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Official Documentation of a Sexually Transmitted Disease (STD): An Empirical Assessment

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Using data from clinic records of patients examined and treated at a public health facility, the reporting of unconfirmed cases is examined and the correspondence between public health profiles of patients at risk to sexually transmitted disease and the data are discussed. Implications relating to the findings and to public health policy are also discussed.

The use of official morbidity reports to determine the prevalence of particular behaviors has long been questioned by behavioral scientists (e.g., Douglas, 1967; Henderson, 1975; Kitsuse and Cicourel, 1963; Maris, 1969; Nye et al., 1958; Porterfield, 1943). Much of this literature suggests that underreporting of the true extent of various phenomena is due to a lack of recognition of the symptoms by officials. More recently it has been suggested that the documentation of official statistics reflect the organizational exigencies operating in the various bureaucracies charged with reporting on their activities (Altheide and Johnson, 1980; Peck, 1983; Peck and Rubin, 1983). Thus, according to some analysts (e.g., Curtis, 1974; Maxwell et al., 1980; Peck, 1983–1984), the validity of official statistics as indicators of morbidity is questionable due to the formal and informal norms operating within organizations which affect data gathering and reporting. In other words, there may be good organizational reasons why official data do not correspond well to the actual social reality (Altheide and Johnson, 1980). In this paper the reporting discrepancy issue is further explored with regard to a sexually transmitted disease (STD), gonorrhea.

Gonorrhea is particularly crucial for analysis in that it is one of the most prevalent sexually transmitted diseases, and it has long been recognized as the most commonly reported communicable disease (Kellogg, 1973; Mascola et al., 1983; Millar, 1971; Wiesner, 1980; Zaidi, et al., 1983). Moreover, the whole range of sexually transmitted diseases have been recognized as a major public health problem, and reports of their incidence should be subjected to critical analysis (Holmes, 1981; Knox et al., 1981; Peck, 1986). Although explanations for the magnitude of the gonorrhea problem vary, inadequate control methods (Peck, 1981), official neglect (Wiesner, 1980), and public apathy and ignorance all play major roles. Corollary reasons often cited include the persistence of negative attitudes toward people who have contracted a sexually transmitted disease (Fox and Edgley, 1983); STD control in general has been a low priority; health care delivery systems are so rigid as to make treatment difficult for many individuals; possible control techniques have not been implemented even in demonstration programs; and, educational efforts have not been appropriately directed to the groups with the highest risk of infection.

Other explanations have also been proffered for the persistence of the gonorrhea problem in the United States. Darrow (1975; 1976) argues that increased sexual activity and the breakdown of traditional sexually-related norms lead to the spread of the disease; permissiveness, promiscuity, and the pill are all partially responsible. He also argues that asymptomatic females constitute the major "reservoir" of the infection. Henderson (1975; 1977) suggests that, instead of asymptomatic females, certain homosexuals, bisexuals and heterosexual females may have knowledge that they have the disease, but they are less likely to seek treatment. Despite knowledge of their infection, they continue to have sexual relations with multiple partners, thus spreading the disease.

Finally, another significant reason for the continued high reported rate of gonorrhea may have little or nothing to do with actual sexual activity or broad, population-based social norms. As was suggested previously, bureaucratic requirements of the organizations most responsible for identifying and reporting gonorrhea may be a primary agent. Such factors as state guidelines, local politics, attitudes of the community, attitudes of pub-

lic health officials, or organizational exigencies (such as needs for continued funding) may cause an overreporting of official epidemiological reports.

Specific cases of overreporting are difficult to identify. However, one source of information available, which allows some assessment of the problem, can be found in clinical medical records which contain the official morbidity reports submitted to state agencies when gonorrhea is reported. In many instances, these reports are based on clinical diagnosis rather than the results of laboratory tests. Therefore, comparison of medical diagnoses with test result outcomes can provide a valuable indicator of any reporting bias, as well as some indication as to the nature of that bias. However, because of the fact that medical records are confidential, evidence must be developed in a more eclectic fashion, using the case study approach. In the following sections the results of analysis of the official epidemiological reports from one major intake and diagnostic clinic are described.

