



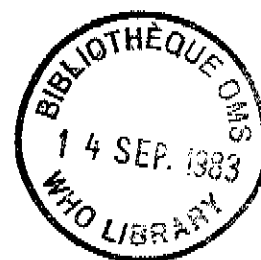
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CLINICAL ASSESSMENT INSTRUMENTS IN DEMENTIA

By

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The purpose of this paper is to provide the clinician with a catalogue of selected instruments of established usefulness in clinical work with demented elderly. The instruments are categorized in 4 sections that follow the relevant steps of decision-making and management commonly taken with these cases. These are:

- (i) to establish the dementing nature of an intellectual impairment: Section 1 of this paper is a guide to instruments with reported success in differentiating dementia from functional disorders and/or from normal senescence.
- (ii) to determine whenever possible the type of dementia: Section 2 discusses instruments with a verified potential as diagnostic aids for classifying demented patients as multi-infarct, or Alzheimer type or Pick's cases.
- (iii) to grade the severity of the condition and the need for care: in Section 3 the methods capable of measuring the severity of intellectual impairment and detecting changes in this realm are reviewed.
- (iv) to monitor the behaviour and institutional adjustment of the demented: Section 4 introduces the major ward behaviour rating systems used with the elderly.

A fifth section is devoted to the multidimensional instruments which cover comprehensively most or all the above dimensions.

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Section 1 - Assessing the organicity of an intellectual impairment

Different approaches are proposed to distinguish between dementing and non-dementing cognitively impaired elderly: the most widely used approach relies on design copying and stems from the observation that "organics" usually fail to copy or correctly reproduce from memory simple forms that are presented to them. Other frequently used tests of organicity are the learning/memory tests a field in which patients with dementia tend to do badly. Verbal tests have also been proposed to elicit organic brain syndromes, as speech disturbances of dementia are not usually observed in functional disorders. Other tests explore disturbance of somato-gnosia, a characteristic feature of dementia. It is not rare to see several single tests of the above dimensions combined in a battery of tests in an attempt to increase their discriminatory power. Finally, psychopathological rating scales have also been used for differentiating between demented and non demented elderly subjects. Main examples of each of these approaches are described in this section.

Design Copying Tests

Bender Gestalt Visual Motor Test (Bender, 1952)

This test assesses cognitive functioning in terms of figure reproduction from memory. It consists of 9 designs that are presented singly to the testee who is allowed unlimited time to complete drawings. Usually the examination lasts between 5 and 10 minutes.

This widely used test has demonstrated effectiveness in distinguishing organic impairment from psychiatric disturbance (De Wolf, 1971). Being easy to administer the test is particularly useful for deteriorated patients to whom a whole battery is difficult to take. A "background interference procedure" to increase the sensitivity of the Bender Gestalt Test to organic brain syndrome has been proposed (Canter, 1966).

Graham Kendall Memory for Designs Test (MDF) (Graham, 1960)

The memory for designs test is one of the more commonly used tests of organicity. It is another visuomotor test that asks the subject to reproduce designs of increasing complexity after viewing each for 5 seconds.

Kendall (1962), found that older persons in the seventh and eighth decade of life, suffering brain damage, did significantly worse than intact subjects.

Revised Visual Retention Test (RVRT) (Benton, 1963)

The RVRT requires subjects to copy figures from memory after 10 and 5 seconds exposure. Brain damage is negatively associated with performance. While there was no age-related decline on the test between 80-90 years external factors such as hospitalization were reported to affect performance (Klonoff, 1965-1966).

Minnesota Percepto-Diagnostic Test (MP-DT) (Fuller, 1963)

This test involving both visual recall and graphic reproduction relies on rotational errors in design copying as a measure of brain damage. It has been reported to discriminate between brain damaged and other patient and non patient groups (Uyeno, 1963).

In one study however (Burguess, 1970) the MP-DT did not discriminate neurologically impaired from psychiatric patients who were unsuspected of organic involvement.

