

Teaching Programs in the Epidemiology of Mental Health

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AS a first step toward increasing the amount and quality of work in mental health epidemiology, the Center for Epidemiologic Studies of the National Institute of Mental Health, Health Services and Mental Health Administration, Public Health Service, in 1968 carried out a survey of a number of departments in medical schools, schools of public health, graduate schools, schools of nursing, schools of social work, and residencies in psychiatry and public health. The survey was initiated to provide information on teaching the epidemiology of mental health for use in program planning and development.

Mental health epidemiology was described in the survey as "the scientific study of the incidence, course, and patterns of mental illness and mental health in defined populations for the purpose of understanding primary and contributory causes of mental illness or health. Mental health epidemiology includes ecological study of the interaction of biological, social,

environmental and other factors which determine mental disease or health; the study of the natural history of mental illness; evaluation of the effectiveness of mental health programs serving defined populations; and the study of social institutions and processes established to prevent and treat mental illness insofar as these influence case definition and course of illness." Respondents were asked to include alcoholism, behavior disorders, drug addiction, mental retardation, and suicide in the scope of mental disorders.

Teaching was defined as "one or more complete sessions bearing on mental health epidemiology."

Survey Procedures

On April 15, 1968, a structured questionnaire and covering letter were sent to 1,158 program directors, deans, and department chairmen listed in commonly available directories. The addressees represented the major training programs and academic disciplines likely to be concerned with the epidemiology of mental health. In May 1968 all nonrespondents were telephoned for replies; occasionally the information requested was taken over the telephone.

Results

Of the 1,158 questionnaires mailed, 834 were returned by the cutoff date, August 1, 1968. The response rate was 72 percent. The lowest response rate for the major types of respondents

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was among graduate school departments of sociology, psychology, and anthropology, with 65 percent responding.

The survey included 191 departments in 89 medical schools (table 1); of the 89, 80 were accounted for in the returns. Mental health epidemiology was taught in one or more departments of 50 of these schools, and 52 percent of the responding departments reported that they taught the subject. It was being taught in 69 percent of the responding departments of psychiatry and in 41 percent of the responding departments of preventive medicine and public health. In most instances, where the subject was taught, it was a required subject. Few departments offered a full course in mental health epidemiology. In 10 medical schools, none of the departments surveyed reported teaching mental health epidemiology. In 25 percent (20) of the responding medical schools, the departments either did not reply to the question or did not provide enough information to determine whether they taught the subject. Based on the

available data it would seem that one-eighth to one-third of the medical schools did not teach mental health epidemiology in 1968.

Seventy-five percent of the 491 residency programs surveyed responded (table 1). In a few instances the responses were duplications because some residencies were listed more than once in the directory of the American Medical Association. Residencies in public health include preventive medicine, occupational medicine, and aerospace medicine. Although mental health epidemiology was taught in almost half of the residency programs in psychiatry and child psychiatry, less than one-fifth of the residencies in public health taught it.

A total of 82 departments in 13 schools of public health were surveyed, and 54 or 66 percent of the departments replied (table 1). Replies were received from at least one department in every school contacted.

Twenty-eight or 52 percent of the responding departments reported that they taught mental health epidemiology. Fifty-eight percent of

Table 1. Teaching programs in mental health epidemiology (MHE)

Department respondents	Number surveyed	Percent responding	Percent of respondents		
			Teaching MHE	Requiring work in MHE	Teaching at least one course in MHE
Schools of medicine:					
Psychiatry ¹	95	71	69	57	5
Public health ²	73	77	41	41	2
Other ³	23	57	15	15	0
Residency training programs:					
Psychiatry	310	77	42	37	8
Child psychiatry	113	73	40	34	1
Public health ⁴	68	87	19	10	2
Schools of public health:					
Epidemiology	15	80	58	50	25
Mental health	13	100	92	69	38
Other ⁵	54	54	31	17	3
Schools of nursing and social work:⁶					
Nursing	48	83	63	63	5
Social work	74	78	83	76	4
Graduate schools:					
Sociology	99	58	54	9	4
Psychology ⁷	120	72	41	13	7
Anthropology	53	62	42	6	6

¹ Includes departments of medical psychology and behavioral science.

