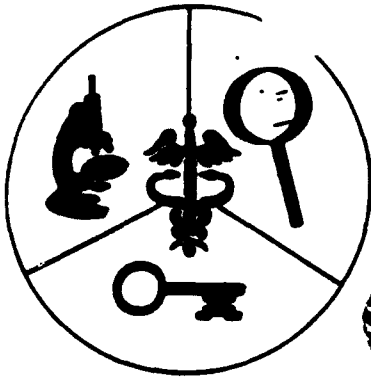


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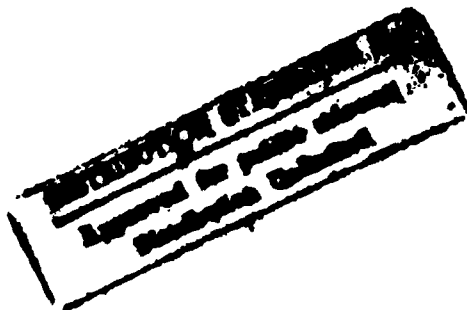
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PRACTICE PATTERNS OF
U.S. ARMY MEDICAL DEPARTMENT
PSYCHIATRISTS AND
PSYCHOLOGISTS

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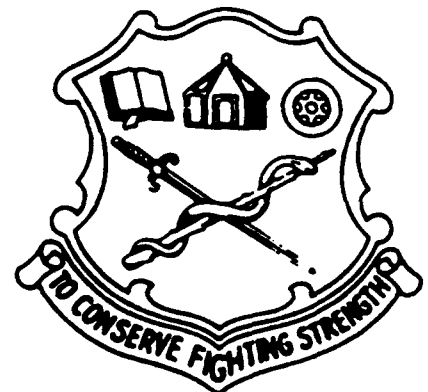


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January 1994



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The analysis of the Practice Patterns of U.S. Army Medical Department Psychiatrists and Psychologists represents the first of a series of studies which have been designed to analyze the practice patterns of U.S. Army Medical Department Health Care Providers. It would be impossible to acknowledge all the military and civilian employees who contributed to this successful project. Without their assistance the planned studies of practice patterns could not have been envisioned nor could this first study have been completed.

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EXECUTIVE SUMMARY

The purpose of this study was to evaluate the practice patterns of psychiatrists and psychologists providing mental health services in six Army medical treatment facilities. The data base used for the study consisted of a sample of data derived from the Army's Ambulatory Care Data Base (ACDB) Study (Georgoulakis et al., 1988). The selection criteria of the data included all mental health visits from Phase I, (January 1986 to May 1987), that contained (a) a valid patient ID, (b) a valid diagnosis, (c) a psychiatrist or psychologist as the primary or secondary care provider, and (d) the amount of time the provider spent with the patient. This resulted in 14,705 visits representing 6,707 unique patients.

This data was analyzed to review the diagnostic groups treated by provider speciality and to analyze (a) the average time per visit by mental health provider speciality, (b) the frequency of performance of mental health procedures (c) the frequency with which mental health providers treated patient with concurrent physical problems, and (d) the frequency with which they ordered ancillary medical procedures or prescribed medication.

A second data file on 1,941 individual patients was developed from the Ambulatory Care Data Base for analysis of psychological testing procedure data. This data file included all patients from Phase I who met the following criteria. There was (a) valid patient identification, (b) a valid diagnosis, (c) the amount of time spent with the provider, (d) a psychological testing procedure code in the episode of assessment, (e) no treatment/therapy procedures in the episode of assessment, and (f) a psychologist or psychiatrist involved in the episode of assessment. Psychological testing procedures administered by supervised psychological assistants were included in this data file.

This methodology was utilized to analyze the "procedure" of psychological testing evaluation, as "psychological testing" is an assessment process, often involving several procedures (e.g., testing, scoring, interpretation, report writing, interview) bundled within the same visit or extending over several visits. Data were analyzed to determine (a) the frequency of performance of psychological testing evaluation by provider type (psychological or psychological assistant), and (c) the time required for performance of different types of psychological testing evaluations (e.g., personality, intellectual, and neuropsychological), separately and in combination.

Results of the study did not reveal any evidence that psychiatrists performed patient care or medical services in any manner different from psychologists, except that psychiatrists prescribed medication. Psychologists were found (a) to spend more time with patients, (b) to provide a wider variety of patient care services, (c) to treat more patients with concurrent medical

disorders, (d) to perform nearly all psychological testing evaluations, and (e) to be the sole medical professionals performing biofeedback and behavioral assessment. Both provider groups treated all of the same patient diagnostic categories, with some variation in patient diagnostic frequency, and neither group utilized ancillary medical procedures to any significant extent in its evaluation and management of patients.