Screen for Organic Brain Disease in Emergency Psychiatric Evaluation (Nahor, 1970)

This test which also relies on the patient's capacity to copy geometric drawings was described as useful in detecting organicity. It particularly differentiate between organic brain syndrome and neurosis or functional psychosis.

Learning/Memory Tests

Walton and Black Test (Walton, 1957)

In this test the subject is taught by a standard procedure the meanings of ten words that he has been unable to define. The criterion of a successful performance is that the subject is able to give the meanings of any six of the ten words.

The test is reported to correctly discriminate a high proportion of functional disorder cases although it seems less accurate in classifying those with brain disease.

Inglis Paired Associate Learning Test (Inglis, 1959)

This test requires the subject to learn three pairs of unrelated words. It was found to give a good level of discrimination between elderly patients with and without clinical signs of dementia.

Verbal Tests

Set Test (Isaacs, 1973)

In this test the subject is asked to name as many items as possible (up to 10) in each of 4 categories, colours, animals, fruits and towns. The subject is given 1 point for each correct answer up to a maximum of 40 points.

According to a study of Isaacs and Kennie (1973), a number of persons who scored under 15 points had been independently diagnosed as suffering from dementia. None of the subjects scoring 25 points or more had received a diagnosis of dementia.

The authors noted however that physical illness may also be associated with low score.

Stroop Colour-Word Test (Stroop, 1935)

This test which studies the interference with verbal reactions asks the subject to read names of colours which are printed in ink different from that spelled by the letters.

The test was found useful in early detection of organic impairment in the aged (Comalli, 1965); this was later confirmed by a comparative study of different age groups in which poorer performance was found in the older subjects with, however, the poorest performance in subjects with organic brain syndromes (Bettner, 1971).

Somatognosia Test

Face Hand Test (FHT) (Fink, 1952)

It consists of a double simultaneous tactile stimulation which the subject is requested to locate with his eyes closed. It is widely used as a gross measure of organic impairment. While it may miss mild brain damage it is not likely to yield false positives. Once accustomed to the test procedure most subjects perform normally regardless of their affective state, while brain damaged patients seem unable to retain their sense of bodily orientation when stimulated on two non symmetrical parts simultaneously (e.g. right cheek, left hand).

On the basis of the FHT Bender and Fink (1952) were able to discriminate adult psychiatric patients from those with massive brain lesions and accompanying behaviour deficit. The psychiatric patients performed like normal intact adults. The FHT has been included in the Geriatric Mental Status (Copeland, 1976a) described under the psychopathological scales in this section.

Battery Tests

Kew Cognitive Map (McDonald, 1969)

This is a battery of 5 sub-tests developed in the Kew chronic geriatric mental hospital in Victoria. It includes items on memory, parietal lobe function, aphasia, abstraction, and colour-form sorting test of Weigl-Goldstein-Scheerer. Using this battery the authors were able to separate "true" senile dementia cases observed in a younger group age and carrying a bad six month prognosis, from a group of "benign memory dysfunction" manifesting itself in an older age group and carrying a very much better prognosis. The second group differed mainly by a preserved parietal lobe function.

A modification of the Kew Cognitive Map has been more recently proposed by Marjorie Hare (Hare, 1978) to differentiate patients with true dementia and satisfactorily predict their outcome.

Revised Kendrick Battery (Kendrick, 1979)

This battery combines a memory/learning test, the Object Learning Test (OLT) with a simple test of motor speed, the Digit Copying Test (DCT). The OLT requires the subject to recall various familiar objects shown to him over four cards. The Revised Kendrick Battery has been shown to discriminate between elderly dementing and non-dementing subjects and also between normal, depressed and dementing elderly subjects.

Psychopathological Scales

Sandoz Clinical Assessment Geriatric Scale (SCAG) (Shader, 1974)

This scale was originally developed for the differentiation between early senile deterioration and depressive disorders. It is intended mainly for psychopharmacological studies with the elderly. It covers 18 symptoms areas relevant to senile dementia and depressive states rated on a 7-point format and dealing with mood, cognition, motivation and initiative, sociability and cooperativeness, self-care, and physical symptoms. According to the authors a good discrimination was obtained with the SCAG between depressed and demented inpatients.