Method

The data for this analysis were drawn from diagnostic and treatment records (763) generated over a one-year period in a major East Coast clinic. Based on information documented in these records, most patients sought assistance from the clinic for a "routine checkup" or because they may have been exposed to a sexually transmitted disease. Located in a regional health department the clinic was opened as part of the nationwide effort to control sexually transmitted diseases. Data were derived from patient records and included such details as the reason for the examination, clinical symptoms, diagnosis or probable diagnosis, treatment administered, and basic demographic information. Also included were the results of laboratory testing for STDs. Data generated from these files were analyzed using both univariate and multivariate techniques. The uneven Ns reported in the tables result from the elimination of cases in which one or more of the variables under consideration were unavailable.

Findings

Of the 763 patients who visited the clinic during the year, 401 were male and 362 were female. Most patients were young, 75% were under age 25, and 90% were under age 30. The vast

majority of patients also were white (n = 694) and single (n = 533). Fifty-eight percent of the patients sought attention due to some symptom of a possible STD, either real or imagined. The most prevalent symptoms were discharge (n = 296), the presence of lesions (n = 64), and burning sensation (n = 40).

Overall, 51.4% of single patients and 51% of the married patients examined were diagnosed clinically as having gonorrhea. By age, 53.3% of those under 25 and 52.1% of those age 25 and older have been clinically diagnosed as having gonorrhea. A total of 146 males and 152 females (39.1% of the patients) were clinically diagnosed as having gonorrhea. Of this number, only 145 (48.7% of those diagnosed) were confirmed by the laboratory test to have the infection. Thus, in this clinic over a twelve month period, over twice as many cases were reported to state officials as occurred in the patient population.

Patterns in Laboratory Test Results and Treatment

Although an approximately equal number of males (n=72) and females (n=73) were confirmed by laboratory tests as having gonorrhea, nearly 71% of all patients who were clinically diagnosed as having gonorrhea and were treated for this infection prior to the return of the laboratory test (n=298) were female. Treatment was administered to the remainder of patients, but the reason for this treatment response was to guard against possible transmission of the infection to others.

Most infected persons were 13–34 years of age. The data reported in Table 1 show that when marital status is controlled the highest proportion of gonorrhea patients, who are married or separated/divorced, are 20–24 years of age. It is also noteworthy that the proportion of infected separated/divorced persons in this age group is substantially larger than for married persons (percentage difference = 15.8) and single persons (percentage difference = 25.4). With the exception of widowed persons (n=3), a category too small to consider for this analysis, the highest proportion of infected gonorrhea patients for the first four age groups (ages 13–34) is found among the separated/divorced group. When the 20–24 single and married groups are compared a larger proportion of married persons are found to be infected (percentage difference = 9.6), while only minor vari-

Table 1

Clinical Diagnosis by Age Controlling for Marital Status (n = 562)[1]

AGE-GROUP	SINGLE					MARRIED				
	Normal	*GC*	*SY*	*Other*[2]	*N*	*Normal*	*GC*	*SY*	*Other*	*N*
13-19	19.8	50.5	4.3	25.2	186	37.5	37.5	12.5	12.5	8
20-24	20.0	51.5	6.6	21.8	165	19.4	61.1	—	19.4	36
25-29	10.3	55.1	10.1	24.1	29	19.4	51.6	9.6	19.3	31
30-34	10.0	50.0	20.0	20.0	10	16.7	50.0	8.3	25.0	12
35-39	—	75.0	—	25.0	4	20.0	40.0	—	40.0	5
40-44	—	—	—	—	—	—	—	—	100.0	2
45-65	—	33.3	33.3	33.3	3	75.0	25.0	—	—	4

AGE-GROUP	SEPARATED/DIVORCED					WIDOWED				
	Normal	*GC*	*SY*	*Other*	*N*	*Normal*	*GC*	*SY*	*Other*	*N*
13-19	33.0	66.6	—	—	3	—	—	—	—	—
20-24	3.8	76.9	11.5	7.7	26	—	—	—	—	—
25-29	10.0	65.0	10.0	15.0	20	100.0	—	—	—	1
30-34	—	60.0	—	40.0	5	—	100.0	—	—	1
35-39	42.9	42.9	—	14.2	7	—	—	—	100.0	1
40-44	—	100.0	—	—	2	—	—	—	—	—
45-65	100.0	—	—	—	1	—	—	—	—	—

1. The diagnosis for gonorrhea is designated by the acronym GC, whereas SY is used to represent syphilis.
2. The other category includes non-specific vaginitis and urethritis, rash, crabs, and various forms of female infections.

ation in the proportion of infected single and married persons is found for the 25–34 age groups.