² Includes departments of preventive, social, and community medicine.

³ Includes departments of international, experimental, and environmental medicine and biometry departments.

⁴ Includes residency training programs in preventive

medicine, occupational medicine, and aerospace medicine.

⁵ Includes departments of biometry, maternal and child health, medical care organization, health education, chronic disease, and gerontology.

⁶ Offering master's and doctoral programs.

⁷ Includes social, clinical, and general psychology.

Table 2. Interest expressed by 834 departments in increasing the teaching of mental health epidemiology

Department respondents	Percent interested	Percent not inter- ested	Percent with no infor- mation
Schools of medicine:			
Psychiatry-----	69	6	25
Public health-----	48	20	32
Other-----	15	31	54
Residency training programs:			
Psychiatry-----	56	13	31
Child psychiatry-----	65	8	27
Public health-----	25	17	57
Schools of public health:			
Epidemiology-----	42	33	25
Mental health-----	54	38	8
Other-----	41	17	41
Schools of nursing and social work:			
Nursing-----	70	20	10
Social work-----	64	12	24
Graduate schools:			
Sociology-----	49	16	35
Psychology-----	40	16	44
Anthropology-----	45	9	45
Mean, all departments-----	53	14	33

NOTE: Some percentages do not add to 100 because of rounding.

the epidemiology departments and 92 percent of the mental health departments reported teaching the subject. Thirty-seven percent of all departments in the schools of public health required work in the subject, and 17 percent were teaching at least one course in it. Most teaching done in the mental health departments was required; the subject was less frequently required in the epidemiology departments. In one school all the responding departments reported that they did not teach mental health epidemiology.

Data for master's and doctoral programs in nursing and social work also are included in table 1. Most of these programs reported that mental health epidemiology was introduced as part of a required course.

Data for academic departments in graduate schools are presented in table 1; 272 departments of sociology, anthropology, and psychology, including clinical and general psychology, were surveyed, with a response rate of 65 per-

cent (table 1). These departments rarely required a course in mental health epidemiology. Fifty-four percent of the sociology departments reported that they taught "in the area," but only two departments of the 57 responding reported that they offered a complete course. Psychology departments, many of which were training clinicians, also reported teaching little about mental health epidemiology.

More than half of the respondents said they were interested in improving the teaching of mental health epidemiology (table 2). The greatest interest was shown by schools of nursing, departments of psychiatry in medical schools, residency programs in child psychiatry, and schools of social work.

Discussion

A large proportion of medical students, psychiatric residents, public health residents, and graduate students of public health have received teaching in mental health epidemiology. However, all departments responding in more than 10 percent of the medical schools reported that they were not teaching the subject. Although more of such teaching was being done in schools of nursing and social work, there was, nevertheless, greater interest in increasing the teaching in schools of nursing and social work than in medical schools, departments of psychiatry and public health, and schools of public health—suggesting that those planning the curriculums in the latter groups were not convinced of the importance of mental health epidemiology. The survey therefore suggests a need for discussing the uses of epidemiology in mental health and mental disorders with these groups.

The successes of epidemiology in other fields of disease control suggest, for example, that greater epidemiologic efforts in mental health would provide a unique insight into the etiology and control of mental disorder. Furthermore, epidemiologic surveys designed to evaluate the impact of new community-based service programs charged with prevention as well as treatment and rehabilitation of the mentally ill could safeguard the investment of the nation's mental health dollar by providing the basic data necessary for program planning and evaluation.

To improve the resources available to those responsible for planning and evaluating com-

munity-based or public mental health programs, the Center for Epidemiologic Studies is initiating a program to support training in mental health epidemiology. In addition, the Center is also initiating a series of publications to assist mental health professionals and epidemiologists. The initial publication, "Epidemiology of Mental Disorders, a Bibliography, 1966-1968," is now available from the Center for Epidemiologic Studies. These activities will help to guide the few existing mental health epidemiologists to train the needed manpower.

