (1982). Models of cognitive impairment: Cognitive changes in depression. Psychopharmacological Bulletin, 181, 27-42.

Wells, C. E. (1979). Psuedodementia. American Journal of Psychiatry, 136, 895.

Wigdor, B. T. (1980). Drives and motivations with aging. In Handbook of Mental Health and Aging, eds. J. E. Birren and R. B. Sloane. 245-261 Englewood-Cliffs, NJ: Prentice-Hall.

Yesavage, J. A., Brink, T. L., Rose, T. L., and Adey, M. A. (1983). The Geriatric Depression Rating Scale: Comparison with other self-report and psychiatric rating scales. In T. Crook, S. Ferris, & R. Bartus (Eds.), Assessment in geriatric psychopharmacology (pp. 145-152). New Canaan, CT: Mark Powley.

Yesavage, J. A., Brink, T. L., Rose, T. L., Lum, O., Huang, V., Adey, M., & Leirer, V.O., (1983). Development and validation of a geriatric depression screening scale: A preliminary report. Journal of Psychiatric Research, 17(1), 31-49.

APPENDIX A: CONSENT FORM

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MICHIGAN STATE UNIVERSITY
Department of Psychology

RESEARCH CONSENT FORM

Before participating in any research, subjects must be informed of their rights. In signing this paper, you are acknowledging that the experimenter has explained your rights to you.

1. You are under no obligation to participate in this study; you may refuse to answer any of the tests or any of the experimenter's questions. Even if you agree to participate now, you may change your mind at any point.

2. This study will take about three hours of your time. If you become tired or want to stop, you may tell the experimenter and she will return later at a time you have agreed to.

3. Your answers will be assigned a code number. No one else will know what you answered or even that you participated unless you tell them yourself.

4. If you wish, the experimenter will explain the study and the tests afterwards.

5. This study uses volunteers; you will receive no money for participating.

6. This study is being conducted by Brenda Mayne, M.A. and Lidia Domitrovic under the supervision of Dr. Norman Abeles at the Michigan State University Aging Project. The tests being given are common psychological tests. By participating you are helping psychologists to understand what happens as people grow older and what kinds of tests might work best with mature adults.

Signed: _____

Date: _____

Witness: _____

Date: _____

TITLE OF PROJECT: COGNITION, PERCEPTION AND DRIVE QUALITY IN NURSING HOME RESIDENTS

APPENDIX B: DIAGNOSES AND MEDICATIONS

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Medical Diagnoses

Anemia

Arterial Fibrillation

Arthritis

Back Spasms

Carpal Tunnel Syndrome

Cataracts

Cellulitis

Cerebral Vascular Accidents

Chronic Heart Fatigue

Chronic Obstructive Pulmonary Disease

Constipation

Coronary Artery Disease

Degenerative Joint Disease

Dementia

Diabetes

Diverticulitis

Hip Fracture

Hypertension

Hyperthyroidism

Lacunar Infarcts

Lumbar Fracture

Nephroectomy

Parkinson's Disease

Retinopathy secondary to Diabetes

Transient Ischemic Attacks

Vascular Disorder

Urinary Tract Infection

Psychiatric Diagnoses

Anxiety Disorder

Depression

Paranoid Personality Disorder

Medications

Antivert

Aspirin

Axid

Bisacodyl

Bumex

Calan

Capoten

Cardizem

Clonidine

Codiene

Coumadin

Darvocet

Docusate

Donnatel

Doxycycline

Insulin

Isadel

Isoptin

Isosorbide

K-Dur

Lanoxeicaps

Lasix

Mylanta

Oxybutynin

Perdiem

Pericolace

Prazosin

Procardia

Prozak

Quinaghute

Robitussin

Seldane

Synthroid

Tagamet

Tenormin

Trental

Trilisate

Tylenol

Voltaren

Urecholine

Wygesic

APPENDIX C: DESCRIPTIVE STATISTICS FOR RORSCHACH RESPONSES

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(N = 100)