The results of the data on psychological assessment revealed that psychologists are the providers of nearly all psychological testing evaluations. The evaluations were found to be work intensive, lengthy, and a complex diagnostic process. Three significant variations were found: (a) time spent in evaluation, depended upon the type of assessment undertaken, and whether a psychological assistant was utilized; (c) the frequency with which types of evaluations were performed, with personality assessments accounting for almost one-half of all psychological testing evaluations; and (d) the average number of visit days involved in an assessment, which again, varied with the complexity of the evaluation.

PRACTICE PATTERNS OF U.S. ARMY MEDICAL DEPARTMENT PSYCHIATRISTS AND PSYCHOLOGISTS

Introduction

The purpose of the present study was to investigate practice patterns of U.S. Army Medical Department psychiatrists and psychologists, utilizing data from the U.S. Army Ambulatory Care Data Base.

The Army Ambulatory Care Data Base

The Army Ambulatory Care Data Base is one of the largest ambulatory care data bases in existence and is the only large data base that contains time expended by the provider for the ambulatory care procedure performed. Researchers conducting the Ambulatory Care Data Base Study (Georgoulakis et al., 1988), collected clinical data from outpatient visits. Data collected included (a) patient demographics, (b) provider information, (c) primary and secondary diagnoses, (d) procedures performed, (e) time spent by provider, (f) ancillary tests ordered, (g) reason for visit, (h) prescriptions ordered, and (i) patient disposition, as well as a number of other items. During the 21 month period of the Ambulatory Care Data Base Study (January 1986 to September 1987), over 3.1 million patient encounters were recorded from six study hospitals. These encounters involved more than 4,000 health care providers in some 70 clinical specialties. The six facilities selected for inclusion had diverse populations which constituted a representative sample of Army Medical Department health care. The study included health care provided to patients of all age groups, with males representing 54% of patients and females representing 46% of patients. Active duty personnel comprised only 38% of patient visits, while dependents and retirees accounted for the remaining 62% of all outpatient visits. U.S. Army beneficiaries do not pay for medical care, and health care providers are not paid for individual services. As physicians and other health care providers are salaried, there was no incentive to inflate the data collection. The health care provider completed the diagnosis and procedure portion of the data collection form, while administrative personnel recorded the time spent by the provider and completed the administrative components of the form. A reliability study was conducted (Moon, J.P., Georgoulakis, J.M., Bolling, D.R., Akins, S.E., & Austin, V.E., 1989) by visiting each site and reviewing patient records for diagnostic and procedural accuracy against a random sample of data forms. This study found the data base to be highly reliable.

Method

Based upon criteria developed by the authors, a sample of mental health data was drawn from the Army Ambulatory Care Data Base. The selection criteria included all mental health visits

from Phase 1, (January 1986 to May 1987), that had contained (a) a valid patient ID, (b) a valid diagnosis, (c) a psychiatrist or psychologist as the primary or secondary care provider, and (d) the amount of time the provider spent with the patient. This resulted in 14,705 visits, representing 6,707 unique patients. The data base represents all patient contacts by 21 psychiatrists and 13 psychologists during Phase 1, when those contacts resulted in complete data for the visit record. This data was utilized to review the diagnostic groups treated by provider specialty and to analyze (a) the average time per visit by provider specialty, (b) the frequency of performance of mental health procedures, (c) the frequency with which mental health providers treated patients with concurrent physical problems, and (d) the frequency with which they ordered ancillary medical procedures or prescribed medication.

A second data file on 1,941 individual patients was developed from the Ambulatory Care Data Base for analysis of psychological testing procedure data. This data file included all patients from Phase 1 who met the following criteria. There was (a) valid patient identification, (b) a valid diagnosis, (c) the amount of time the provider spent with the patient (d) a psychological testing procedure code in the episode of assessment, (e) no treatment/therapy procedures in the episode of assessment, and (f) a psychologist or psychiatrist involved in the episode of assessment. Psychological testing procedures administered by supervised psychological assistants were included in this data file.

This methodology was utilized to analyze the "procedure" of psychological testing evaluation, as "psychological testing" is an assessment process, often involving several procedures (i.e., testing, scoring, interpretation, report writing, interview) bundled within the same visit or extending over several visits. Data were analyzed to determine (a) the frequency of performance of psychological testing evaluation by provider type, (b) the percentage of psychological testing evaluation time by provider type (psychologist or psychological assistant), and (c) the time required for performance of different types of psychological testing evaluations (e.g., personality, intellectual, and neuropsychological), separately and in combination.

Results

Psychiatrists and Psychologists as Primary Care Providers

The data were analyzed to determine (a) the number of visits, (b) the number of unique patients, and (c) the average time per visit by provider type--when a psychiatrist or psychologist was the primary care provider (see Table 1).

