

# A Conversation with Morton Kramer

Jonas H. Ellenberg

*Abstract.* Morton Kramer was born on March 21, 1914, in Baltimore, Maryland. He received an A.B. degree from Johns Hopkins University in 1934 and a D.Sc. in 1939. He is a Fellow of the American Statistical Association, an Honorary Fellow of the American Psychiatric Association and an elected member of the Institute of Medicine of the National Academy of Sciences. He is the recipient of the Health-For-All Medal of the World Health Organization and the Distinguished Alumnus Award from Johns Hopkins University. During his tenure at NIH from 1949 through 1975, he served as Chief of the Biometrics Branch of the National Institute of Mental Health. He was awarded both the Department of Health, Education and Welfare Superior Service and Distinguished Service awards. Since leaving NIH, he was Professor of Biostatistics at the School of Hygiene and Public Health at Johns Hopkins University and in 1984 became Professor Emeritus.

**Ellenberg:** When and why did you come to the National Institutes of Health (NIH) and what was your educational background?

**Kramer:** I joined NIH in May of 1949. The National Institute of Mental Health (NIMH) was established in 1946 and Bob Felix, its first Director, brought me on board to be Chief of the Biometrics Branch.

I was trained in mathematical statistics with a minor in epidemiology by Professor Lowell Reed, Chairman of the Department of Biostatistics, Johns Hopkins School of Hygiene and Public Health. My dissertation was concerned with a frequency surface in two variables, each of which is uniformly distributed. Felix had completed a Master of Public Health degree with Reed, also at Johns Hopkins. Dr. Felix told me that prior to my joining NIMH he and Reed were at a meeting of the Board of Directors of the Milbank Memorial Fund. Reed told Felix that the mental health program he was to implement under the new National Mental Health Act (1946) would never be successful without a strong biosta-

tistical group. So, when Felix reviewed my vita and saw that I had taken a doctorate in biostatistics under Reed, he asked me to come to NIMH. I said, "But Bob, I don't know the first thing about mental health." Felix's response was, "Who knows anything about it at this point? Join me, and we'll show the world what we can do."

**Ellenberg:** When you came to NIMH, was there an appreciation for the usefulness of statistics by the other scientists?

**Kramer:** There was an appreciation for the importance of biostatistics and epidemiology. Nonetheless, we had to demonstrate and maintain an awareness that statistics was highly relevant to the work at hand. Certainly Dr. Felix was very supportive and gave me the financial and other resources to develop an excellent staff. For example, Felix was able to promote me to what was then called the 208-G rank of physicians; the "supergrades" of the Civil Service rankings. Subsequently, I was able to get supergrades for Sam Greenhouse and Cliff Patlak and high grades for all the other people in the Biometrics Branch.

**Ellenberg:** How was the Biometrics Branch at NIMH initially organized?

**Kramer:** The Branch had several sections. Sam Greenhouse was the Chief of the Section on Theoretical Statistics and Mathematics. Cliff Patlak, John Bartko, Karen Pettigrew, Seymour Geisser and Donald Morrison were in the Section. The Section worked primarily with the intramural scientists in

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FIG. 1. *Morton Kramer.*

the Institute. In addition, they developed methodologic research of their own.

We also had a section dealing with the mental hospital statistics of the nation, including a unit that consulted with the states in an effort to improve their statistical systems. At the time that the Institute of Mental Health was created the census of patients in mental institutions was transferred to the NIMH. The Mental Health Statistics Section had as its goal the improvement of the quality, the level of reporting and the comparability of statistics from all of the state mental hospitals in the nation.

In 1952, I set up what was called the Model Reporting Area (MRA) for mental health statistics in order to improve the statistics on the care of the mentally ill in the U.S. We brought in only 10 states initially. The objective was to agree on some basic definitions for terms used in the reporting of patients in the state mental hospitals, and then to agree on some basic tabulations to be produced by each state in a uniform and comparable way. The Model Reporting Area was quite successful. Subsequently, all of the states came in. The MRA became a comprehensive reporting system because we captured not only the data on the patients in public and private mental hospitals, but also data on patients who were under care in the outpatient clinics of the country. Its success was to be long lasting: in mid-1993, the 40th meeting of the National Conference on Mental Health Statistics was held.

