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The Development of a Needs Analysis Inventory for Job Corps Utilizing a Signal Detection Model

Edward J. Wygonik
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THE DEVELOPMENT OF A NEEDS ANALYSIS
INVENTORY FOR JOB CORPS UTILIZING
A SIGNAL DETECTION MODEL

by

Edward J. Wygonik

A Dissertation Submitted to the Faculty of the Graduate School
of Loyola University of Chicago in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

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1981

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VITA

The author, Edward J. Wygonik, is the son of Edward S. and Elizabeth (volk) Wygonik. He was born June 9, 1948 in Pittsburgh, Pennsylvania.

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His article, "Hospital information systems and patient education" will appear in Practical Approaches to Patient Teaching, which is currently in press.

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CHAPTER I

INTRODUCTION

Human needs and problems have long been discussed by philosophers and scientists. Arguments have ranged from questioning their existence to questioning the exact number and types of needs.

The Encyclopaedic Dictionary (1896) gives the etymology of the word need as derived from the Anglo-Saxon nede and is defined as "something indispensable or absolutely necessary." The Oxford English Dictionary (1933) defines need as "a particular point or respect in which some necessity or want is present or is felt," and credits first usage of the word to AEIfric in Homilies I circa 1000 as:

Ealle ure neoda, aezder ze gastlice ze lichamlice, daeron sind belocene.¹

Again, the Encyclopaedic Dictionary (1896) gives the etymology of the word problem as derived from the French probleme and Latin problema and defines problem as "a question involving doubt, uncertainty, or difficulty." However, the Oxford English Dictionary (1933) more precisely describes problems within the context of needs as "a condition marked by the lack or want of something, or requiring some extraneous aid or addition." In this sense of the word, first usage

¹"All of our needs are comprised of either the spiritual or of the bodily." Special thanks to Mr. James Lowrey for his assistance in the translations from Old English.

was again prescribed to AElfric in Homilies II circa 1000 as:

Ne lufode he woruldlice aehta for his neode ana, ac to daeleune eallum waedliendum.²

For the last 900 years, the idea of needs and problems associated with needs have been generally accepted by the public at large. Apart from arguments regarding the existence and nature of needs many in the field of mental health have asked the question that--given the existence of needs, what can be done to ensure that people's needs are met. This idea has spawned the procedure of needs analysis. Although often criticized for its validity and reliability, the needs analysis procedure has gained acceptance in the fields of mental health and education. It has often been stated that if the needs of the client(s) can be identified, then treatment and educational programs can be developed to meet their needs. A prime example of this was the federally funded breakfast program in the public school systems based on the Maslovian model that prepotent physiological needs must be met before "higher needs".

The United States Department of Labor's Job Corps program had basically stated the same question in terms of identifying the mental health needs of corpsmembers. Currently, Job Corps has limited information regarding the mental health problems and needs of its corpsmembers and has traditionally relied on "casualty figures" as determined by medical and disciplinary discharges as a means of

²He who loves his wordly possessions as needs, moreover, will depart from this world as a beggar.

identifying problems and subsequently inferring needs of corpsmembers. The inadequacies of this approach are typified by the surprising results of the Kleemier and Moffat (1980) findings of the learning disabled in Job Corps. That the learning disabled corpsmembers existed was neither surprising nor shocking. That the average reading level for the population tested was the equivalent of a third-grade reading level was disturbing.

Third-grade reading levels of corpsmembers (at least at one center) underscore the deficiencies of relying upon a pathological model of which the main purpose is the removal (medical/disciplinary discharges) of problems. Given the population of adolescents serviced by Job Corps, the pathological model becomes even more suspect.

This research utilized a Signal Detection Model to develop an inventory which identified the mental health problems and needs of corpsmembers in Job Corps. The inventory identified how consistently the mental health needs and problems were perceived by corpsmembers, center staff, and mental health staff in Job Corps.

Signal Detection Theory provided an alternative model to the traditional, pathological one currently utilized in Job Corps. Although initially and primarily still a laboratory procedure, Signal Detection models are increasingly being used in natural environments. Swets, et.al. (1979) use of a Signal Detection paradigm in a hospital setting is representative of this growing acceptance of the procedures.