Summary

In 1968 the Center for Epidemiologic Studies, National Institute of Mental Health, surveyed the teaching status of mental health epidemiology in 1,158 professional and academic departments and training institutions. Of the 72 percent that responded, only 6 percent offered complete courses in mental health epidemiology, and only half offered even a limited

amount of organized class discussion. Public health-preventive medicine residencies reported the lowest rates of teaching encountered in the survey (19 percent), while mental health departments in schools of public health, at 92 percent, reported the highest teaching rate. Interest in increasing current teaching seemed somewhat more related to already existing activity than to programs that did not include mental health epidemiology at the time of the survey.

On the premise that these data may help account for the current under-utilization of epidemiologic techniques in the field of mental health, the Center for Epidemiologic Studies has initiated a new program of curriculum development, publication, and training grant support.

TearSheet Requests

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Practical Nurses in the Health Labor Forces

A married woman who is over 25 years of age when she enters a practical nursing school is a better bet for remaining in the health labor force than the younger, unmarried woman. A recent report of a study, "Five Years After Graduation," made by the National League for Nursing traced the careers of 3,014 students who entered 117 practical nursing schools in 1962.

The practical nurse likely to be the most stable in the health labor force is (*a*) over 25 years of age when she enters nursing school, (*b*) married to a semiskilled or unskilled worker, and (*c*) comes from a modest- or low-income family, and may or may not be a high school graduate.

Of the students entering practical or vocational nursing schools in 1962, almost all (98 percent) were female, approximately one-half were over 20 years old, a third were married, and another 10 percent had been married at one time. Of those who were married or who had been married, 83 percent had children.

Age and marital status appear to have a

direct bearing on the participants' work life in nursing. In the groups entering school at age 25 or over, 69.6 to 73.3 percent were working full time 5 years after graduation. On the other hand, for students who had entered nursing under the age of 25, the percentage working full time 5 years later ranged from 44.8 to 57.7 percent. For all age groups, 57.6 percent were working full time 5 years later and 14.4 percent were working part time.

Only a few of the practical nurses went on to qualify for registered nurse licensure, the report pointed out. The authors, Lucille Knopf, Barbara L. Tate, and Sarah Patrylow, recommended that a plan for offering financial assistance to practical nurses who wish to become registered nurses be developed and tested to determine its usefulness in bringing about more upward movement of the interested and qualified.

The 79-page report is available from the Publications Unit, National League for Nursing, 10 Columbus Circle, New York, N.Y. 10019, for \$3.

KAKU, KANAE (Regional Medical Program of Hawaii), **GILBERT, FRED I., Jr.**, and **SACHS, RALPH R.**: *Comparison of health appraisals by nurses and physicians. Public Health Reports, Vol. 85, December 1970, pp. 1042-1046.*

A comparative study of four registered nurses' and seven physicians' observations in the health appraisal of apparently well persons was undertaken by reviewing and evaluating 1,000 patients' records. The objective was to see how well nurses who received 3 months of additional inservice training could perform physical examinations and make diagnoses. The physicians' examina-

tions were the criteria for determining the accuracy of the nurses' findings.

In 10.3 percent of the 16,000 independent variables, there was positive concurrence of findings by physicians and the nurses. Both physicians and nurses concurred that there was no finding in 70.3 percent of the variables. In 5 percent of the variables, physicians

found a sign or symptom that nurses did not. In 14.4 percent of the variables, nurses found signs but physicians did not. Nurses had a tendency to record findings more completely than physicians. These notations generally pertained to observations of skin pigmentation and scars as well as auscultation of functional heart and breath sounds.

In view of the results of this study, there were few serious differences in recorded findings when the nurses and the physicians examined the same patients. For further validation of this observation, more fully controlled studies will be necessary.

DiSALVO, ARTHUR F. (South Carolina State Board of Health), **BIGLER, WILLIAM J., AJELLO, LIBERO, JOHNSON, JOSEPH E., and PALMER, JOSEPH**: *Bat and soil studies for sources of histoplasmosis in Florida. Public Health Reports, Vol. 85, December 1970, pp. 1063-1069.*

An autochthonous case of histoplasmosis in a college student in Florida, the second case on record in the State, was the impetus for an investigation of the distribution of *Histoplasma capsulatum* in bats and their environment. The patient had explored a sinkhole cave that was inhabited by bats.