Geriatric Mental State Interview (GMS) (Copeland, 1976a)

The GMS has been shown to effectively discriminate patients with organic brain symptoms from those with functional psychiatric disorders (Fleiss 1976). This instrument is a development of the Present Status Examination (PSE) (Wing 1974) and the Mental Status Schedule (MSS) (Spitzer, 1964). It is a semi-structured interview guide and an inventory of items constructed for eliciting and recording psychopathology in elderly psychiatric patients. Nearly 500 items are scored on the basis of information obtained by a highly trained interviewer during a less than a hour single session.

The GMS has been used in field surveys among the older population (Gurland, 1977-78) and, as a part of US/UK diagnostic comparison project (Copeland 1976b) was administered to hospitalized patients. Good agreements were found between raters on six main diagnostic categories of psychiatric disorders in old age.

Discussion

Cognitive tests can provide firm indications on the organic nature of a function impairment, however, little, if anything, is known about the implications in everyday life of deficits elicited by such formal test. Obviously, a failure in design copying cannot be used alone to establish the diagnosis of dementia.

Structured psychopathological scales which explore a wide range of intellectual, affective and behavioural performances should be, in the authors' opinion, preferred whenever a fine differential diagnosis is needed. The Geriatric Mental Status (GMS) that combines standardized cogni-

tive assessments with psychiatric ratings, is a good example of the approach to be considered in the future development of instruments more focussed on dementia.

Section 2 - Assessing the Type of Dementia

The distinction between the different clinical forms of dementia is more than a mere academic exercise, for there are good grounds to expect that in the near future these various morbid entities will become the object of specific therapeutic interventions the success of which will depend on the adequate selection of the patients liable to benefit of them. The methods proposed for differential diagnosis of the main clinical forms of dementia.

The Ischemic Score (Hachinsky, 1975)

This rating scale is a summary of statements about the characteristic features described in the literature as associated with vascular type dementia, namely: abrupt onset, stepwise deterioration, fluctuating course, nocturnal confusion, relative preservation of personality, depression, somatic complaints, emotional incontinence, history of stroke, hypertension, associated signs of arteriosclerosis and focal neurological signs and focal neurological symptoms. The underlined features were arbitrarily given a score of 2 while the other were rated 1. The higher is the score the greater is the probability of ischemic dementia.

The authors published data on the measurement of cerebral blood flow of demented patients; those who were classified in that study as "vascular" on the basis of the ischemic score (patients scoring 7 and above) seemed to actually belong to a specific subgroup in which blood flow and oxygen consumption were lower than in the other demented patients. The ischemic score was further validated in a computerized tomography study (Loeb, 1980).

Rating Scale for the Diagnosis of Alzheimer's Disease; (Gustafson, 1982)

This is a system developed for the systematic rating of 12 clinical features, characteristic of Alzheimer's disease, chosen in accordance with the literature. Each item has been weighed (i.e. given a score of 1 or 2) according to its correlation with the scale. The features and their respective scores are the following: slow progression (1), early loss of insight (2), early amnesia for remote events (2), early spatial disorientation (2), apraxia-agnosia-aphasia (2), logoclonia (2), logorrhea (1), progressive reduction of speech spontaneity (1), epileptic seizure of late onset (1), increased muscular tension (2), myoclonic twitchings (1), and Klüver-Bucy syndrome (1). In a validation study the authors found that while all multiple infarct dementia cases scored extremely low on this scale (below 2), all postmortem verified cases of Alzheimer's disease scored 5.5 and above.