TABLE 1**PSYCHIATRISTS AND PSYCHOLOGISTS
AS PRIMARY CARE PROVIDER**

	PSYCHIATRIST PRIMARY PROVIDER N = 21	PSYCHOLOGIST PRIMARY PROVIDER N = 13
VISITS	5713	6029
PATIENTS	2704	2737
AVERAGE NUMBER VISITS/PATIENT	2.1	2.2
AVERAGE TIME/VISIT	51.4 minutes	63.2 minutes
AVERAGE TOTAL TIME/PATIENT	108.7 minutes	139.3 minutes

Psychiatrists had 5,713 patient visits as primary providers and saw 2,704 unique patients; psychologists had 6,029 patient visits as primary providers and saw 2,737 unique patients. This resulted in (a) an average of 272 patient contacts, with 129 unique patients, per psychiatrist in the study and (b) an average of 464 patient contacts, with 211 unique patients, per psychologist in the study. Psychiatrists saw each patient for an average of 2.1 visits, and psychologists saw each patient for an average of 2.2 visits. Average time per visit by psychiatrists was 51.4 minutes, while the average time per visit by psychologists was 63.2 minutes. The average total time per patient per primary provider was 108.7 minutes for psychiatrists and 139.3 minutes for psychologists.

Psychiatrists and Psychologists as Secondary Care Providers

The data were analyzed to determine (a) the number of visits, (b) the number of unique patients, and (c) the average time per visit by provider type--when a psychiatrist or psychologist was the secondary care provider (see Table 2).

TABLE 2**PSYCHIATRISTS AND PSYCHOLOGISTS
AS SECONDARY CARE PROVIDER**

	PSYCHIATRIST SECONDARY PROVIDER N = 21	PSYCHOLOGIST SECONDARY PROVIDER N = 13
VISITS	586	2514
PATIENTS	427	1276
AVERAGE NUMBER VISITS/PATIENT	1.4	2.0
AVERAGE TIME/VISIT	19.4 minutes	32.4 minutes
AVERAGE TOTAL TIME/PATIENT	26.6 minutes	63.8 minutes

Secondary care is care delivered when a non-credentialed provider is the primary care giver and the psychiatrist or psychologist sees the patient directly for a brief period of time or when the psychiatrist or psychologist assists another provider with a patient (e.g., by prescribing medication or providing co-therapy, as in group or family treatment). Psychiatrists had 586 patient encounters as secondary providers and saw 427 unique patients; psychologists had 2,514 patient encounters as secondary providers and saw 1,276 unique patients. This resulted in (a) an average of 30 secondary patient contacts, with 20 unique patients, per psychiatrist in the study and (b) an average of 193 secondary patient contacts, with 98 unique patients, per psychologist in the study. As secondary providers, psychiatrists saw each patient for an average of 1.4 visits, and psychologists saw each patient for an average of 2.0 visits. In this capacity, the average time per visit by psychiatrists was 19.4 minutes, while the average time per visit by psychologists was 32.4 minutes. The average total time per patient per secondary provider was 26.6 minutes for psychiatrists and 63.8 minutes for psychologists.

Psychiatrists and Psychologists as Either Primary or Secondary Care Providers

The data were analyzed to determine (a) the number of visits, (b) the number of unique patients, and (c) the average time per visit of all visits (i.e., primary care and secondary care) by provider type (see Table 3).

TABLE 3**PSYCHIATRISTS AND PSYCHOLOGISTS
AS SECONDARY CARE PROVIDER**

	PSYCHIATRIST SECONDARY PROVIDER N = 21	PSYCHOLOGIST SECONDARY PROVIDER N = 13
VISITS	6284	8543
PATIENTS	3031	3676
AVERAGE NUMBER VISITS/PATIENT	2.1	2.3
AVERAGE TIME/VISIT	48.5 minutes	54.2 minutes
AVERAGE TOTAL TIME/PATIENT	100.6 minutes	126.0 minutes

Psychiatrists had 6,284 total patient encounters and saw 3,031 unique patients; psychologists had 8,543 total patient encounters and saw 3,676 unique patients. This resulted in (a) an average of 299 total patient contacts, with 144 unique patients, per psychiatrist in the study and (b) an average of 657 total patient contacts, with 283 unique patients, per psychologist in the study. Psychiatrists saw each patient for an average of 2.1 visits, and psychologists saw each patient for an average of 2.3 visits. Average time per visit across all visits by psychiatrists was 48.5 minutes, while the average time per visit across all visits by psychologists was 54.2 minutes. The average total time per patient seen was 100.6 minutes for psychiatrists and 126.0 minutes for psychologists.

