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NEUROLOGIC AND PSYCHIATRIC CO-MORBIDITY IN NEUROPSYCHIATRY TRAINING

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BACKGROUND: Little guidance exists on how many patients or diagnoses must be seen in training to establish competency in neuropsychiatry. Combined neuropsychiatry training is well established, but the overlap between patients seen in neurology and psychiatry is poorly characterized.

METHODS: Case logs of 1552 training patients and 300 psychiatry moonlighting patients evaluated over 5 years by a recently graduated combined neuropsychiatry resident were analyzed for diagnostic distribution using DSM-IV and ICD-10. In cases where ICD-10 differed from DSM-IV, the ICD-10 classification was used to allow greater specificity of neurological and medical diagnoses. Patients were also classified as "psychiatric," "neurologic," "both," or "neither." Data were analyzed by service (neurology vs. psychiatry) for age distribution, DSM-IV diagnosis, ICD-10 diagnosis, quantity of "neuropsychiatric" patients, and presence of psychiatric and neurologic comorbidity.

RESULTS: Using DSM-IV: Of 735 patients evaluated during psychiatry training, 564 (77%) had only psychiatric pathology, 26 (4%) had only neurologic pathology, 132 (18%) had both and 13 (2%) had neither. Of 817 patients evaluated during neurology training, 27 (3%) had only psychiatric pathology, 486 (59%) had only neurologic pathology, 300 (37%) had both, and 4 (0%) had neither (FIGURE ONE). Of 300 patients seen during psychiatry moonlighting, 241 (80%) had only psychiatric pathology, 2 (1%) had only neurologic pathology and 57 (19%) had both. 26% of patients seen during the neurology portion of training had mood, psychotic, or anxiety disorders. Using ICD-10: Of the 1552 cases seen, 435 (23.5%) had a neurological diagnosis, 857 (46.3%) had a psychiatric diagnosis, and 453 (24.5%) had both neurologic and psychiatric diagnoses. 71% of the total group had a psychiatric diagnosis and 48% had a neurologic diagnosis when patients are classified allowing dual group assignments for the "both" group. 19.7% of patients seen in psychiatry and 42.8% of patients seen in neurology had a comorbid diagnosis from the other field using ICD-10.

Average age of patients seen was 51.0 (SD 18.8) on Neurology, 39.8 (SD 18.5) on Psychiatry, and 29.6 (SD 18.8) in the psychiatric moonlighting control group (which included an adolescent unit). Average ages of patients with purely psychiatric diagnoses was 34.9 (SD 17.9), purely neurologic diagnoses 52.0 (SD 24.8), and both neurologic and psychiatric diagnoses 46.7(SD 20.4) (FIGURES TWO & THREE).

Combined neuropsychiatric diagnoses were seen with approximately equal frequency (16-18%) on psychiatry, neurology, and neuropsychiatry services. TABLE ONE shows specific service rates.

Psychiatric diagnostic groups seen on neurology and psychiatry services are compared in FIGURE FOUR. Specific psychiatric and neurologic comorbidities for various diagnoses are shown in TABLE TWO. Neurological comorbidity was highest among childhood psychiatric disorders (48%) with mood disorders 18% and substance abuse disorders the lowest at 9%. Psychiatric comorbidity was highest for mood disorders in headache patients (25%), multiple sclerosis (22%) and Parkinson disease (21%). Psychosis was found in 7% of dementia, 5% of epilepsy, and 4% of Parkinson disease. Substance abuse was found in 9% of epilepsy and 5% of headache and chronic pain cases. Medical comorbidities seen most frequently in the entire group were cardiovascular (21%) and endocrine (16%) (TABLE THREE).