Rating Scale for Diagnosis of Pick's Disease (Gustafson, 1982)

This scale (developed by the same authors than the one above) have five items in common with the Alzheimer's disease scale, namely slow progression, early loss of insight, logorrhea, progressive reduction of spontaneity of speech and Klüver-Bucy syndrome; to these, four other features considered to be characteristic of Pick's disease (which are: early signs of disinhibition, irritability-dysphoria, confabulation and Echolalia-mutism-amimia) have been added.

In the validation study the authors reported all six cases, with an anatomopathological confirmed diagnosis of Pick's disease, to fall above a cutting point at score 5 on this scale. Three degenerative cases not diagnosed as pick's disease were however also found in the high score group; all Multi-infarct dementia and mixed diagnosis cases scored low, and most Alzheimer's disease cases fell into an intermediate scoring group.

Wechsler Adult Intelligence Scale (WAIS) (Wechsler, 1955)

In addition to the total I.Q. score the WAIS provides subtests scores divided in: verbal scores (information, comprehension, arithmetic, similarities, digit span, vocabulary and total), and performance scores (digit symbols, picture completion, block design, picture arrangement,

object assembly and total). Significant differences were found in the patterns of these subtests scores between patients with dementia due to vertebro-basilar insufficiency and multi-infarcts vs. patients with dementia of the Alzheimer's type. The group of the Alzheimer's type performed significantly and consistently lower on all measures, while there were no significant differences between the two cerebrovascular disease groups, (Perez, 1975). Other authors also reported scatters of subtest scores associated with different profiles of brain damage (Harenstein, 1971; Crooks, 1974).

Discussion

Diagnostic methods consisting in a systematic search for the distinctive signs and symptoms of a given type of dementia are more attractive to the clinician than tests looking for a characteristic pattern of psychometric performances.

However, a shortcoming of such clinical scales is their specificity to a single diagnosis which makes them classify the others only by elimination; for instance a case of degenerative dementia is identified in many studies using Hachinsky's scale by a low ischemic score. A more valid differential diagnosis could be reached if the positive features of the diagnosis reached by elimination were also assessed. In other words a rating system using a combination of the scales proposed for the assessment of the different types of dementia, should have a higher discrimination power. In this connexion a new battery is currently in development in collaboration between the Mental Health Division of the World Health Organization and the University of Geneva which will allow a standardized assessment of a comprehensive inventory of the features described in the literature with the various clinical forms of dementia.

Section 3 - Assessing the Severity of Dementia

While some tests can only distinguish moderate or severe dementia from normal subjects (reviewed under section 1), others listed here can moreover separate subjects into the various stages of dementia. Those listed here are reported to provide a reliable quantitative measurement of a cognitive state, and detect and grade changes in intellectual functioning.

Mental Status Questionnaire (MSQ) (Kahn, 1960)

This consists of a 10 items questionnaire selected as the most discriminating of elderly patients with organic brain syndroms. The items deal with orientation, recall and general knowledge.

The scoring consists of giving one point for each error. The authors found a linear progression, with increasing number of errors, associated with the clinical severity of dementia.

In a Scandinavian study comparing measurements of the MSQ with those of a scale for activities of daily living (ADL) in 124 patients with dementia, the MSQ score has been shown to get worse as the patients got progressively incapacitated (Ferm, 1974).

Mental Status Questionnaire (MSQ) "analogues"

Several modifications of the MSQ have been proposed by other workers. These includes the simplified MSQ (Isaacs 1964), the Short Portable MSQ (SPMSQ) (Pfeiffer, 1975b), the Disorientation Factor (Lawson, 1977). The Orientation test (Irving, 1970) the Abbreviated Mental Test Score (Hodkinson, 1972) and the Orientation Section of the Clifton Assessment Schedule (Pattie, 1975). All these instruments have been compared in a comprehensive review by B. Garland (1980).

Clinical Dementia Rating (CDR) (Hughes, 1982)

This instrument was developed for an accurate staging of senile dementia of the Alzheimer's type (SDAT).