Diagnostic Categories of Patients Treated by Psychiatrists and Psychologists

The data were organized by mental health diagnostic categories. The primary diagnosis from the last visit of each patient was grouped into one of 12 diagnostic categories from the International Classification of Diseases - 9th Revision Clinical Modification (ICD-9-CM), and those diagnostic categories were then sorted by provider type, psychiatrist or psychologist (see Table 4).

**TABLE 4 DIAGNOSTIC CATEGORIES OF PATIENTS TREATED
 BY PSYCHIATRISTS AND PSYCHOLOGISTS**

DIAGNOSTIC CATEGORY	PSYCHIATRIST & PATIENTS	PSYCHOLOGIST & PATIENTS
DISORDERS OF CHILDHOOD	7.0	3.9
MOOD DISORDERS	15.2	5.2
ADJUSTMENT DISORDERS	21.5	21.4
SUBSTANCE USE DISORDERS	4.5	4.9
SCHIZOPHRENIA	5.5	1.4
ORGANIC BRAIN SYNDROMES	2.6	1.3
ANXIETY DISORDERS	5.0	3.3
PSYCHOLOGICAL FACTORS AFFECT. PHYSICAL COND.	0.8	4.3
PERSONALITY DISORDERS	4.0	7.0
V-CODE DISORDERS	16.5	30.7
UNSPECIFIED MENTAL DISORDERS	3.8	4.3
NO DIAGNOSIS PRESENT	10.1	9.8

Both provider types treated all categories of patients, with some variation in frequency of treatment of various diagnostic categories. There was no diagnostic category that was unique to either provider type. As there was no penalty for giving V-code diagnoses or coding "no diagnosis present," these diagnostic categories are frequently represented in the data base: This is in contrast to insurance carrier data, which often requires the professional to give a "nervous and mental disease" diagnosis for payment. A review of categories of diagnoses treated indicated that psychiatrists more frequently treated mood disorders and schizophrenia, two disorders often treated with medication. Psychologists treated more patients with personality disorders and psychological factors affecting a physical condition, disorders that often respond better to behavioral treatment. Psychologists more often treated V-code disorders (i.e., marital problems, interpersonal problems, adult or child antisocial behavior, malingering, noncompliance with medical treatment, occupational problems, parent-child problems, other specified family circumstances, phase of life problems, uncomplicated bereavement, academic problems, or borderline intellectual

functioning) than did psychiatrists.

Frequency of Treatment by Psychiatrists and Psychologists of Patients With Concurrent Physical Disorders and Conditions

The data were reviewed to determine the frequency with which psychiatrists or psychologists, as primary care providers, treated patients with concurrent physical disorders or conditions (i.e., an Axis III Diagnosis), (see Table 5).

TABLE 5 FREQUENCY DISTRIBUTION OF PATIENTS WITH CONCURRENT PHYSICAL DISORDERS AND CONDITIONS TREATED BY PSYCHIATRISTS AND PSYCHOLOGISTS

AXIS III DIAGNOSIS PRESENT	PSYCHIATRIST	PSYCHOLOGIST
PERCENT OF PATIENTS	7.5 % (n=202)	16.3 % (n=446)
PERCENT OF VISITS	9.8 % (n=558)	12.7 % (n=764)

note: Psychiatrist total pts = 2704, total visits = 5713
 Psychologist total pts = 2737, total visits = 6029

The data reveal that 7.5% of patients seen by psychiatrists had a concurrent medical problem, while 16.3% of patients seen by psychologists had a concurrent medical problem. When the data were analyzed by total primary care provider visits, 9.8% of patients seen by psychiatrists had a concurrent medical problem, while 12.7% of patients seen by psychologists had such a problem.

Frequency With Which Psychiatrists, as Primary Care Providers, Prescribed Medication

The data were reviewed to determine the frequency with which psychiatrists, as primary care providers, prescribed medication and the mean time per treatment or evaluation visit when, during that visit, they prescribed medication (see Table 6).

TABLE 6 FREQUENCY OF PSYCHIATRISTS PRESCRIBING MEDICATION WHEN PRIMARY CARE PROVIDER

	FREQUENCY	MEDICATION PRESCRIBED MEAN TIME/ VISIT
TOTAL VISITS (N = 5769)	25.2 % (n = 1453)	50.4 minutes
INDIVIDUAL PSYCHOTHERAPY PATIENTS (N = 964)	47.3 % (n = 558)	46.6 minutes

note: Mean ind. psychtx time without medication is 46.8 min.

The data indicated that medication was prescribed in 25.2% of all primary care visits by psychiatrists. The average evaluation/treatment session length when medication was prescribed was 50.4 minutes. When the data were examined by unique patients (rather than by visits) seen for individual psychotherapy, 47.3% of the patients were treated with medication, and the average individual therapy session was 46.6 minutes in duration.