The inventory can be seen as an attractive alternative to the present system of problem identification and needs analysis. The

inventory more accurately identified problems than the current pathological model and proactively attempted to identify corpsmembers' needs--a procedure currently not practiced.

Data gathered by the inventory should benefit center, regional, and national management by identifying the mental health needs and problems of corpsmembers at a given center more accurately than by current methods. The data could be used by the National Health Office in evaluating proposals requesting funding and in identifying requests for proposals. Further, the information could be utilized in prioritizing the scheduling of requests for centers for current training programs. Finally, mental health consultants could utilize the information in evaluating program planning and effectiveness for their centers.

The Subproblems

The first subproblem. The first subproblem is to identify categories of mental health problems and needs specific to corpsmembers from which inventory items will be developed.

The second subproblem. The second subproblem is to construct an inventory utilizing Signal Detection Theory based on the categories of mental health needs and problems which will identify the specific mental health needs and problems of Job Corpsmembers.

The third subproblem. The third subproblem is to utilize a Signal Detection Theory model to analyze and to interpret the data in order to determine how consistently the respondent groups have identified specific mental health problems and needs.

The Hypotheses

The first hypothesis. The first hypothesis is that specific sets or categories of mental health problems and needs indigenous to Job Corpsmembers can be identified.

The second hypothesis. The second hypothesis is that a Signal Detection Theory model can be utilized to develop an inventory which will identify specific mental health needs and problems of corpsmembers.

The third hypothesis. The third hypothesis is that a Signal Detection analysis and interpretation of the data can identify how congruently respondent groups perceive specific mental health needs and problems of corpsmembers.

The Delimitations

The study will not attempt to resolve the problem of needs definition.

The study will not attempt to diagnose corpsmembers.

The study will not attempt to evaluate Job Corps mental health staffs' abilities to identify mental health problems or needs.

The study will not attempt to predict future mental health needs or problems in Job Corps applicants. Rather the study will focus on more clearly identifying the mental health needs and problems of corpsmembers currently enrolled at centers.

The study will be limited to only those corpsmembers who are currently enrolled in the Job Corps pro-ram.

The study will not attempt to evaluate administrative or clinical policies and procedures at any given Job Corps Center.

The Definition of Terms

Institutionally Defined Needs. For members of any given institution, be it educational, vocational, penal, or treatment, certain sets of behavioral referants are defined as acceptable within the boundaries of that institution. These behavioral patterns can be viewed from the perspective of the desired outcomes which the behavioral patterns produce. Given the outcomes to which the institution is charged, those behavioral patterns which result in achieving these outcomes can be defined as institutionally defined needs.

Institutionally Coexisting Needs. For members of an institution, be it educational, vocational, penal, or treatment, certain sets of behavioral referants coexist with the institutionally defined needs. This second set of behavioral referants are specific to the individual members of the institution and may or may not be consistent with the institutionally defined needs. This second set of behavioral referants are defined as institutionally coexisting needs.

Mental Health Need. Within the institutionally coexisting needs exist N sets of coexisting needs, of which one set is related to the mental health of the members of the institution. This set of behavioral referants is associated with the social context of the members of the institution, i.e., interpersonal relations, individual development, individual and group functioning, etc. and is defined as mental health needs.

Within mental health needs there exists at least two further subsets, (a) institutionally conflicting mental health needs and (b) institutionally compatible mental health needs.

Institutionally Conflicting Mental Health Needs. Institutionally conflicting mental health needs are a subset of the mental health needs of the members of an institution, the behavioral referants of which produce outcomes for the individual incompatible with the outcomes of the institution.

Institutionally Compatible Mental Health Needs. Institutionally compatible mental health needs are a subset of the mental health needs of the members of an institution, the behavioral referants of which produce outcomes consistent with the outcomes of the institution.

Mental Health Problem. Within this framework, a mental health problem is defined as a subset of the institutionally conflicting mental health needs such that the outcomes produced decrease the likelihood of the corpsmember's successful completion of the Job Corps training. In this sense a mental health problem is seen as pathological and mental health is defined as nonconflict with the institutionally defined needs.