It assesses 6 behavioural and cognitive fields (memory, orientation, judgement and problem solving, community affairs, home and hobbies, and personal care). Guidelines are provided to combine the six categories into a global clinical dementia rating (CDR). The CDR was found to reliably distinguish among older subjects with a wide range of cognitive function from healthy to severely impaired and is proposed as useful device for prospective studies of SDAT.

System for Rating the Severity of Senility (Berger, 1980)

This is a simple classification of severity for nurses, social workers, therapists and physicians, based on the patient needs for care. It includes 6 descriptive classes with a crucial dividing line between class III representing patients who only need direction to accomplish activities of daily living and class IV that includes patients needing assistance to accomplish these activities.

Mini Mental State (MMS) (Folstein, 1975)

This is a simplified scored form that focus specifically on the cognitive mental status examination. It includes 11 questions on orientation, registration, attention and calculation, recall, language, and design copying. It requires 5 to 20 minutes to administer.

The test provides a quantified assessment of cognitive state of established reliability and validity. It has been shown to demonstrate worsening or improvement in the realm of cognition overtime and with treatment. For example, the authors used the MMS to document the cognitive disability found in patients with affective disorders (pseudodementia) and the improvement of this symptom after appropriate therapy of the mood disturbance.

Brief Cognitive Rating Scale (BCRS) (Reisberg, 1983)

This is a new instrument developed for the rapid structured clinical assessment of cognitive decline regardless of aetiology. It assesses the magnitude of cognitive impairment on five clinical axes: concentration, recent memory, past memory, orientation, and self-care.

Items are scored using specific criteria from information obtained during a structured clinical interview conducted in the presence of the spouse or of a caretaker whenever possible.

The instrument was administered to subjects with a normal aging, senescent forgetfulness and dementia and proved capable of assessing broad range of cognitive capacity from little or no impairment to severe dementia. Age related norms are reported by the authors as available for the scores of the BCRS.

Primary Mental Abilities (PMA) (Thurstone, 1949)

This battery includes 5 timed sub-tests which are the following: verbal meaning (a vocabulary test in which the best synonym is selected from five possible choices), verbal fluency (a test of how many words beginning with a certain letter one can recall), number ability (a simple test of addition) and space (a figure matching and mental shifting test).

This battery is one of the few psychometric instruments for which test-retest correlations are available for elderly subjects (Schaie, 1974). These data, that provide some indication on likely changes between two testings, make it most useful for the measuring of changes in intellectual deterioration.

The Global Deterioration Scale (GDS) (Reisberg, 1983)

This instrument is specifically designed for recording the onset and clinical progression phenomena which are characteristic of primary degenerative dementia.

The scale delineate seven clinically identifiable stages and provides criteria for their rating; these are classified in clinical characteristics and psychometric concomitants. In their validation study the authors report that GDS stages correlated significantly with brain anatomic changes as visualized with the on CT scans (De Leon, 1980) and with metabolic changes as determined with PET in patients with primary degenerative dementia (Ferris, 1980).

Discussion

The measurement of severity is mostly useful in evaluating therapeutic interventions or management procedures in dementia. In choosing a scale for this purpose the clinician should make sure that the dimensions included meet the target of the intervention under evaluation; an effort has been made in this review to describe the contents of each instrument in detail. A particular attention should also be paid, before choosing an instrument, to the means of converting the ratings into relevant grades of severity.

Section 4 - Assessment of the Institutional Adjustment of the Demented

In this section which discusses the rating scales dealing with behaviour of inpatients, only those specifically designed for elderly subjects have been included.

Stockton Geriatric Rating Scale (SGRS) (Meer, 1966)

This ward behaviour rating scale is used with mostly severely ill inpatients. The 33 items are rated dichotomously (either yes or no) by a nurse. The SGRS items are grouped into four factors namely: i) physical disability, ii) apathy, iii) communication failure, and iv) socially irritating behaviour. This scale is intended for use as both a research tool for measuring change and as a clinical instrument.