Frequency With Which Psychiatrists and Psychologists Ordered Ancillary Medical Procedures

The data were reviewed to determine the frequency with which ancillary medical procedures were ordered for mental health patients (see Table 7).

TABLE 7 FREQUENCY OF ORDERING ANCILLARY MEDICAL PROCEDURES BY MENTAL HEALTH PROVIDER TYPE

ANCILLARY PROCEDURE	PSYCHIATRIST % OF VISITS (n = 5769)	PSYCHOLOGIST % OF VISITS (n = 6077)
LAB PROCEDURES	2.79 % (n = 161)	0.35 % (n = 21)
X-RAY PROCEDURES	0.05 % (n = 3)	0.0 % (n = 0)
EEG'S	0.03 % (n = 2)	0.0 % (n = 0)
EKG'S	0.02 % (n = 1)	0.0 % (n = 0)

Across all primary care provider visits, psychiatrists ordered lab procedures 2.79% of the time, while psychologists ordered lab procedures 0.35% of the time. Psychiatrists made 5,769 visits and ordered only three x-rays, two EEGs, and one EKG; psychologists did not order any x-rays, EEGs, or EKGs.

Frequency With Which Psychologists and Psychiatrists Perform Common Mental Health Procedures

The data were reviewed to determine the frequency with which psychiatrists and psychologists, as primary care providers, performed common mental health procedures (see Table 8).

TABLE 8 FREQUENCY OF PERFORMANCE OF MENTAL HEALTH PROCEDURES BY PSYCHIATRISTS AND PSYCHOLOGISTS

PROCEDURE*	PSYCHIATRIST PERCENT VISITS	PSYCHOLOGIST PERCENT VISITS
INDIVIDUAL PSYCHOTHERAPY	62.5 % (n = 3570)	33.0 % (n = 1988)
FAMILY/MARITAL PSYCHOTHERAPY	9.7 % (n = 556)	18.7 % (n = 1128)
GROUP PSYCHOTHERAPY	2.9 % (n = 166)	4.4 % (n = 264)
DIAGNOSTIC INTERVIEW	34.4 % (n = 1963)	25.2 % (n = 1518)
BEHAVIORAL ASSESSMENT	0 % (n = 4)	10.7 % (n = 645)
BIOFEEDBACK	0 % (n = 0)	1.4 % (n = 85)
PSYCHOLOGICAL TESTING EVALUATION	<u>% Patients</u> 0 % (n = 2)	<u>% Patients</u> 52.8 % (n = 1939)

- * multiple procedures may occur in a single visit
- note 1: Psychological testing data analyzed by patient frequency rather than visit frequency as the same evaluation may extend over multiple visits.
- note 2: Low frequency or military unique procedures not included in above table.

An examination of patterns of procedures performed by psychiatrists indicated that they primarily saw patients in individual psychotherapy (62.5% of all visits) and conducted diagnostic interviews (34.4% of visits). To a lesser extent psychiatrists engaged in family/marital psychotherapy (9.7% of visits) and, still less frequently, group therapy (2.9% of visits). More than one procedure was sometimes performed during a visit; therefore, the total percentage of procedures performed exceeded 100%. A review of procedures performed by psychologists indicated that one-third of patient contacts was for individual psychotherapy (33% of visits), and one-fourth of visits was for diagnostic interview, (25.2% of visits). Psychologists performed family/marital psychotherapy (18.7% of visits) and group psychotherapy (4.4% of visits) about twice as frequently as did psychiatrists. Psychologists also performed behavioral assessments in 10.7% of patient contacts. Behavioral assessment does not have a code within CPT, but it is a common mental health procedure involving evaluation of a behavioral problem through direct observation of the behavior in the environment (e.g., observation of a child in a classroom), or through a structured

behavioral analysis via interview. Psychiatrists did not perform biofeedback, while psychologists performed this procedure during 1.4% of visits.

The frequency of psychological testing evaluation was analyzed by unique patient, rather than by visit. Because evaluations often extended across several days, to have analyzed this data by visit would have artificially inflated the frequency of performance. Data was included when the professional was the primary or secondary care provider, because many of the visits involved a psychological assistant administering a procedure with the psychologist providing an interpretation and report of the findings. An analysis of the psychological testing evaluations revealed that psychiatrists performed this procedure with 2 of the 1,941 patients tested; psychologists performed the procedure 1,939 times. This indicated that 52.8% of all patients seen by a psychologist, (total n unique pts = 3,676), received an evaluation which included psychological testing.

Mean Time for Various Mental Health Procedures as Performed by Provider Specialty

The data were analyzed to determine the mean time per visit for these common mental health procedures presented (see Table 9).