H. capsulatum was isolated from one of 20 *Myotis austroriparius* collected from this cave. Examination of cave dwelling bats demonstrated

this fungus to be present in 48 percent of the 170 bats of this species only. Bats from which *H. capsulatum* was isolated were collected in the vicinity of Floral City, Gainesville, Marianna, Newberry, Ocala, and Tampa, Fla. *H. capsulatum* was not isolated from the 101 *Pipistrellus subflavus* or 71 *Tadarida cynocephala* specimens studied.

H. capsulatum was also isolated from 10 of 147 guano-enriched soil samples (6.8 percent) collected in

nine bat caves. *M. austroriparius*, the only species found to be infected with *H. capsulatum* in Florida, is known to prefer caves with permanent pools of water and a relative humidity of 99 to 100 percent. It is suggested that the wet caves may tend to inhibit spore dispersal and thereby account for the low rate of histoplasmin sensitivity and the rarity of clinical histoplasmosis among native Floridians.

Prolonged incubation up to 8 weeks increased the yield of *H. capsulatum* from bat tissue with 10 percent of the isolates not appearing until the fifth to eighth week.

KELsay, RONALD C. (University of Louisville School of Medicine): *Food poisoning outbreak in Kentucky traced to creamed turkey. Public Health Reports, Vol. 85, December 1970, pp. 1103-1108.*

An outbreak of food poisoning among 229 conventioneers was statistically traced to creamed turkey. The investigation was conducted by the Louisville and Jefferson County Department of Public Health and the Kentucky State Department of Health.

Of the 441 persons who were served the suspect meal, 390 were interviewed, and 161 of these did not become ill. The average (mean) incu-

bation period as measured by symptom latency was 12 hours and for the largest number of persons (mode) it was 13 hours.

Diarrhea, cramps, and nausea, in that order, were the most common symptoms. Only 34 persons reported that they received medical aid; one of those required hospitalization. The average duration of the illness was believed to have been 27 hours. The symptoms were mild in the ma-

jority of cases, but there was one fatality which may have resulted from this outbreak.

There was insufficient evidence to determine whether the contaminants were internal and unkillable by undercooking or external and contracted through unsanitary conditions after cooking. The epidemiologic data and laboratory reports suggest *Salmonella* or *Streptococcus* food poisoning of unknown etiology or both. The investigation was limited by the statewide distribution of the diners' homes, the lateness of reports of illness, and lack of direct food samples for laboratory analysis.

ADAMS, MORTON S. (University of Rochester School of Medicine and Dentistry), **BROWN, KENNETH S.**, IBA, BARBARA Y., and NISWANDER, JERRY D.: *Health of Papago Indian children. Public Health Reports, Vol. 85, December 1970, pp. 1047-1061.*

Examinations of newborn and school-age Papago children were performed to obtain information on genetic and environmental factors contributing to mortality and morbidity of this tribe. Mortality among 134 infants born from July 1965 through December 1967 was 5 percent. Two children were stillborn and five died during the neonatal period. During the first year of life more than half of the infants were hospitalized. Most frequent causes were gastrointestinal illnesses, mostly bacterial diarrhea, and upper respiratory illnesses, mostly tracheobronchitis and pneumonia. The average hospital stay was 16 days. The children averaged 3.2 outpatient visits for respiratory infections, 1.4 for diarrhea, and 1.1 visits for other complaints.

Analysis of travel time from home to hospital indicated that children who lived close to the hospital at Sells, Ariz., used outpatient services

more than children whose families lived further from the hospital.

Mean birth weight of the 134 infants was 116.94 ounces. For the first 6 to 8 months, weight growth of the 124 children still available for examination followed a curve similar to that for white infants. But before the end of the first year, the Papago fell behind the white infants.

Weight and height measurements of more than 900 school children showed that the Papago stature was similar to that of white children; weights however, increased dramatically, beginning at 8 years among the girls and a year later among the boys. White children of both sexes have higher ponderal indexes than the Papago at all ages, and the difference increases with age up to 14 years. The ponderal index differences are almost entirely a reflection of weight gain among the Papago.

Glucose tolerance test of 137 boys and 155 girls revealed two children

with blood sugar levels of more than 210 mg. per 100 ml. Data on 323 children and adults indicated that visual acuity differed between the old and young and, at younger ages, between the sexes.