Geriatric Rating Scale (GRS) (Plutchik, 1970)

A 31 item derivative of the Stockton geriatric scale (Meer, 1966) for use with state hospital inpatients by ward personnel. The GRS's content is physical and social behaviour not psychopathology. It has 0-2 scaling with anchors for severity scaling; other items are scaled for their frequency of occurrence. Although the authors did no factor analysis, other workers have factor analysed the GRS into the following areas: 1) withdrawal/apathy, 2) anti-social disruptive behaviour, and 3) deficits in ADL's. This scale has been used in psychotropic drug studies in patients with organic brain disease: it is brief and reported to be well accepted by staff although its sensitivity to changes is open to question.

Scale for Rating Life Satisfaction (Neugarten, 1961)

This scale is for use with healthy nursing home residents and outpatients by staff. It contains five global items for evaluating the enjoyment of life. These are i) zest vs. apathy, ii) resolution and fortitude, iii) congruence between desired and achieved goals. iv) positive self-concept, and v) mood tone. Each of these five components is rated on a five-point scale (with 5, high); with a possible range from 5 to 25. The SRLS will require at least one long interview with the respondent. It may therefore be too cumbersome to be used on a large scale.

Psychogeriatric Dependency Rating Scales (PGDRS) (Wilkinson, 1980)

This brief method of assessment of the elderly mentally ill by nurses is structured into three areas, which provide useful distinctions for nursing: Orientation, Behaviour, and Physical Capacity. The PGDRS should not be used in situations where particularly low staffing ratios are present. Evidence of the validity of the scales is found in their ability to predict diagnosis between functional and organic status and to agree to an acceptable degree with concurrent measures of dependency, such as present ward allocation and mortality rate.

Kankakee Behaviour Rating Scale (KBRS) (Williams, 1971)

This scale administered by ward personnel is for use with state hospital inpatients. The KBRS has 50 items with 3 possible response points. The ten categories rated include alertness, appearance, speech and outlook. It has separate pre-treatment forms.

Nurses Observation Scale for Inpatient Evaluation (NOSIE-30) (Honigfeld, 1966)

Although not designated as a geriatric rating scale this 30-item scale was developed on chronic geriatric psychotics. It contains a balanced representation of self-care (competence) and psychopathology items. Items are rated on a 5-point frequency of occurrence format based on observations for the preceding three days. Six factors are scorable, positive factors: 1) social competence, 2) social interest, 3) personal neatness; negative factors: 1) irritability, 2) manifest psychosis and 3) motor retardation. The NOSIE has been used in many psychotropic drug studies (Ratner, 1972), (Stotsky, 1964), (Goldstein, 1976).

Ward Behaviour Inventory (WBI) (Burdock, 1968)

This scale is composed of 138 dichotomous "yes-no" items with 1/3 of the items reflecting verbal reports of patients. There is no official scoring system because the factor structure is determined by the workers. The factors evaluated include physical status: self-care and psychiatric status: social participation, extraversion, irritability, anxiety, guilty feelings, depression, feelings of unreality, slowed speech and movements, paranoid projection and excitement. The WBI has been used in geriatrics to detect drug-placebo differences in female geriatric patients (Burdock, 1960). However this scale has been criticized for being long and tedious (Smith, 1979).

Parkside Behaviour Rating Scale (PBRS) (Fine, 1970)

The PBRS is for use with chronic geriatric patients and those suffering from "arteriosclerotic" brain disease. It is administered by a nurse and contains six items each with five possible response points. This is a global scale dealing with self-care, orientation, cooperation, mood and reaction to environment and communication and socialization. Several sub-headings are included under most of the above.

Nurses Evaluation Form (NEF) (Freeman, 1966)

This behaviour rating scale specific for geriatric patients is mostly for use with severely ill inpatients. The twelve items with four response points each are rated by a nurse. The NEF evaluates personal behaviour, orientation, self-care, mood and speech.