TABLE 9 MEAN TIME FOR PERFORMANCE OF MENTAL HEALTH PROCEDURES BY PSYCHIATRISTS AND PSYCHOLOGISTS

PROCEDURE	PSYCHIATRIST MEAN TIME	PSYCHOLOGIST MEAN TIME
INDIVIDUAL PSYCHOTHERAPY	46.8 minutes	59.7 minutes
FAMILY/MARITAL PSYCHOTHERAPY	53.0 minutes	59.7 minutes
GROUP PSYCHOTHERAPY	38.3 minutes *	79.2 minutes
DIAGNOSTIC INTERVIEW	62.6 minutes	53.8 minutes
BEHAVIORAL ASSESSMENT	Insufficient Data	60 minutes *
BIOFEEDBACK	Not Performed	58.8 minutes

* small sample size

The data indicated that (a) for individual psychotherapy, psychiatrists spent an average of 46.8 minutes per visit, while

psychologists spent 59.7 minutes; (b) for family/marital psychotherapy, psychiatrists spent an average of 53.0 minutes per visit, while psychologists spent an average of 59.7 minutes; (c) for group psychotherapy, psychiatrists spent an average of 38.3 minutes, while psychologists spent 79.2 minutes; and (d) for diagnostic interviews, psychiatrists spent 62.6 minutes, while psychologists spent 53.8 minutes. Psychiatrists did not perform behavioral assessments or biofeedback; the mean time spent by psychologists was 60.0 minutes and 58.8 minutes, respectively.

Psychological Testing Evaluation

Psychological testing evaluation, as a "procedure" performed for psychiatric or medical diagnostic purposes, is actually a cluster of procedures bundled together. The CPT-4 defines code 90830 as psychological testing by physician, with written report, per hour. Psychological testing evaluation involves: (a) administering one to many (15 to 20) psychological tests, depending upon the referral question and the purpose of the evaluation; (b) scoring the tests; (c) interpreting the test findings; (d) writing reports; (e) reviewing of medical records; and, (f) often, conducting a clinical diagnostic interview with the patient and/or others, such as the spouse, teacher, care-giver, etc. It is a complex, intensive, multidimensional process utilized for purposes, such as (a) determining diagnosis, (b) evaluating the effects of treatments or medications, (c) formulating treatment recommendations, (d) determining the neurobehavioral and cognitive effects of neurological disorders, and (e) evaluating malingering in apparent medical patients. Because of the varied types of psychological testing evaluations, the data was analyzed by type of assessment: (a) personality; (b) intellectual; (c) neuropsychological; and (d) other.

Of all patients seen by either a psychologist or a psychiatrist, 28.9% received psychological testing. The data indicated that psychological testing evaluation is almost exclusively performed by psychologists (see Table 10).

TABLE 10 FREQUENCY OF PSYCHOLOGICAL TESTING EVALUATIONS BY PSYCHIATRISTS AND PSYCHOLOGISTS

	TOTAL	PSYCHIATRIST	PSYCHOLOGIST
FREQUENCY OF PSYCHOLOGICAL TESTING EVALUATION ACROSS ALL PATIENTS (N total sample = 6707)	28.9 % n=1941	0 % n=2	52.8 % n=1939
PERCENTAGE OF PSYCHOLOGICAL TESTING EVALUATION PERFORMED BY PROVIDER TYPE (total N psychiatry patients = 3031) (total N psychology patients = 3676)	100 % N=1941	0.10 % N=2	99.9 % N=1939

Of the 1,941 patients evaluated with psychological testing procedures, 1,939 (99.9%) were evaluated by psychologists. Only two

patients (0.1%) were evaluated by psychiatrists. Consequently, this data was not further analyzed with regard to psychiatrists.

As psychological testing within the military setting often employs supervised psychological assistants (similar to the physician extenders utilized by other physician specialists) in the administration of some of the psychological test procedures, the data was analyzed for total evaluation time and also for time spent by provider type, psychologist or psychological assistant.

Psychologists in private practice in the civilian community typically do not employ psychological assistants. State regulations may bar the practice or overhead and malpractice costs may make it unattractive. Civilian psychologists typically perform the entire psychological testing evaluation themselves, and the time value, then, is all professional work time.

The data were analyzed, by assessment type, for total work time involved in psychological testing evaluation (see Table 11).