The dental status of Papago children is characterized by low caries rates, moderate to severe fluorosis, moderate abrasion, and relatively poor oral hygiene with an accompanying high prevalence of gingivitis.

Certain Papago characteristics—their uniform socioeconomic conditions, preservation of cultural patterns, and relative absence of miscegenation as well as extensive records of lineage—make the Papago good subjects for genetic studies. Certain malformations did not occur at all in the Papago during the study period, but myelodysplasia and microphthalmia occurred with extremely high frequency. Seven cases of myelodysplasia—two main clusters and one sporadic case—were identified. Four cases of microphthalmia were diagnosed among the residents of one district of the reservation in southwestern Arizona.

NOBMAN, ELIZABETH D. (University of California, Berkeley), and **ADAMS, SIMONE:** *Survey of changes in food habits during pregnancy. Public Health Reports, Vol. 85, December 1970, pp. 1121-1127.*

Forty-six pregnant women attending two prenatal clinics were interviewed via a questionnaire developed for this study to determine the adequacy of diet during the period of pregnancy, the changes in dietary habits during this time, and the reasons stated which contributed to these changes. Also explored were other factors associated with changes in food habits.

In the clinic with more consistent dietary advice, the patients' dietary intakes improved. Using milk and

cheese consumption as an indicator of change, more women reported greater consumption than before pregnancy in clinic A, where increased consumption was encouraged. Such increases contributed to improvements in dietary intakes; however, changes in the diets were not large enough for many of the women to meet the recommended dietary allowances. Vitamin-mineral supplements, when taken, contributed to improved nutrient intakes.

Increases in consumption were more frequent than decreases. In response to the question of why the consumption of a particular food increased or decreased, it was discovered that the woman's appetite was mentioned with greatest frequency. When advice was given consistently by the physician, the diet improved, but the influence of family members and changes in living patterns were mentioned more often than the advice of physicians as reasons for change. The cost of food was not considered to any appreciable extent by these pregnant women in relation to the quantity of food they ate.

QUINN, ROBERT W. (Vanderbilt University School of Medicine), **SPRAGUE, HOMER A.**, and **QUINN, JULIA P.**: *Mortality rates for rheumatic fever and rheumatic heart disease, 1940-65. Public Health Reports, Vol. 85, December 1970, pp. 1091-1101.*

This study, designed to assess the accuracy of reported causes of death attributed to rheumatic fever (RF) and rheumatic heart disease (RHD), revealed certain inaccuracies on death certificates which led to errors in calculating death rates for RF and RHD. A total of 828 certificates for deaths due to RF and RHD in Nashville and Davidson County from 1940-65 were examined.

Inaccuracies in diagnoses recorded on death certificates by physicians were largely responsible for the high crude death rates which over the study period declined threefold among female and fourfold among

male Negroes but less than twofold among whites. However, after verification of cause-of-death and removal of deaths with causes most likely not rheumatic fever or rheumatic heart disease, all significant differences for the rates between the two races disappeared, and there were only slight overall downward rate trends from 1940 through 1965.

Age-adjusted rates were similar for the entire 26 years for males and females, Negroes and whites, but were lowest in the upper socioeconomic group among whites.

Verified death rates for Negro and white women aged 30 or older increased from 1940 to 1955, and de-

clined thereafter, but the change was not statistically significant. Verified rates for Negro and white males declined slightly from 1940 through 1965; from 1940 through 1965 death rates were 11.59 per 100,000 for whites and 13.79 per 100,000 for Negroes.

Age-specific death rates per 100,000 for ages 0-29 years for verified deaths showed a decline from an average of 6.56 in 1940-45 to 1.60 in 1946-55, declining even further to 0.09 in 1956-65; among Negro females there was a slight increase from 1.92 to 3.26.

Age-specific death rates for verified causes in the three older age groups 30-49, 50-69, and 70 or older did not change significantly during any of the three time periods for either whites or Negroes.

MELTZER, JOSEPHINE WILLIAMS (California State Department of Public Health, Berkeley) and **HOCHSTIM, JOSEPH R.**: *Reliability and validity of survey data on physical health. Public Health Reports, Vol. 85, December 1970, pp. 1075-1086.*

The Human Population Laboratory of the California State Department of Public Health conducted two methodological studies to determine how consistently people answer questions about their health when a survey is repeated after a short interval and how closely information collected by survey agrees with that obtained from clinical records.