Factored Results

The social background information contained in the patient files, reason for seeking an examination, symptoms, possible exposure, clinical diagnosis, treatment, if any was administered (either preventive or in response to an active case of gonorrhea) and test results were subjected to a factor analysis.[1] A principal components analysis was applied to the correlation matrix; the Scree Test (Cattel, 1966) revealed that three factors should be retained for rotation. All factors also met the Kaiser-Guttman criterion of the minimum eigenvalue equal to unity. A Varimax Orthogonal Rotation was applied to the factors followed by a

Table 2

Factor Pattern

	Factors		
Variables	Social	Medical	Exposure
Age	.94	.10	−.01
Sex	.81	−.11	.00
Race	.57	.07	.16
Marital Status	.60	.113	−.29
Reason	.16	.43	.01
Symptomology	.92	.14	.04
Exposure	.01	.04	.95
Diagnosis	.02	.78	−.01
Treatment	.66	.53	.02
Test Results	.18	.60	.07

Promax Oblique Rotation. All variables loading at .35 or greater were used to interpret the resulting oblique factors.

The key issues of interest in this study involve the clinical diagnosis, test results, and the nature of the rationale for treatment of gonorrhea. Interestingly, the variable "treatment" loads on both Factors I and II, while test results loads only on Factor II, as does clinical diagnosis.

Factor I appears to be largely a social characteristics factor. Variables loading on this factor include the patient's age, sex, race, marital status, presence of symptoms and nature of treatment. When these variables are viewed from a multivariate perspective, patients who receive high scores on Factor I would be most consistently coded highly on each variable. Starting with the treatment variable, patients who received medical treatment for gonorrhea would be young, white males who would show some symptoms of the illness. Conversely, single, nonwhite women showing no symptoms would be most likely to receive preventive or epidemiological treatment to ensure against the possibility the disease was incubating.

The second factor appears to represent a medical response. Variables loading on this factor include reason for visiting the clinic (regular checkup or symptomology), clinical diagnosis of

the disease, type of treatment, and results of laboratory tests. In this instance, patients who visited the clinic due to possible symptoms of gonorrhea, who were also diagnosed as having the disease and also tested positively in laboratory tests, were reported by the clinic as having been treated for medical, rather than for being in contact with a possible carrier of gonorrhea. Therefore, Factor II seems to represent a much stronger medical model than does Factor I.

The third factor is also of interest in that it is a unitary factor which loads on possible exposure. Apparently, patients' statements of possible exposure to the disease through sexual contact are a distinct dimension in this particular data set. It is also noteworthy that, despite the Promax rotation, each factor remained virtually orthogonal with interfactor correlations of .007 to .060.

Discriminant Analyses

The factor analysis revealed that the variables can be empirically organized into social, medical, and exposure dimensions. A second critical question involves the uses of sociodemographic and experiential variables as predictors of the behavior of practitioners in the clinical setting. In particular, answers to the questions concerning the relationships among reasons for seeking treatment, nature of the diagnosis, type of treatment administered, and outcomes of test results all provide significant data on the actual functional assessment of gonorrhea.

Below, the results of multivariate analyses of these issues are reported. In each instance, data were subjected to canonical discriminant analysis using the Wilks' method described by Klecka (1980). A significant reduction in the value of Wilks' lambda (interpreted through an analysis of variance conversion) was used as the criterion for variable inclusion (with F significant at .05). Also, functions were reported where the Wilks' lambda indicated that the function explained significant variance in the residual correlation matrix, based on the same F-test criterion. To assure that the functions derived represented the best "goodness of fit" with the data, all functions were subjected to orthogonal varimax rotation. Though all variables included in the analysis are weighed in the classification of individual cases,

variables loading at .30 or greater are included in the interpretation of the results.