Mental Health Program. Again, within this framework, a mental health program is defined as that which increases the likelihood that mental health needs will be compatible with and enhance institutionally defined needs. In this sense, mental health programs increase the likelihood of the corpsmember's successful completion of the Job Corps training and mental health is defined as compatibility with and enhancement of the institutionally defined needs.

Assumptions

The first assumption. The first assumption is that mental health needs and problems of corpsmembers can be identified.

The second assumption. The second assumption is that an inventory can be developed utilizing a Signal Detection Theory model.

The third assumption. The third assumption is that a Signal Detection analysis will measure the congruence of the respondents' perceptions of mental health problems and needs.

The fourth assumption. The fourth assumption is that the national, regional, and center management at Job Corps centers can utilize the data generated by the inventory in program planning.

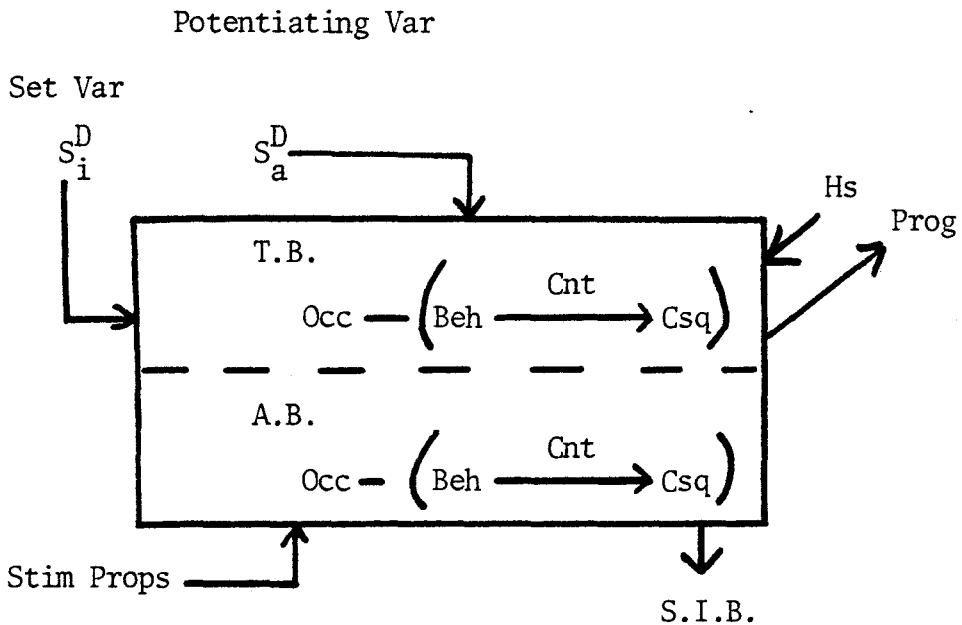
The fifth assumption. The fifth assumption is that institutionally defined needs are homogeneous throughout Job Corps.

The sixth assumption. The sixth assumption is that mental health needs and mental health problems are homogeneous throughout Job Corps.

The Philosophical Paradigm³

The philosophical paradigm upon which this research is based is an operant behavioral analysis model. The paradigm is described such that:

³The philosophical paradigm was initially presented by Dr. Israel Goldiamond at the annual convention of the Midwest Association for Behavioral Analysis, Dearborn, Michigan, 1977; Revised August, 1979.



Where:

Behavior (Beh). Behavior is defined as anything an organism does, the properties of which can be modified by its effects on the environment. The defining characteristic of behavior is its modification by its consequences.

Consequences (Csq). The consequence is the event produced by the behavior such that behavior is defined by its consequences.

Occassion (Occ). The occassion is the event which can be shown to exert control over behavior which involves the examination of the limits within which differing events or properties of events are effective in controlling the behavior of particular organisms or species.

Contingency (Cnt). The contingency is the relationship between the behavior and its consequences which specifies the conditions under which particular responses may or may not produce particular consequences.

Target Behaviors (T.B.). Target behaviors are the set of behaviors of interest of an organism under certain conditions.