Variable	Mean	SD	Minimum	Maximum	Frequency	Skewness	Kurtosis
Age	80.35	47.18	67.000	103.000	100	-0.193	-0.068
Education	11.10	1.97	8.000	16.000	100	-0.593	-0.667
R	14.58	3.91	6.000	22.000	1,458	-0.355	0.715
W	7.49	4.19	2.000	15.000	749	0.440	-0.733
Wv	1.68	2.85	0.000	8.000	168	1.664	1.039
D	5.48	3.61	2.000	12.000	548	1.026	-0.544
Dd	0.81	1.17	0.000	4.000	81	1.897	2.765
S	0.78	0.77	0.000	2.000	78	0.398	-1.214
DQ+	3.47	3.16	0.000	9.000	347	0.702	-1.166
DQo	9.29	5.06	4.000	19.000	929	0.658	-0.896
DQv	0.92	1.13	0.000	3.000	92	0.825	-0.823
DQv/+	0.90	1.82	0.000	5.000	90	1.758	1.222
FQX+	0.07	0.70	0.000	7.000	7	9.849	95.010
FQXo	6.71	3.32	3.000	15.000	671	1.244	1.350
FQXu	1.91	1.04	1.000	4 .000	191	0.713	-0.842
FQX-	5.44	2.32	1.000	8.000	544	-0.707	-0.774
FQXNone	0.54	0.89	0.000	2.000	54	1.036	-0.926
MQ+	0.00	0.00	0.000	0.000	0	0.000	0.000
MQo	0.60	1.02	0.000	3.000	60	1.426	0.509
MQu	0.11	0.31	0.000	1.000	11	2.493	4.215
MQ-	0.70	1.01	0.000	3.000	7	1.218	0.166
MQNone	0.00	0.00	0.000	0.000	0	0.000	0.000
SQ+	0.00	0.00	0.000	0.000	0	0.000	0.000
SQo	0.57	0.49	0.000	1.000	57	-0.283	-1.920
SQu	0.00	0.00	0.000	0.000	0	0.000	0.000
SQ-	0.21	0.41	0.000	0.000	21	1.424	0.028
SQNone	0.00	0.00	0.000	1.000	0	0.000	0.000
M	1.41	1.56	0.000	4.000	141	0.733	-1.092
FM	3.05	1.98	0.000	8.000	305	-0.031	-0.866
m	0.37	0.48	0.000	1.000	37	0.539	-1.710
FM+m	4.46	2.85	0.000	9.000	100	-0.125	-1.075
FC	0.82	1.09	0.000	3.000	82	0.837	-0.849
CF	0.73	1.01	0.000	3.000	73	1.144	0.004
C	1.48	2.09	0.000	6.000	148	1.494	0.708
Cn	0.32	0.74	0.000	2.000	32	1.855	1.440
FC'	0.00	0.00	0.000	0.000	0	0.000	0.000
CF'	0.32	0.74	0.000	2.000	32	1.855	1.440
FC+CF							
Cn+	3.35	2.75	0.000	8.000	100	0.457	-1.061
WGSum	3.36	2.99	0.000	9.000	100	0.748	-0.522
Sum C'	0.52	0.76	0.000	2.000	100	1.049	-0.457
Sum T	0.69	0.94	0.000	3.000	100	1.460	1.263
Sum V	0.00	0.00	0.000	0.000	100	0.000	0.000
Sum Y	0.00	0.00	0.000	0.000	100	0.000	0.000
SumShd	1.21	1.41	0.000	4.000	100	0.864	-0.742
Fr+rF	0.00	0.00	0.000	0.000	100	0.000	0.000

Variable	Mean	SD	Minimum	Maximum	Frequency	Skewness	Kurtosis
FD	0.88	1.46	0.000	5.000	88	2.145	3.451
F	6.11	3.33	1.000	12.000	611	-0.042	-0.699
PAIR	5.68	3.14	0.000	10.000	568	-0.206	-1.070
3r(2)/R	0.41	0.22	0.000	0.769	100	-0.032	-0.637
Lambda	1.07	1.53	0.083	11.000	100	5.512	33.272
EA	4.77	3.23	0.000	9.500	100	0.389	-1.528
es	5.67	2.91	1.000	12.000	100	0.381	-1.201
D	-0.07	1.14	-2.000	2.000	100	0.426	-0.175
AdjD	-0.07	1.14	-2.000	2.000	100	0.426	-0.175
a (active)	3.72	2.55	0.000	9.000	372	-0.014	-0.968
p (passive)	1.01	0.64	0.000	2.000	101	-0.009	-0.561
Ma	1.21	1.47	0.000	4.000	121	0.779	-1.010
Mp	0.20	0.40	0.000	1.000	20	1.500	0.250
Intellect	1.21	1.51	0.000	5.000	100	0.942	-0.482
Zf	4.19	2.14	0.000	8.000	100	0.522	-0.934
Zd	-0.11	4.81	-7.000	10.000	100	0.729	-0.187
Blends	3.34	2.94	0.000	9.000	334	0.461	-0.187
Afr	0.56	0.22	0.000	0.833	100	-1.285	1.233
Popular	4.24	1.96	1.000	7.000	424	-0.501	-0.901
X+%	0.45	0.13	0.231	0.875	100	0.269	0.337
F+%	0.59	0.26	0.333	1.000	100	0.516	-1.327
X-%	0.38	0.16	0.071	0.615	100	-0.489	-0.496
Xu%	0.14	0.07	0.059	0.286	100	0.878	-0.308
S-%	0.04	0.08	0.000	0.250	100	1.722	1.348
Isolate	0.25	0.15	0.000	0.538	100	0.235	-0.289
H	1.37	1.52	0.000	5.000	137	1.260	0.662
(H)	0.33	0.65	0.000	2.000	33	1.746	1.585
Hd	0.11	0.31	0.000	1.000	11	2.493	4.215
(Hd)	0.00	0.00	0.000	0.000	0	0.000	0.000
Hx	0.04	0.24	0.000	2.000	4	6.585	45.253
All H Cont	1.81	1.85	0.000	5.000	170	0.750	-0.883
A	8.61	3.46	0.000	15.000	861	-0.400	0.366
(A)	0.12	0.33	0.000	1.000	12	2.339	3.470
Ad	0.75	1.31	0.000	4.000	75	1.652	1.367
(Ad)	0.01	0.10	0.000	1.000	1	9.849	95.010
An	0.58	1.10	0.000	3.000	58	1.614	0.848
Art	0.02	0.14	0.000	1.000	2	6.857	45.020
Ay	0.31	0.65	0.000	2.000	31	1.860	1.950
Bl	0.10	0.32	0.000	1.000	10	2.667	5.111
Bt	2.03	2.27	0.000	7.000	203	1.017	-0.115
Cg	0.41	0.67	0.000	2.000	41	1.353	0.503
Cl	0.00	0.00	0.000	0.000	0	0.000	0.000
Ex	0.00	0.00	0.000	0.000	0	0.000	0.000
Fi	0.20	0.60	0.000	2.000	20	2.667	5.111
Fd	0.88	1.46	0.000	5.000	88	2.145	3.451
Ge	0.01	0.10	0.000	1.000	1	9.849	95.010
Hh	1.04	1.05	0.000	1.000	16	1.855	1.440
Na	0.62	0.87	0.000	2.000	62	0.816	-1.179
Sc	0.74	1.02	0.000	3.000	74	1.109	-0.105
Sx	0.20	0.60	0.000	2.000	20	2.667	5.111