The effects of each function were determined by examining the plots of the group centroids on each dimension. These centroid plots allowed visual estimation of the discriminatory effects of the various functions.

Reasons for Treatment

Clients were classified into five categories according to the predominant reason they gave for seeking treatment (asymptomatic, possible contact with gonorrhea, possible contact with syphilis, a discharge, referral by a health care provider, and self-referral). Independent variables used in this analysis include age (under 20, 20–24, 25–29, 30–35, 36 and over), sex, race (white, black, and other) marital status (single, married, and other), symtomatology, diagnosis, test results for gonorrhea, and type of treatment (none, epidemiological, or specific treatment). The results are shown in Table 3.

Analysis of the data in Table 3 reveals that Functions 1 through 4 remained significant discriminators after rotation. The first function is fairly straight forward in that it is defined by the variable "nature of treatment administered." Examination of

Table 3

Rotated Standardized Discriminant Function Coefficients Predicting Reasons for Examination (N=373)

	Function				
Variables	I	II	III	IV	V
Treatment	.93	.10	−.15	−.00	.01
Diagnosis	.09	.88	.06	.01	.00
Symptoms	−.09	.04	.85	.02	.01
Test Results	−.04	.06	.11	.66	.02
Sex	.22	−.39	.33	.60	−.26
Age	−.09	.02	−.42	.58	−.37
Race	−.07	−.17	.31	−.31	.04
Marital Status	.11	.02	.09	.01	1.12
Wilks' lambda	.27	.71	.82	.94	.98*

*Not significant at P<.05

the group centroids on this function revealed that those clients seeking treatment for exposure to either gonorrhea or syphilis were distinguished from those being examined for other causes. That is, clients who suspected they had possible exposure to either of these diseases were reported more often to have received preventive treatment.

Function 2 represents a more complex dimension than Function 1 in that both diagnosis and client gender exert substantial effects. Examination of the plot of the group centroids on this function reveals that it clearly differentiates clients who may have been exposed to gonorrhea from those who may have been exposed to syphilis; other groups are clustered near the midpoint of the axis. Diagnosis loads in the expected direction with a high positive relationship between declared possible exposure to each disease and the clinical diagnosis of that disease. Inclusion of the gender variable indicates that this function particularly describes the multivariate differentiation between females who may have been exposed to gonorrhea from males who may have been exposed to syphilis.

The third function discriminates those patients who were referred to the clinic by medical practitioners from those clients who indicated that they may have been exposed to syphilis. In this instance, referrals seem to be most affected by the appearance of physical symptoms. The positive end of the function is most closely defined by nonwhite, younger females who exhibited symptoms, whereas the negative end is defined by the asymptomatic, older, white males who may have been exposed to syphilis.

Function 4, the last significant function, separates those clients reporting a urethral discharge (negative end of the function) from other groups. In this instance, nonwhite, younger, males whose test results were positive for gonorrhea were the most likely to be in the group defined. Other categories of clients were clustered at the positive end of the function.

Overall, the magnitude of Wilks' lambda reveals that the nature of the treatment received is the best discriminator among the variables and the function which it defines (Function 1) explains 81.23 percent of the variance in the correlation matrix. The canonical correlation between the reason for seeking ex-

amination and the first function is .78 ($p<.001$). To this point it can be suggested that clinical personnel most closely articulate a course of treatment based on a declaration by the client that he or she may have been exposed to a sexually transmitted disease. The other functions and relationships among variables, though statistically significant, are not of the same magnitude in terms of quality of prediction.

Diagnosis, Test Results, and Treatment

Clinical diagnosis and information for all independent variables were available for 417 clients (see Table 4). The diagnosis variable was treated as the dependent variable and cases were grouped according to diagnosis as "non-STD," "probably gonorrhea patient," or "other STD." The discriminant analysis based on these groupings resulted in two Varimax orthogonally rotated functions. Both functions were significant beyond the .01 level, though both showed only moderate capability to discriminate among the categories (canonical r = .36 and .20 respectively). Elimination of the plots of the group centroids revealed that Function 1 discriminated gonorrhea patients from others and that Function 2 best discriminated between the non-STD diagnosis and "other STD."