Index of Independence in Activities of Daily Living (Katz, 1963)

This index of ADL studies results of treatment and prognosis in the elderly and chronically ill. Grades of the Index summarize overall performance in bathing, dressing, going to the toilet, transferring, continence, and feeding. It is for use with inpatients and contains eight items rated on a three point scale. The Index of ADL is rated by ward staff. Dependence vs. independence can also be rated using this index. It has proved to be a useful means of describing the patients' functional level at the time of onset of an illness such as fracture of the hip.

Behaviour Rating Scale (BRS) (Lawton, 1965)

The BRS is designed to be used by geriatric patients in nursing homes. The patient's orientation, mood, sociability and interpersonal relations are rated, by a nurse or aid, using a twenty item scale.

Rapid Disability Rating Scale (RDRS) (Linn, 1967)

The RDRS was developed specifically for research and rates self-care. It is essentially used with older, chronically ill geriatric patients and research patients. The sixteen item scale, rated on a three-point system, is given by a nurse. The scale is primarily a method of assessing treatment changes, for use in research on chronic illness. In studies with large samples, where time and efficiency are major considerations, the RDRS which is short, simple and based on easily observable data, can be very useful.

Scale for Rating Demented Geriatric Patients (Ferm, 1974)

This scale for use with demented geriatric inpatients evaluates the following behavioural variables: mobility, washing, dressing, eating, control of bladder, and bowels, ability to communicate, orientation in space, recognition of persons, participation, hobbies, sleep and quietness. Each variable has a six-point rating scale from one, completely independent and adequate in performance, to six, complete care necessary. This scale has been reported as used in drug evaluation studies (Honigfeld, 1981).

Minimum Social Behaviour Scale (Farina, 1957)

The rating in this scale is based on personal and interactional behaviour during brief standardized format designed to look like an interview. The patient's score is the total number of items, out of 32, scored plus, for example "score plus" if the response to the greeting is verbal and appropriate. This scale is designed for geriatric inpatients and is rated by ward aids.

Geriatric Profile (Evenson, 1972)

This unpublished scale was used in the Missouri Institute of Psychiatry. It is a behaviour rating scale designed for geriatric state hospital inpatients containing 74 items. The rating can be done by any of the ward personnel. There are four response points (0 = never observed to 3 = almost always observed). The Geriatric Profile has been criticized as lengthy though automated (Salzman, 1972).

Crichton Geriatric Behavioural Rating Scale (Robinson, 1961)

This scale, devised for the use of medical and nursing staff in their appraisal of patients with chronic brain damaged, is mainly aimed at monitoring treatment programmes. It covers 11 symptoms areas which are mobility, orientation, communication, cooperation, restlessness, dressing, feeding, continence, sleep, objective mood and subject mood. Performances of these areas are assessed on a five-point scale providing descriptive criteria for each function.

Discussion

The dimensions assessed in most of these instruments are those relevant for the nursing home staff's workload (such as functional dependency or disruptive behaviour); few instruments, like the scale for rating life satisfaction (Neugarten, 1961) takes into account the patient's subjective experience of adaptation to institutional life.

Section 5 - Multidimensional Instruments

Over the last years there has been a shift of emphasis from the tests measuring specific functions to multi-dimensional batteries; these are instruments designed to allow the measurement of a variety of more or less independent functions, such as physical status, intellectual capacity, social performance, mood and behaviour, etc., and provide for a given subject profiles of impairment of several functions.

They have been used for case finding formulation, implementation and evaluation of treatment, and planning of facilities and services.

The main samples of such instruments are reviewed in this section.

Comprehensive Assessment and Referral Evaluation (CARE) (Gurland, 1977)

This semi-structured interviewing guide is described as an inventory of defined ratings covering psychiatric, medical, nutritional, economic and social problems.

The CARE contains more information of relevance to the psychiatric field than other multi-dimensional instruments. It is reported to be a useful aid in determining whether an elderly person should be referred, and to whom, for health or social service. The instrument can be also used in evaluating the effectiveness of the provided service.