Variable	Mean	SD	Minimum	Maximum	Frequency	Skewness	Kurtosis
Xy	0.18	0.59	0.000	3.000	18	3.447	11.258
Idio	0.20	0.60	0.000	2.000	20	2.667	5.111
Xy	0.18	0.59	0.000	3.000	18	3.447	11.258
Responses on							
Card I	1.96	0.76	0.000	3.000	196	0.067	-1.269
II	1.34	0.66	1.000	3.000	134	1.692	1.420
III	1.41	0.92	1.000	4.000	141	2.208	3.339
IV	1.47	0.67	1.000	3.000	147	1.106	-0.025
V	1.10	0.54	1.000	2.000	110	0.077	0.302
VI	1.10	0.30	1.000	2.000	110	2.667	5.111
VII	1.37	0.48	1.000	2.000	137	0.539	-1.710
VIII	1.38	0.83	0.000	3.000	138	0.279	-0.418
IX	0.90	0.30	0.000	1.000	90	-2.667	5.111
X	2.45	1.18	0.000	4.000	245	-0.670	-0.365
DV1	0.49	0.52	0.000	2.000	49	0.254	-1.438
DV2	0.11	0.31	0.000	1.000	11	2.493	4.215
INC1	0.47	0.50	0.000	1.000	47	0.120	-1.986
INC2	0.20	0.40	0.000	1.000	20	1.500	0.250
DR1	0.02	0.20	0.000	2.000	2	9.849	95.010
DR2	0.16	0.37	0.000	1.000	16	1.855	1.440
FABCOM	10.32	0.47	0.000	1.000	32	0.772	-1.404
FABCOM	20.21	0.41	0.000	1.000	21	1.424	0.028
ALOG	0.67	0.65	0.000	2.000	67	0.449	-0.715
CONTAM	0.10	0.30	0.000	1.000	10	2.667	5.111
Sum6SpSc	12.75	1.56	0.000	7.000	100	-0.491	-0.805
Sum6SpSc	20.68	0.47	0.000	1.000	100	-0.772	-1.404
WSum6	10.27	6.21	0.000	21.000	100	-0.368	-1.113
AB	0.44	0.77	0.000	2.000	44	1.338	0.036
AG	0.77	1.35	0.000	7.000	77	2.292	5.099
CFB	0.15	0.58	0.000	5.000	15	6.399	49.078
COP	0.32	0.66	0.000	2.000	32	1.821	1.731
CP	0.00	0.00	0.000	0.000	0	0.000	0.000
MOR	1.51	1.41	0.000	5.000	151	0.652	-0.596
PER	0.72	1.25	0.000	4.000	72	1.921	2.439
PSV	1.24	1.80	0.000	6.000	124	1.713	2.071
DEPI	3.40	0.82	2.000	5.000	100	0.380	-0.350
CDI	3.42	1.16	1.000	5.000	100	-0.441	-0.529