The independent variables shown in Table 4 having the greatest effect on Function 1 include test result and type of treat-

Table 4

Rotated Standardized Canonical Discriminant Function Coefficients for Diagnosis (N =417)

	Functions	
Variables	Function 1	Function 2
Test results	.89	−.00
Reason for Examination	−.11	.83
Treatment	−.38	.50
Sex	.10	−.46
Symptoms	.26	.29
Wilks' lambda	.84*	.96**

* P<.001
**P<.01

ment, though test results have by far the greatest effect. On the first function, the centroid for the diagnosed gonorrhea patients is at the negative end of the continuum. Thus, given the direction of coding (positive gonorrhea =0; negative =1), positive test results coupled with treatment tended to be typical of clients who were diagnosed as having gonorrhea (and vice versa). This function, therefore, tends to fit a medical model with one major limitation: clients on the high side of the function, those either with no venereal disease or a nonspecific infection, tended to be treated for gonorrhea on epidemiological grounds. Thus, the positive side of the function is predicted more clearly by negative test results coupled with epidemiological treatment.

Examining more closely those clients who were treated for gonorrhea upon intake, the data (n=699) were divided into two categories: patients who received preventive and those who were treated due to the expectation that they had gonorrhea (see Table 5). In this instance, the one resulting discriminant function is highly significant and is a reasonably strong predictor of group membership (canonical r = .53). The centroid for the epidemiologically treated clients also is positive while the centroid for those treated due to diagnosis is negative. The two best predictors variables are sex and reason given for the examination. Thus, females who were referred to the clinic tend to have been listed as "treated for the disease" while males who indicated they may have been exposed were given preventive treatment.

Table 5

Standardized Canonical Discriminant Function Coefficients for Treatment (N =699)

Variables	Function 1
Age	.17
Sex	−.60
Reason for Examination	.62
Symptoms	.17
Test Results	.18
Wilks' lambda	.72*

*P<.001

Table 6

Standardized Canonical Discriminant Function Coefficients for Test Results (N =388)

Variables	Function 1
Diagnosis	−.75
Race	.60
Treatment	.33
Symptoms	.24
Wilks' lambda	.94*

*P<.001

Finally, examination of the predictors of whether clients would test positively for gonorrhea are reported in Table 6. This function is only a moderate predictor of test outcome (canonical r = .26; Wilks' lambda = .94, p<.001). Clients who tested positively for gonorrhea obtained a centroid on the positive side of the discriminant function. The primary predictors included on this function include diagnosis, race, and treatment. Thus, clients who were diagnosed as probably having a venereal disease other than gonorrhea, were white, showed no symptoms, and tended to test negatively for the disease. Nonwhites with physical symptoms, who were diagnosed as having gonorrhea, tended to test positively. Both clinical diagnosis and race load highly on this function, while mode of treatment is a much less viable predictor.

Discussion and Conclusion

The purpose of this study was to illustrate empirically that the validity of extant public views of individuals at risk to STDs and gonorrhea in particular, and the correspondence between these views and official STD data may be questionable. Some diffences among infected and noninfected patients were found in the sample. In general, however, the data tend to support the conclusion that the characteristics of infected and noninfected patients are similar. In addition, it was found that the relationship between clinical diagnosis and laboratory confirmation of active cases of gonorrhea is considerably lower than might be

expected. The findings further suggest that clinical data may be insufficient for evaluating the extent of the STD problem and that these data hold limited utility for evaluating which populations are at greatest risk to sexually transmitted diseases.

These findings tend to support the conclusion that information recorded in clinical records represent inadequate measures at best. Standard, zero order analyses revealed no differences in characteristics among the sample of clinic patients evaluated. What is noteworthy, however, is the probable difference between the official data reported and the perceptions of patients at risk to STD upon which public health models are based. Thus, one question that can be raised is: To what extent can the views of public health officials be generalized to populations at risk to STD? Perhaps a more important issue pertains to the validity of the morbidity data reported.