FIGURE ONE: DSM-IV PATIENT TYPE BY TRAINING SERVICE

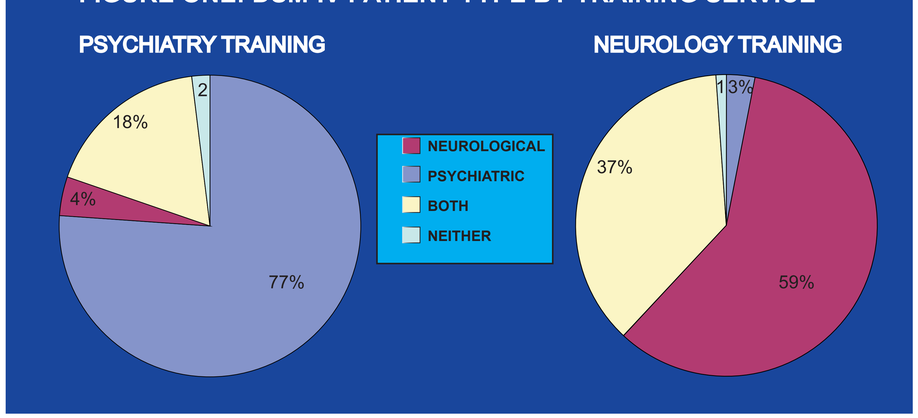

FIGURE TWO: AGE BY PATIENT TYPE

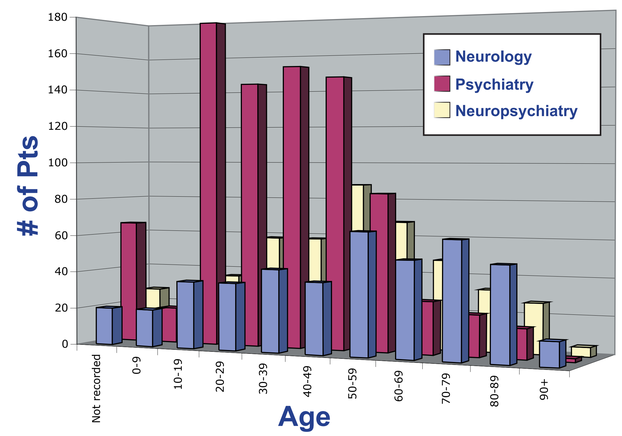

FIGURE THREE: AGE BY LOCATION

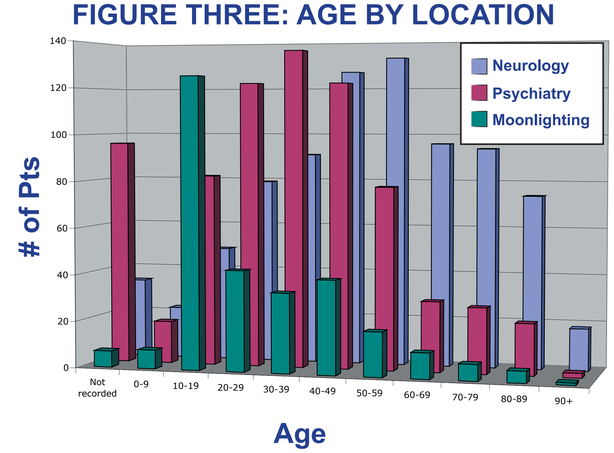

TABLE ONE: WHERE ARE NEUROPSYCHIATRY PATIENTS SEEN?

SERVICE	NUMBER	%
Psych wards	83	18.3%
Neurology clinic	79	17.4%
Neuropsychiatry	71	15.6%
Neurology consult	63	13.9%
Emergency Psych	44	9.7%
Neurology wards	33	7.3%
Neuro E/D consult	28	6.2%
Psychiatry clinic	25	5.5%
Psychiatry consult	13	2.9%
Pediatric neurology	6	1.3%
Neuroophthalmology	4	0.9%
Child psych	3	0.7%
Neurosurgery	2	0.4%

TABLE THREE: OVERALL FREQUENCY OF ICD-10 DIAGNOSES

ICD-10	Area	Percent
5	Mental/Behavioral	70.8%
6	Nervous System	48.0%
9	Circulatory System	21.2%
4	Endocrine/Metabol	16.1%
13	Musculoskeletal	6.5%
10	Respiratory System	6.0%
1	Infectious	4.8%
2	Neoplasms	4.4%
14	Genitourinary	4.1%
11	Digestive	4.0%
7	Eyes	2.5%
18	Symptoms, Labs	2.2%
3	Hematologic	2.1%
17	Congenital	1.5%
19	Injury/Poisoning	1.4%
8	Ears	0.6%
12	Dermatologic	0.6%