Alternate Behaviors (A.B.). Alternate behaviors are the set of potential behaviors available to an organism under specific conditions excluding the target behaviors.

Set Variables (Set Var). Set variables are rules for inclusion or exclusion for classes of behaviors which specify differences between topographical and functional variables. Set variables are thus, the empirical-logical procedures which define the dimension under study.

Instructional Discriminative Stimulus (S_1^D). An instructional discriminative stimulus is a set variable which specifies the inclusion or exclusion for classes of behaviors prior to the occasion for that behavior.

Abstractional Discriminative Stimulus (S_a^D). The abstractional discriminative stimulus is a set variable which specifies the inclusion or exclusion for classes of behaviors during the investigation of the behaviors of interest.

History (Hs). The history of an organism refers to the various conditions to which an organism has been exposed and its performance under those conditions.

Program (Prog). The program is the arrangement of systemic, progressive changes or transfer of discrimination resulting in the emission of the target behavior.

Potentiating Variables (Potentiating Var). Potentiating variables are environmental conditions and states of organisms which

increase the effectiveness of an organism's behavior, occasion, consequence, contingency relation, or any combination of these elements.

Stimulus Props (Stim Props). Any set of events which are not systematically related to the contingency relation are defined as the domain of the stimulus props. For each set in the domain, there exists at least two ranges such that an element in one range is associated with the maintenance of the contingency relationship. The maintenance range is defined as the stimulus props.

Schedule Induced Behavior (S.I.B.). Any chain of behaviors which accompanies the main effects of the contingency relationship of the target behaviors is a schedule induced behavior.

Organization of the Study

The study has been organized in the following manner. Chapter I includes the definition of the study, the delimitations, definition of terms, assumptions, and philosophical paradigm. Chapter II includes the review of the related literature. Chapter III includes the research paradigm, procedures for data collection, and the specific treatment of the data. Chapter IV includes the results of the data collection. Chapter V includes the analysis of the data with conclusions and recommendations.

CHAPTER II

THE REVIEW OF THE RELATED LITERATURE

An Historical Overview

As noted earlier, the Oxford English Dictionary (1933) credits AElfric with the initial use of the word need in both of the contexts under consideration. References to needs were also found in the Old English Chronicles (circa 1050). Beckett (circa 1300) utilized the concept of needs in describing England "as hit were at a Parlement of Neodes of the londe." Harrow in Of Hell (circa 1300) described the problematic aspect of needs by stating that "... Jhesu hevide shed ys blod For oure neode upon the rod." Claxton in the Chronicles of England (1480), St. Augustine in Manual (1577), Shakespeare in Measure for Measure (1603), and Milton in Paradise Lost (1667) are all credited with utilizing the concept of needs either as a necessity or want or as a lack of some necessary thing requiring aid or assistance. More contemporary usage includes Blackwell in Works I (1716) where it was stated that "We ought to be content if we have now so much as will serve our present needs," and George Elliot in Romola (1863) that the "great need of her heart compelled her to strangle... every rising impulse of suspicion."

Indicators of Needs

In its modern usage, human needs have been defined in at least three general ways: (a) as inner urges which are the driving forces

and motives for behavior, (b) as a model or construct for predicting and modifying behavior, and (c) as concepts or schema which interfere with and confuse the study of behavior. No position will be taken as to the efficacy or validity of these approaches. No attempt will be made to resolve differences among or deficiencies with in any of these approaches. However, as Goldiamond (1958) has stated elsewhere, this review will be

concerned with all three definitions since it will consider systematically what is procedurally common to all definitions...

In the investigation of human needs, all definitions of needs rely on a behavioral referent and behavioral outcomes as means of detecting, measuring, predicting, and/or controlling needs. Within this framework, all three definitions of human needs share a physiological/biological factor, a psychological factor, or a combination of both. Additionally, in investigating human needs, these constituent parts are always linked with an overt behavioral referent. In this sense of hunger need can be measured by the level of blood sugar (physiological/biological), by enumeration of food-related verbal statements (psychological), or by countless other methods all of which share the reliance on an overt, behavioral referent for detecting or measuring human needs.