TABLE 11 TOTAL WORK TIME FOR PSYCHOLOGICAL TESTING EVALUATION

TYPE OF EVALUATION	TOTAL TIME	DIRECT PSYCHOLOGIST LABOR TIME	PSYCHOLOGIST SUPERVISED ASSISTANT TIME	N FREQ.	MEAN # VISITS/ % EVAL
ALL EVALUATIONS AVERAGED	3.44 hrs 100 %	0.99 hrs 28.9 %	2.45 hrs 71.1 %	1939 100 %	1.77
PERSONALITY EVALUATION ONLY	1.97 hrs 100 %	0.39 hrs 19.8 %	1.58 hrs 80.2 %	964 49.7 %	1.43
INTELLECTUAL EVALUATION ONLY	3.28 hrs 100 %	0.84 hrs 25.7 %	2.44 hrs 74.3 %	114 5.9 %	1.65
INTELLECTUAL AND PERSONALITY COMBINED	3.19 hrs 100 %	1.23 hrs 38.6 %	1.96 hrs 61.4 %	215 11.1 %	2.35
COMPLETE NEUROPSYCHOLOGICAL	10.10hrs 100 %	4.55 hrs 45.1 %	5.55 hrs 54.9 %	55 2.8 %	4.55
OTHER/FUNCTIONAL MEDICAL SYMPTOMS EVAL	4.56 hrs 100 %	1.96 hrs 43.0 %	2.60 hrs 57.0 %	69 3.6 %	2.26
PERSONALITY WITH OTHER UNSPECIFIED TEST EVAL	5.38 hrs 100 %	1.32 hrs 24.5 %	4.06 hrs 75.5 %	55 2.8 %	1.49
INTELLECTUAL & OTHER UNSPECIFIED TEST EVAL	9.19 hrs 100 %	3.89 hrs 42.4 %	5.3 hrs 57.6 %	15 0.8 %	2.27
NEUROPSYCH. GROUPED PARTIAL, COMPLETE, UNSP.	9.67 hrs 100 %	3.15 hrs 32.6 %	6.52 hrs 67.4 %	205 10.6 %	3.09
UNCATEGORIZED TESTING EVALUATIONS	2.62 hrs 100 %	0.71 hrs 27.0 %	1.91 hrs 73.0 %	256 13.2 %	1.47

note 1: Total Work Time includes Administration, Scoring, Interpretation, Report Writing, and Clinical Interview when part of Evaluation.

note 2: Table does not represent all combinations of evaluations due to decreasing n/group.

Across all testing evaluations, the average total time per evaluation was 3.44 hours, with psychologists accounting for 28.9% of the time and psychological assistants accounting for 71.1%. The duration of evaluations varied significantly depending upon type of assessment, ranging from 1.97 hours for "personality evaluation only" to 10.10 hours for a complete neuropsychological evaluation (neuropsychological with personality and intellectual). Also, the frequency of performance of types of evaluation varied significantly, with "personality evaluation only" representing 49.7% of all evaluations and "complete neuropsychological evaluations" representing only 2.8%. The direct professional work component increased significantly with the complexity of the evaluation, ranging from 19.8% of the total time for "personality evaluation only" to 45.1% of the total time for "complete neuropsychological evaluation". In addition, the average number of visits required to complete an evaluation varied significantly with evaluation complexity, ranging from 1.43 visits per "personality evaluation only" evaluation to 4.55 visits per "complete neuropsychological evaluation".

Discussion

The present study represents an in-depth examination of patient care services provided by psychiatrists and psychologists as reflected in the mental health data of the Army's Ambulatory Care Data Base. This data base contains ambulatory care data across 17 months of data collection; it includes data on patients from (a) all beneficiary groups (i.e., active duty and retired military and their eligible family members); (b) all age groups (e.g., the wife of a retired general, the 18-year-old active duty private, and the infant son of a sergeant); and (c) diverse settings. It contains data on psychiatrists and psychologists practicing in (a) hospital-based outpatient mental health clinics, (b) free standing medical clinics, and (c) community mental health activities. The information from this data base represents an accurate assessment of the pattern of practice of psychiatrists and psychologists in Army Medical Department treatment facilities.

The study data showed that psychologists spent more time per visit in direct patient care per visit than did psychiatrists. Similarly, psychologists spent more time in total patient care contact per treated individual than did psychiatrists.

The data, when reviewed by diagnostic category, indicated that psychiatrists and psychologists treated the same types of patients. No diagnostic category was seen exclusively by one provider type; however, some variation was observed. Psychiatrists saw, on the average, more individuals with mood disorders and schizophrenia; psychologists saw more with personality disorders, psychological factors affecting physical condition, and V-Code diagnoses.

Data was reviewed to determine whether psychiatrists saw more

patients with medical conditions, as might be expected, given that psychiatrists are physicians. However, that was not the case: Psychologists saw more than twice as many patients with concurrent physical disorders and conditions, as did psychiatrists. This finding may be the result of the fact that many psychologists are trained in the use of behavioral techniques (a) to treat medical conditions, such as migraine, irritable bowel, TMJ, tic disorders, chronic pain); (b) to improve the ability to cope with a medical condition or procedure, (e.g., through the use of relaxation training to aid in coping with emesis during chemotherapy); and (c) to assist in rehabilitation following physical trauma (e.g., by reestablishing behavior patterns after a head injury).