Two of the issues raised in this report appear to have important public policy implications. First, official STD statistics may be skewed toward overreporting the proportion of the population at risk since official STD statistics are based on clinical, not laboratory diagnosis. Thus, based on the findings reported for this public health clinic, a major discrepancy exists between the actual number of gonorrhea cases and the number of positive reports filed with the State Department of Health.

Historically, investigators of social phenomena have been restricted in their development of methodologies used in their evaluations because of the recording procedures employed by official agencies. In the past a major problem encountered was that of underreporting. But overreporting of data may be cause for more contemporary concern. Either way it can be argued that a discrepancy exists between the public world of fact and its relation to the actual world.

Similar to underreporting, overreporting begs the question regarding the validity of official data. This issue has been raised previously, and a corollary may exist in the recording procedures relating to STD data as well. By law, all positive cases of gonorrhea are routinely reported to State Health Departments. But in their enthusiastic efforts to respond to this mandate, clinicians may be overreacting by officially reporting noninfected patients as a case of probable gonorrhea, which subsequently become a

part of the public world of fact. At minimum, it can be suggested that overreporting of STD statistics represents an important albeit a quantitatively unknown factor.

A relatively straightforward solution to this problem of overreporting would be to base official statistics on laboratory test results rather than clinical diagnosis. By substitution of test results, known error factors can be controlled to provide a more statistically valid measure of positive cases and those brought to treatment. Moreover, comparison at a state level of differences between diagnoses and test results would provide parameter estimates of the official reporting error which could then be used to adjust population estimates. Collecting both sets of data (clinical and laboratory) might have the additional effect of spurring a review of clinical procedures involving direct patient care. Minimally, such data could highlight to public health officials where clinics are experiencing difficulties in establishing effective and efficient intake and treatment procedures, thus allowing for better management of the health care facility.

In part, this first problem may be related to the second issue, generally accepted profiles of patients at risk to STD. That is, public health providers undoubtedly are aware of what a typical patient with a venereal infection should look like since they read pertinent literature distributed by appropriate government agencies. The brief descriptions of patients at risk to STD were drawn from publications written by individuals who, at the time their articles appeared in print, were employed by the Public Health Service, Centers for Disease Control. This is an agency charged with the responsibility for controlling the STD problem in the United States. Although it is not our intent to generalize from a single clinic, the results of this study clearly support the contention that the models of typical STD patients, especially gonorrhea patients, do not correspond well with the data.

Another issue of significance highlighted by the data reported is that many clients were treated for possible gonorrhea prior to the return of clinical test results. Although there may be practical health related reasons for this procedure, it seems to represent an overkill which may expose people unnecessarily to strong antibiotics. While this exposure may be minimally problematic in terms of specific contraindications of the medication administered, recent medical research has demonstrated that

many micro organisms are becoming increasingly resistant to antibiotic treatment. Thus, over the long run, epidemiological treatment of patients prior to the return of positive laboratory tests may speed the compromise of the medication's effectiveness.

Finally, to summarize, the various univariate, bivariate, and multivariate analyses employed suggest that clinicians seem to be responding to client sociodemographic characteristics (such as race, age, sex and marital status), and client claims of possible exposure in their diagnosis and treatment of STDs. This combination of variables, while possibly having utility for problems encountered in the applied setting, has been shown to represent only a fair set of predictors of actual infection. Indeed, the most satisfactory discriminant function was obtained for the classification of clients who were treated for the disease, as would be expected given the time sequence involved. However, even for this function, predictors are a complex of socio-demographics and client biography. Actual laboratory test results, while statistically significant, were a poor predictor (loading at .18). Thus, it appears that procedures within the clinical setting should be reexamined to assure that clinical practice and laboratory evidence are made more consistent to allow both appropriate treatment and accurate reporting of morbidity data.

We began this discussion by suggesting that organizational exigencies may affect the overreporting issue raised in this paper. Within this context one final observation is noteworthy. Official reports which show a great variance in reporting categories may be liberally documented under the category that is popular at the time. That is, the prevailing community or organizational attitude, which is dominant at one point in time, will affect recording practices simply because it is a frame of reference for those charged with the responsibility of reporting. Thus, extant profiles of those at risk to sexually transmitted diseases may not correspond well with the actual reality.