Goldiamond's description of the referents used for indicators of perception is pertinent to the behavioral referents used in human needs. Goldiamond delineated two indicators, the semantic indicator and the accuracy indicator. The semantic indicator is a referent which is "assumed to have stimulus-related experiential referents."

In this sense there exists a correspondence between the use of the indicator and the "common-sense semantics." However, this correspondence is secondary to the use of the indicator and its "long history of continued lawful relations with other variables under specified conditions." The accuracy indicator designates a stimulus in some manner, i.e., spatially, temporally, counting or identifying the stimulus. The stimulus-designation aspect is lacking in the semantic indicator. Goldiamond described five features or characteristics which must be considered when utilizing either. They are:

1. Indicator Scores, typically congruence between the subjects' responses and the experimenter's answer sheet which defines accuracy;
2. Control of the scores by the experimenter;
3. Connection factors for chance congruence, response bias, positive semantic bias, and negative response bias;
4. Decision Avoidance; and
5. Cross-experimental evaluation.

Although Goldiamond utilized the semantic and accuracy indicators in his discussion of perceptions, the methodological considerations are applicable to the subject of human needs.

Modern Usage of Needs

The majority of authors belong to the class which defines needs as innate states which motivate behavior. Coleman (1976) defines needs as the "requirements which must be met for healthy development and/or functioning" and delineates two major categories of needs, the biological and the psychological. For Coleman, the biological needs

were visceral, stimulation and activity, safety and avoidance, and sex while the psychological needs were curiosity, adequacy/competence, love, self-esteem, worth, values, and meaning.

Maslow is probably most noted for developing a hierarchical system of needs starting with the basic physiological needs upon which "higher" needs were built (Goble, 1976). These "higher" needs included safety, love, esteem, and finally self actualization. In a sense, Maslow systematized his definition of needs into alternative sets or categories of needs with initial sets prepotent and ascendant over the "higher" needs.

Coleman and Maslow typify authors who rely on the innate state model of human needs in that there is less of a reliance on behavioral referents than the other two models. Behavioral referents are utilized but more so as examples as when Maslow cites indications of those people who are "self-actualized." Also, typical of both Coleman and Maslow is the reliance on semantic indicators of needs. Self-esteem and self-actualization are typical. Accuracy indicators are utilized only for the biological and physiological needs. Rarely are both indicators utilized together.

A second definition of human needs has been proposed such that needs are viewed as a hypothetical construct or model. Mischel (1968) approached the definition of human needs from the perspective that human needs are useful models in the analysis, prediction, and motivation of behavior. Kelly (1958) also approached human needs as a construct while both authors argued for rigid specificity of behavioral referents of such constructs.

In a sense, Mischel and Kelly argued for the inclusion of accuracy indicators as well as semantic indicators of needs. The authors requirement of specificity of behavioral referents can be viewed as an attempt at accuracy indicators. Questions arise regarding the five characteristics of semantic and accuracy indicators when applied to this definition of human needs.

A third viewpoint to the definition of human needs has been voiced by proponents of behavioral analysis. A typical behavioral viewpoint is that the reliance upon needs, motives, and other such constructs leaves the scientist with variables which can not be quantified or measured while delaying the investigation of the study of behavior. Skinner (1973) stated that "a more reasonable program is to attempt to account for behavior without appeal to inner explanatory entities." Additionally, Jones (1970) has stated that it "... is not necessary to postulate the existence of some innate drive to account for the universality of the human existence."

As can be seen the behavioral viewpoint strongly advocates the use of accuracy indicators and behavioral referents with little reliance on the semantic indicators.

Needs Analysis in Counseling

The concept of needs and the influencing characteristic of needs are readily utilized in the field of counseling. Pietrofessa, Leanord, and Hoose (1971) accepted the Maslovian construct of a prepotent, hierarchical need structure. Additionally, Pietrofessa, et.al., defined a need pattern in which one or more needs operated at any given time to influence the individual's achievement and self-identity.

Johnston and Verstermark (1969) discussed how the counselor's own needs have influenced his ability to assist, help, or counsel another individual. Benjamin (1969) has suggested that counselors have a "need to be needed" and like Johnson and Verstermark, this "need to be needed" can actually interfere with the helping process. Hamachek (1971) suggested that needs are capable of influencing perceptions and beliefs and thus influencing the behavior of an individual.