London Psychogeriatric Rating Scale (LPRS) (Hersch, 1978)

The LPRS consists of a 36 items questionnaire which answers are simply scored on a 3 point scale. An overall total score is derived for a given patient as well as four scores from subscales known as mental disability, physical disability, socially irritating behaviour and disengagement.

The scale has been used to assess a given patient progress over a long time period and has been reported to be predictive of diagnosis, outcome, placement and response to treatment.

Physical and Mental Impairment of Functions Evaluation (PAMIE) (Gurel, 1972)

This instrument was developed for the quantitative description of behaviours of chronically ill adults and institutionalized geriatric patients. It is composed of 77 dichotomous items covering a wide range of physical, psychological and social/interpersonal activities.

Because of the wide content areas that it explores, this scale is reported to be particularly well suited for indicating the levels of care required by different patients.

Geriatric Evaluation by Relative Rating Instrument (GERRI) (Schwartz, 1983)

This is a new rating scale that is currently under development. According to the authors it is especially designed for evaluating elderly outpatient with symptoms of mental decline; it takes into account the observation of the patients behaviour by relatives or significant other persons. The areas assessed in the scale are cognitive functioning, mood and affect, and somatic functioning. The instrument is proposed for serial use in clinical drug trials.

OARS Multidimensional Functional Assessment Questionnaire (Pfeiffer, 1975a)

This is a semi-structured interviewing guide for use with elderly individuals or population especially those living in the community. It measures the subject functional level in each of the following areas: social resources economic resources, mental health, physical health, capacity of self-care and activities of daily living.

A number of indices can be derived from the information rated under these areas such as the profile of functioning, the cumulative impairment score, the number of significant impairments and the patient state.

The instrument has been used in a series of research studies mainly exploring alternatives to institutional care for impaired older persons, (the Older American Resources and Services project known as the OARS).

Patient Appraisal and Care Evaluation (PACE) (U.S. Public Health Service, 1975)

This instrument was designed by the U.S. Health Education and Welfare Department for the purpose of a long-term care facility improvement study. It is a tool for systematically assessing health care which is built on the long-term facilities model rather than on a medical model. It has two focuses: a patient assessment section and a patient care procedure section. It covers physical functions and impairment, psychosocial problems, medical risk status, care being received and socio-demographic status.

This instrument can serve as a guide for care planners and managers and it can also be used as a discharge planning aid given the special discharge planning section for monthly evaluation.

Discussion

Multidimensional instruments are usually lengthy and difficult to use. However, their comprehensive design makes of them a good training method to get the clinician to know about the physical, social and mental dimensions so oftenly interwoven in health problems of the elderly.

On the other hand such broadly descriptive instruments can be very useful for much needed longitudinal studies of the natural history of dementia.

Concluding Remarks

Unlike the laboratory or neuroradiological investigations, the clinical assessment instruments for dementia can be, in skillful hands, a part of the treatment process, and can mediate an otherwise difficult doctor-patient relationship.

While this paper attempted to provide a comprehensive view on available instruments in this field it is far from being exhaustive. The interested reader can find more information about the scales suitable for geriatric psychopharmacology in the review paper of Salzman and his colleagues (Salzman, 1972); clinical memory testing has been comprehensively reviewed by Erickson and Scott (1977); Honigfeld (1981) recently reviewed the ward behaviour scales for geriatric patients. Discussions of the methodological problems involved in the assessment of the mentally impaired elderly can be found in the books edited by Kramer and Jarvik (1979) and by Kane and Kane (1981) as well as in the chapters of Miller and Gurland (1980).

Instruments published in non-English literature, particularly those in French will be found among other international instruments in a comprehensive sourcebook of mental instruments in gerontology to be edited by Israel, Kozarevic and Sartorius (1983).

To conclude this review it should be noted that most instruments developed so far for dementia are focussing on the severe manifestations of the illness during late stages where insight is lost and self-reports become of little usefulness. New perspectives on dementia can be gained through the clinical evaluation of patients in early stages. It is hoped that the future research in this field will add reliable methods to assess the subjective experiences of the dementing elderly.

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