The data showed that psychiatrists prescribed medication in approximately one-fourth of all patient contacts and to almost one-half of their psychotherapy patients. Psychologists, not being physicians, did not prescribe medication. Prescribing did not, however, affect the length of a session. Psychiatrists spent an average of 46.6 minutes in individual psychotherapy when medication was prescribed and 46.8 minutes when it was not.

To identify any differences between the practice patterns of psychiatrists and psychologists, the data were examined to assess the frequency with which each ordered ancillary medical procedures. Essentially, there was no difference between psychiatrists and psychologists in the ordering of ancillary medical procedures; members of neither specialty did so to any significant degree. The data revealed that psychiatrists ordered lab procedures at less than 3% of visits, and psychologists ordered lab procedures at less than 1% of visits. Neither psychiatrists or psychologists ordered x-rays, EEGs, or EKGs with any frequency. The only difference observed between psychiatrists and psychologists in the practice of medicine was that psychiatrists prescribed medication.

When the data were analyzed for procedures performed and the time involved in performance of specific procedures, it was observed that psychiatrists primarily performed individual psychotherapy and diagnostic interviews (frequency greater than 10% of visits). There was more variation among procedures performed by psychologists, with a frequency above 10% of visits for individual psychotherapy, family/marital psychotherapy, diagnostic interviews, behavioral assessments, and psychological testing evaluations. In general, psychologists spent more time per visit than psychiatrists in performing these procedures (e.g., 12.9 minutes more, on the average, for individual psychotherapy). Diagnostic interviews were an exception: Psychiatrists spent, on the average, 8.8 minutes more per interview than did psychologists.

The data from the present study did not reveal any evidence that psychiatrists performed patient care or medical services in any manner different from psychologists, except that they prescribed medication. In fact, psychologists were found (a) to

spend more time with patients, (b) to provide a wider variety of patient care services, and (c) to treat more patients having concurrent medical disorders. Psychologists performed all biofeedback and behavioral assessment procedures and nearly all psychological testing evaluations. Both provider groups treated all of the same patient diagnostic categories, with some variation in patient diagnostic frequency; neither group utilized ancillary medical procedures to any significant degree in its evaluation and management of patients.

The analysis of psychological testing evaluation data was particularly informative. This data revealed psychological testing evaluation to be a work intensive, lengthy, and complex diagnostic process, performed almost exclusively by psychologists. There was significant variation in time spent, depending upon the type of psychological assessment performed (i.e., personality, intellectual, neuropsychological, or a combination thereof). The significant variation in the amount of direct provider time required by psychologists depended upon (a) the complexity of the case, (b) the type of assessment undertaken, and (c) whether a psychological assistant was utilized. There was also significant variation in the frequency with which types of evaluations were performed, with personality assessments accounting for almost one-half of all psychological testing evaluations. In addition, there was significant variation in the number of visit days typically involved in an assessment, again varying with complexity of the evaluation. Time for psychological testing evaluation varied from approximately 2 hours for the least intensive evaluation, (based upon total time and direct psychologist time required when an assistant was available) to over 10 hours for complete neuropsychological evaluations, which were the most complex evaluations reported. In fact, the data base revealed a small cluster of evaluations that required an average of 17 hours each. These were complete neuropsychological evaluations with "other," meaning they involved forensic, disability, and/or rehabilitative evaluative components in addition to complete neuropsychological evaluations, which themselves included personality and intellectual testing.

Conclusion

The present study is an evaluation of psychiatrist and psychologist patient care services from the Army's Ambulatory Care Data Base.

The data from the present study did not reveal any evidence that psychiatrists performed patient care or medical services in any manner different from psychologists, with the exception that they prescribed medication. Psychologists were found (a) to spend more time with patients, (b) to provide a wider variety of patient care services, (c) to treat more patients with concurrent medical disorders, (d) to perform nearly all psychological testing evaluations, and (e) to be the sole medical professionals

performing biofeedback and behavioral assessment. Both provider groups treated all of the same patient diagnostic categories, with some variation in patient diagnostic frequency, and neither group utilized ancillary medical procedures to any significant extent in its evaluation and management of patients.

This data revealed that psychologists are the almost exclusive providers of psychological testing evaluation, which is a work intensive, lengthy, and complex diagnostic process. Three significant variations were found: (a) time spent in evaluation, depended upon the type of assessment performed (e.g., personality, intellectual, neuropsychological, or a combination thereof; (b) the amount of direct provider time required by psychologists, which depended upon three factors--the complexity of the case, the type of assessment undertaken, and whether a psychological assistant was utilized; (c) the frequency with which types of evaluations were performed, with personality assessments accounting for almost one-half of all psychological testing evaluations; and (d) the average number of visit days involved in an assessment, which, again, varied with the complexity of the evaluation.

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