In the cases cited above, the authors overwhelmingly have utilized the definition of needs as an inner state in their study of either counselors or clients. However, all authors have used the counselor's behavior (Pietrofessa, Leanord, and Hoose, 1971, Benjamin, 1969), the client's behavior (Hamachek, 1971), or a combination of both (Johnson and Verstermark, 1969) within the counseling interview as the means by which behavioral referents were attached to the defined needs. Also, typical of authors who utilize the inner state model of needs, there is a strong reliance on the use of semantic indicators. Accuracy indicators are seldom utilized.

Needs Analysis in Behavioral Counseling

Krumboltz (1966) has been one of the strongest critics of "inner states" within the field of counseling. Krumboltz has stated that counseling psychologists have "placed undue emphasis on ... inner states." In this sense, Krumboltz is representative of those authors in counseling who accept the definition of needs whereby needs are viewed as conflicting with an understanding of behavior.

Typical of the behavioral authors, Krumboltz relies heavily on

accuracy indicators rather than semantic indicators of needs.

The three definitions can be viewed developmentally. Initially, theoretical and philosophical positions had been formulated delineating the existence and nature of needs. Within this contexts, sets or categories of needs had been proposed. Subsequently, behavioral referents were added as either semantic or accuracy indicators of those needs. Finally, the value of the behavioral referents per se was established.

As can be seen from this overview, there exists at least three separate definitions of human needs: (a) that needs exist as an inner state and are the driving forces of behavior, (b) that needs are a potentially useful construct in the study of behavior, and (c) that needs are concepts and schema which impede the investigation of behavior. This review will not attempt to justify any of these positions but rather will remain neutral in the definition of needs. The study will concern itself with that which all three definitions have in common, the reliance upon behavior as the means by which needs are defined, detected, measured, and analyzed.

Job Corps

Currently, Job Corps has limited information regarding the mental health needs and problems of its corpsmembers. Traditionally, Job Corps has relied on "casualty figures" as determined by medical and disciplinary discharges as a means of inferring needs of corpsmembers. This is not surprising given the federal mandate of Job Corps.

Job Corps is a federal training program for "impoverished and unemployed adolescents" under the auspices of the U.S. Department of

Labor. Initially, Job Corps was formed as part of the Economic Opportunity Act of 1964, however, the authority for the program has been transferred to the Comprehensive Employment and Training Act (CETA) of 1973.

Job Corps has been charged with assisting "young people who need and can benefit from intensive programs of education, vocational skills training, and other services while living in a residential setting." Enrollees in Job Corps are men and women between the ages of 16 and 21. The typical corpsmember is a 17 year old, minority, high school drop-out, reading at the grammar school level and either unemployed or has never been employed. The average length of stay in Job Corps is six months (DOL/ETA, 1978).

Job Corps currently has sixty residential settings in thirty-one states and Puerto Rico. However, during the fiscal years 79/80 and 80/81, previously appropriate monies mandate the expansion of Job Corps to over 100 centers.

Individual Job Corps Centers are administered by one of three groups: 1) the federal government under the Departments of Agriculture and Interior, 2) privately contracted agencies and/or corporations, and 3) several different union groups.

A corpsmember participates in educational and vocational training while living at the center. The Job Corps education program can lead to a General Education Development (GED) degree while vocational skills training received in Job Corps often satisfies the prerequisites for union apprenticeship. In fact several unions recognize the Job Corps training as the equivalent of the first two years of their apprenticeship

programs.

The Mental Health Program in Job Corps

Each Job Corps Center is required to have a mental health program (Federal Regulation 97a. 68). The goals of which are:

1. To provide an environment which fosters the social and psychological growth and development of all corpsmembers,
2. To promote the mental health of corpsmembers through use of prevention oriented mental health principles and techniques,
3. To provide training to staff members which will enable them to identify corpsmembers who are undergoing emotional stress and need assistance, and
4. To furnish needed mental health assistance through trained staff, through mental health professionals, and, at last resort through medical termination and referral to an appropriate agency.