In a 1965 baseline survey, data on chronic physical complaints were collected by self-administered ques-

tionnaires from a probability sample of adults in Alameda County. Validity, or extent of agreement between the survey information and that obtained from clinical records, was investigated by a record check on respondents in the baseline survey who had been receiving care through a prepaid health plan.

For 739 baseline survey respondents, 54 percent of the chronic conditions reported by questionnaire were reported in their clinical records. Other types of complaint were

less likely to appear in the clinical records than in the questionnaires.

Another sample of 1,530 respondents was used in 1968 to measure reproducibility of interview information. These respondents completed two identical questionnaires, self-administered about a week apart, on their physical health—disabilities, chronic illnesses, impairments, and symptoms.

For the whole set of 33 dichotomous questions on physical complaints, 96 percent of the responses were consistent. Chronic conditions were reported more reliably than other types of complaint, and negative answers were reported more reliably than affirmative answers.

GLOSSER, JAMES W. (Center for Disease Control), and YARNELL E. P.: Rabies control on Guam. *Public Health Reports*, Vol. 85, December 1970, pp. 1113-1120.

Guam's first known rabies epizootic, consisting of 89 reported cases, 12 of which were confirmed, was first detected in March 1967 and was effectively controlled within 8 months; there were no recognized cases of rabies in human beings.

The control program included vaccinating pet dogs and cats and drastically suppressing the unusually large stray animal populations. An embargo was placed upon pets entering the island until dog and cat quarantine facilities could be built, an intensive campaign of education was put into effect, a system of re-

porting and investigating animal bites was established to insure medical attention for exposed persons, all animals who had bitten persons were quarantined and observed, rabies surveillance including laboratory diagnostic services were initiated, and rabies control activities were coordinated between the civilian and military jurisdictions on Guam.

In the last 9 months of 1967, of 995 persons who were exposed to animals, 131 received antirabies treatment, and 4,928 dogs and cats were vaccinated against rabies. In 1967, in the civilian communities, 16,799

dogs and cats were destroyed. The poison, sodium monofluoroacetate 1080, was used in both urban and rural areas. It had not been used officially for the destruction of dogs and cats any place in the United States. This technique is believed to have been instrumental in stopping the epizootic, since the last case of rabies was reported within 1 month after the poisoning program began. No cases of rabies have been reported since October 20, 1967.

The program was successful because of several factors: all jurisdictions cooperated, legislation was enacted to help meet the program's objectives, poison was used to suppress stray animals, and the setting was insular.

deCASTRO, F. J. (Saint Louis University), and MILLER, FRANCES L.: Survey of differences in cost of diets of anemic and nonanemic children. *Public Health Reports*, Vol. 85, December 1970, pp. 1087-1090.

This study was undertaken to compare the cost of food given young children having iron deficiency anemia with that given nonanemic children. A sample of 100 children, 6 months to 3 years, was randomly selected from children coming for pediatric care at the Wayne County General Hospital Acute Care Clinic in Eloise, Mich. This clinic serves a low socioeconomic population.

Identifying data, parental birthplace and educational level, previous 24-hour diet recall, hemoglobin level,

hematocrit value, red blood cell indices, and reticulocyte count were recorded for each child. Children having sickle cell disease or trait, or an identified chronic illness, or who were receiving medicinal iron were eliminated. Criterion for iron deficiency anemia was set at a hemoglobin value of less than 10 gm. per 100 cc. of blood. Food was priced in a restricted randomized sample of grocery stores serving this population, and the cost per child per day was calculated.

The incidence of iron deficiency anemia was 22 percent. The mean hemoglobin level of the anemic group was 7.9 gm. per 100 cc. of blood and that of the nonanemic, 10.9. Statistical analysis of the variables studied suggested that iron deficient anemic children were more frequently children of parents born in the south.

Differences in the cost of food in the diet of anemic and nonanemic children were not statistically significant. These results suggested that, in the population studied, iron deficiency anemia of young children was not directly caused by parents spending an insufficient amount of money on food.