FIGURE FOUR: PSYCH DIAGNOSIS BY SERVICE

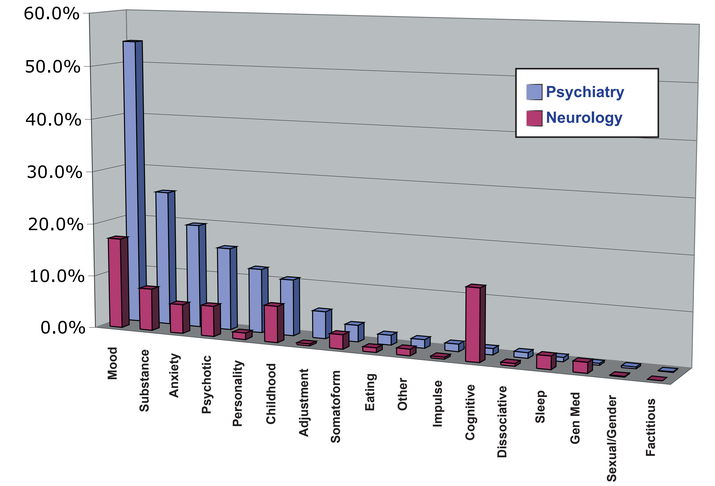

TABLE TWO: PSYCHIATRIC COMORDIBITY IN NEUROLOGIC DISEASES

Condition	% AAN Survey[1]	# in residency	% Psych Dx	% Mood	% Psychosis	% Substance
Headache	77.4	95	40	25	0	5
Parkinson disease	75.1	24	42	21	4	0
Alzheimer disease	68.1	30	47	10	7	3
Stroke	64.0	119	26	8	2	4
Myasthenia gravis	60.2	1	0	0	0	0
Spine and limb pain	47.6	41	34	17	0	5
Huntington disease	34.2	1	0	0	0	0
Muscular dystrophy	33.7	0	0	0	0	0
Epilepsy	25.6	147	41	14	5	9
Multiple sclerosis	21.5	18	33	22	0	0

DISCUSSION: Data from a single experience study such as this are highly influenced by the case mix peculiar to a single teaching program, the rotation lengths, and by the diagnostic practice of the single trainee assigning diagnoses. However, a single rater assigning diagnoses over 5 years offers some consistency. The similarity between the psychiatric diagnostic frequencies in the psychiatry residency patients and the mixed psychiatric hospital "moonlighting" patient population suggests some generallizability within psychiatry. With only 22 residents in the 9 ABPN-approved combined neuropsychiatry programs, a large scale competency study would be difficult.

CONCLUSIONS: Although a neuropsychiatry teaching clinic is considered one indicator of quality in neuropsychiatry programs, these data indicate that psychiatric inpatient units and neurology clinic and consultation services are also excellent venues for neuropsychiatry teaching. Medical comorbidity data suggests that rotations in cardiology and endocrinology might be useful during the Neuropsychiatry PGY-1 year. Twice as many neurological patients (42.8%) had co-morbid psychiatric conditions then psychiatric patients had neurological conditions (19.7%). These data both reinforce the need for more rigorous psychiatric training of neurology residents and reflect one advantage of conducting the bulk of psychiatry training prior to the bulk of neurology training in combined Neuropsychiatry programs. Comparison of case mix between combined training and neuropsychiatry fellowship programs would be interesting in light of recent UCNS recognition of neuropsychiatry fellowship training[2]. Additional data such as these are needed to help establish competency criteria for neuropsychiatry training.

REFERENCES:

1. American Academy of Neurology, Survey of Neurologic Practice, 2000.

2. Benjamin S, Educational Issues in Neuropsychiatry, Psychiatric Times, August, 2004, Vol 21, No.9, 72-74.