**Ellenberg:** What were your sources for recruitment?

**Kramer:** There were very few people working in mental health statistics in the late 1940s. I hired people away from many different places. For example, I hired Hyman Goldstein, Irving Goldberg and Darrell Regier, who were working for the New York State Department of Health; Earl Pollack, from the Cancer Registry in Connecticut; Ben Locke, who was working on tuberculosis statistics in New York State; and Cecil Wurster, who was Chief of the Statistical Bureau in the Department of Mental Hygiene of the state of Louisiana.

**Ellenberg:** You had staff with different types of training in your branch. The people in Sam Greenhouse's Section were mathematical statisticians. Another group of people had less mathematical training. Was this difference in level of training an impediment to collaboration among staff members?

**Kramer:** The degree of interaction within the Branch was high. When specific advice on some mathematical statistical technique was required, the Mental Health Statistics Section collaborated with the people in Sam Greenhouse's Section. This

collaborative relationship extended beyond our own staff to other NIH staff working on the basic and clinical research aspects of mental disorders. This involved quantifying psychiatric disorders and psychological phenomena, which wasn't always easy. For example, one of the things that we did was to develop survival curves for people who were in the state mental hospitals. We utilized this technique very successfully first at Warren State Hospital in western Pennsylvania [7]. We were able to get the cooperation of the Warren State Hospital in establishing cohorts of patients that could be followed over an extended period of time, and allowed for examination of the variations in mortality of initial cohorts that remained in-patients and those that were released alive. We then recruited 10 more states throughout the nation to participate, and for the first time we could produce cohort analyses that provided some very useful information [9].

**Ellenberg:** Did the statisticians feel they were making a substantive contribution to the field of mental health, and were the statisticians accorded authorship or other credit for collaborative work?

**Kramer:** Yes. For example, we had the primary responsibility for preparing the national volumes on numbers of patients in state mental institutions, giving the information on the residents as of the beginning of the year, movements in and movements out, broken down by age, sex, diagnosis, etcetera. We were able to demonstrate to the states that the data collected could be utilized not only scientifically, but also for program planning and evaluation. Everybody got due credit for their work.

Some of the papers we published became classics. The 1955 paper on the Warren State Hospital [7] was recently referred to in an issue of *Psychiatric News* [8] (published by the American Psychiatric Association), which reviewed the history of this important state hospital. These data from the Warren State Hospital Study have been utilized and referenced extensively over the years.

**Ellenberg:** In the early years, did you have a relationship with statistics groups in academic institutions?

**Kramer:** We contributed directly to the development of academic departments. We were able to begin a grants program for schools of public health to train people in mental health statistics. That had a direct impact on the production of well-trained statisticians. For example, we had a program in North Carolina with Bernie Greenberg and his group. We even had summer courses down at North Carolina. We were continually emphasizing the importance of statistics and epidemiology in mental health research.

Through the Model Reporting Area, we created a niche for biostatisticians by encouraging the states to hire people who were trained in university biostatistics or statistics departments, and who knew their way around the mechanics of data collection and analysis, so that they could produce high-quality reports that were relevant to the needs of the state.

**Ellenberg:** Were you involved in studies in collaboration with other countries?

**Kramer:** Yes, for example, the U.S./U.K. Diagnostic Study. It had been noted early on that there was quite a difference in the diagnostic distribution of patients admitted to the British and American mental hospitals. I produced data that demonstrated that the rate of admission into the hospitals of England for manic-depressive disorders was 10 times that in the U.S. [4]. We set up a project with the cooperation of the leading psychiatrists in Britain, including the late Professor Sir Arthur Lewis, Michael Shepard, John Wayne, John Cooper and others, with the goal to determine the reason for this disparity between the British and the American statistics.

We developed a standardized diagnostic instrument which was used in both mental hospitals in Britain and in the U.S. [5]. Using this instrument, we saw that the differences between the U.K. and the U.S. could be attributed to differences in training of psychiatrists in Britain and the U.S. [6]. This demonstrated dramatically the need to have standardized comparative studies done in different countries. This work had a considerable impact on the recognition of the need to develop good diagnostic criteria for mental disorders that could be used both nationally and internationally in order to gain comparable statistics.

I was also a consultant for the World Health Organization during my later time at NIMH, travelling to 25 or more different countries to help them develop basic statistical and epidemiologic studies on mental disorders.

**Ellenberg:** Could you describe the scientific philosophy and organizational structure of NIMH during your tenure there?

**Kramer:** Bob Felix's philosophy was that he wanted to have the Institute's intramural research results go directly from "the bench to the field." So he developed both strong clinical and basic research programs. He also had a training program in psychiatry, psychology and psychiatric nursing, where grants were given to universities to increase the numbers of psychiatrists who were in training, and the training curriculum was designed to include relevant new research results. In addition, a group called Community Services helped the states

establish mental health programs and improve the programs that were ongoing. All of the approaches were linked together to meet his goals.