References

Altheide, D. L., & Johnson, J. M. (1980). *Bureaucratic propaganda.* Boston: Allyn and Bacon.

Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Science, 1,* 245–276.

Curtis, L. A. (1974). Victim precipitation and violent crime. *Social Problems, 21,* 594–605.

Darrow, W. W. (1975). Changes in sexual behavior and venereal diseases, *Clinical Obstetrics and Gynecology, 18,* 255–267.

Darrow, W. W. (1976). Approaches to the problem of venereal disease prevention. *Preventive Medicine, 5,* 165–175.

Douglas, J. (1967). *The social meaning of suicide.* Princeton, NJ: Princeton University Press.

Fox, E., & Edgley, C. (1983). Effect of non-physical stigma on venereal disease. *Free Inquiry, 11,* 68–72.

Gorsuch, R. L. (1974). *Factor analysis.* Philadelphia: W. B. Saunders.

Henderson, R. H. (1975). Venereal disease: A national health problem. *Obstetrics and Gynecology, 18,* 223–232.

Henderson, R. H. (1977). Control of sexually transmitted diseases in the United States—a federal perspective. *British Journal of Venereal Diseases, 53,* 211–215.

Holmes, K. K. (1981). The chlamydia epidemic. *Journal of the American Medical Association, 245,* 1718–1723.

Kellogg, D. S. (1973). Current research activities on gonorrhea at the Centers for disease control. *Health Services Report, 88,* 1–5.

Kitsuse, J. L. & Cicourel, A. V. (1963). A note on the uses of official statistics. *Social Problems, 11,* 131–139.

Klecka, W. R. (1980). *Discriminant analysis.* Beverly Hills: Sage.

Knox, S. R., Mandel, B. & Lazarowicz, R. (1981). Profile of callers to the VD national hotline. *Sexually Transmitted Diseases, 8,* 245–254.

Mascola, L., Albritton, W. L., Cates, Jr., W. & Reynolds, G. H. (1983). Gonorrhea in American teenagers, 1960–1981. *Pediatric Infectious Diseases, 2,* 302–303.

Maris, R. W. (1969). *Social forces in urban suicide.* Homewood, IL: Dorsey Press.

Maxwell, M. G., Lewis, D. A. & Szoc, R. (1980). Producing Official crimes: verified crime reports as measures of police output. *Social Science Quarterly, 61,* 221–236.

Millar, J. D. (1971). The venereal disease problem in the United States. Paper presented at the National Venereal Disease Conference, Atlanta, GA.

Nye, F. I, Short, Jr., J. F. & Olsen, V. J. (1958). Socioeconomic status and delinquent behavior. *American Journal of Sociology, 63,* 381–389.

Peck, D. L. (1981). Sexuality, venereal disease, and public health policy. *Health and Social Work, 6,* 55–63.

Peck, D. L. (1983). Suicide and youth: official assessment of equivocal death, *Free Inquiry in Creative Sociology, 11,* 71–77;80.

Peck, D. L. (983–84). Official documentation of the black suicide experience. *Omega: Journal of Death and Dying, 14,* 21–31.

Peck, D. L., and Rubin, H. J. (1983). Bureaucratic needs and evaluation research: a case study of the department of housing and urban development, *Evaluation Review, 7,* 685–703.

Peck, D. L. (1986). Evaluating public health perspectives of sexually transmitted diseases: the need for further research. *The Journal of Sex Research, 22,* 249–254.

Porterfield, A. L. (1943). Delinquency and its outcome in court and college. *American Journal of Sociology, 49,* 199–208.

Wiesner, P. J. (1980). "Magnitude of the Problem of Sexually Transmitted Diseases in the United States. Sexually Transmitted Diseases Status Report, 21–31.

Zaidi, A. A., Aral, S. O., Reynolds, G. H., Blount, J. W., Jones, O. G., and Fichter, R. R. (1983). Gonorrhea in the United States: 1967–1979. *Sexually Transmitted Diseases, 10,* 72–76.