The organizational structure developed in an erratic fashion. NIMH was initially set up in parallel to all of the other NIH Institutes. Then NIMH was put into the Health Services and Mental Health Administration (HSMHA). Subsequently, Mental Health took on not only the mental disorders but alcohol, drug abuse and neurological disorders. Then separate institutes were developed: the National Institute of Neurologic Disorders and Stroke (NINDS); the National Institute on Alcohol Abuse (NIAA); and the National Institute on Drug Abuse (NIDA). Recently the basic research programs of the former HSMHA went into the NIH, and the other programs remained in the Substance Abuse and Mental Health Administration (SAMHA). Despite these organizational changes, we kept going on in our work relatively unimpeded.

**Ellenberg:** Would you characterize the contributions of the major figures, such as Sam Greenhouse, as being primarily in the design of studies, in the analysis of studies or more in methodologic research on problems generated from NIMH studies?

**Kramer:** It was all three. It was design, analysis and then doing some independent research, to develop methods that would be appropriate for some of the problems being dealt with in collaborations. For example, Greenhouse and Seymour Geisser wrote the classic paper on profile analysis [2] in response to problems arising in the analysis of psychiatric profiles.

**Ellenberg:** During your tenure at NIH, how would you assess the impact of the Biometry Branch on the programs of NIMH and the field in general?

**Kramer:** I think we had a tremendous impact, and it has continued. In a recent book by Gerald Grob, professor of the history of medicine at Rutgers University, there were some very complimentary comments on the work we did at the NIMH and the impact this work had on the field [3].

Another example of the impact biometry has had on the field of mental health is demonstrated by the Epidemiologic Catchment Area Program (ECAP). ECAP was first suggested while I was at NIMH, although we didn't yet have available good case finding techniques for its implementation. After I left, Darrell Regier and Lee Robins (from Washington University in St. Louis) developed what was called the Diagnostic Interview Schedule (DIS), which took all the criteria for diagnoses in the American Psychiatric Association *Diagnostic and Statistical Manual* and turned them into ques-

tions which could then be administered by a lay interviewer. The responses to the questions were used with a computer algorithm to generate diagnoses. The development and testing of the DIS by the Branch allowed for the implementation of the ECAP.

At the 1993 meeting of the National Conference on Mental Health Statistics, I presented a paper on population changes and their impact on mental health programs. The population changes that have taken place indicate very high increases in Asians and Hispanics, smaller increases in blacks and very low increases in whites. We demonstrated the impact of these population changes using data from the Epidemiologic Catchment Area Program [1].

One of the programs that I introduced while at NIMH was the assessment of prevalence of mental disorders among different kinds of households. Not only have there been changes in the age, sex and racial composition, but there have been tremendous changes in the living arrangements of the population. For example, there has been an increase in people living alone, and an increase in the number of households headed by females without spouses and with children under 18. Just as the presence of mental disorders and behavioral problems can have an effect on the household, the household can have a marked effect on whether patients can carry through on treatment regimens that have been given to them as part of their recuperation and disease management. This is extremely important because duration of stay for patients who are hospitalized has been reduced to a minimum.

These population changes are important for community programs, for understanding how effective treatments can be and also in trying to understand the factors that are exacerbating mental health problems more rapidly than society can deal with them.

**Ellenberg:** Do you feel your work has been appropriately recognized?

**Kramer:** Some people have called me the father of mental health statistics. I certainly cannot complain of a lack of honors. I was given a number of awards, such as the Distinguished Service Award from the Public Health Service "for outstanding leadership in achieving the use of statistics in mental health in the United States and internationally." Recently I was made a distinguished alumnus of the Johns Hopkins University.

**Ellenberg:** I think it's important to proffer the argument that the field of biostatistics has been important for the health of the nation, and so that these accolades, while they are attributed to you personally, might also attest to the impact the field has had.

**Kramer:** I agree. It was because I had a wonderful staff of statisticians that was supporting and working with me that we could accomplish what we did.

**Ellenberg:** When and why did you leave NIMH?

**Kramer:** In 1976 I retired to accept a professorship at Johns Hopkins University in its School of Hygiene and Public Health. The Chairman of the Department of Mental Hygiene, Ernest Grumberg, wanted me to get into academia to help train people for mental health research.

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