Technical Supplement D to CETA (1973) outlines the mental health program for Job Corps including the types of mental health professionals, qualifications and responsibilities of the mental health professionals as well as suggestions for establishing preventative programs.

Problem Identification and Needs Analysis in Job Corps

The recognition of mental health problems in corpsmembers has been documented both directly and indirectly. Technical Supplement D (1976) outlines potential corpsmember problems and (indirectly) defines the potential for problem areas in the "corpsmember's self-image, discipline, periods of stress, dropouts from Job Corps, the need for emergency treatment, and hospitalization for psychiatric purposes."

Hayman and Frank (1979) have directly documented the frequency and types of medical problems, including psychiatric problems, of corpsmembers on a national basis. Additionally, various programs have

been instituted by the Job Corps National Health Office, Washington, D.C. which are aimed at specific corpsmember problems. These programs include staff and/or corpsmember training in such areas as substance abuse (Page, 1979), teenage pregnancy (Nelson, Fielding, and Glasser, 1971; Technical Supplement H, 1976), and race relations (Plotch and Cohen, 1973).

Common to the above approaches has been the investigators' reliance on a pathological model of problem identification and use of semantic indicators of mental health needs. The above authors have documented problems existing in Job Corps based on explicit behaviors of the corpsmembers. These behaviors have been defined de facto as conflicting with the institutional goals of Job Corps and are conflictual with the institutional needs. Historically, the official policy and procedure of Job Corps has been to provide assistance to the corpsmembers to eliminate these problematic behaviors such that the corpsmembers' behaviors become consistent with the institutional needs (Technical Supplement D, 1976). If the corpsmembers' behaviors can not be changed, the recommended course of action for problem resolution is either a medical or disciplinary discharge with appropriate referral to an outside agency (Technical Supplement N).

Given the reliance on a pathological model of problem identification, no concerted effort has been made within Job Corps to define the corpsmembers' mental health needs within the framework of the institutional outcomes and institutional needs. In this sense the coexisting mental health needs of the corpsmembers have not been defined in terms of the behavioral referents. Thus no existing

documentation exists as to whether or not these coexisting needs are conflictual with or compatible to the institutional needs of Job Corps.

Psychophysics and Signal Detection Theory

A Signal Detection model is one avenue which could be utilized by the Job Corps National Health Office to document and gather data identifying the mental health needs of corpsmembers. Goldiamond (1962) in his discussion of perceptions in applied settings argued for the use of such a model, stating:

...such analysis (SDT) may be of interest to clinical and other applied psychologists, not necessarily because perceptual change is critical for behavioral change, but because the same variables which govern perceptual behaviors also govern other behaviors. This implies not only that procedures developed in behavioral areas other than perception are useful in the experimental analysis of perception but also that procedures developed in perception may be useful in the experimental analysis of other behavioral areas including clinical psychology...

It might be of interest to trace the development of Signal Detection Theory within the field of psychophysics. Psychophysics is that branch of psychology which typically has been concerned with the identification of thresholds of various senses. Thus psychophysics has been historically concerned with such questions as how much light must exist in order to see? how much noise in order to hear? and how much pressure in order to feel? etc.

In the typical psychophysical experiment, a range of stimuli (e.g., light, noise) is presented to an observer. The observer simply responds "Yes" or "No" to indicate if he can detect the stimulus. The experimenter notes at what points the observer can and can not detect the stimulus and arrives at some operational definition of the threshold

under consideration. Logically, one should expect that the psychophysical approach would yield a step-function, that is, there exists some point, some boundary below which the stimulus is never detected and above which the stimulus is always detected. However, in utilizing different psychophysical methods, different "thresholds" for the same subject and the same stimulus are obtained.

Gescheider (1976) presented the traditional classification of psychophysical methodology. This classification consisted of:

1. the adjustment method; where the observer must "adjust" the stimulus to match some model or standard stimulus;
2. the method of limits; where the stimulus intensity is ordered and presented in alternately ascending and descending fashion; and
3. the constant method; a truncated method of limits where only those stimuli near the expected stimulus are presented.

As stated above, when investigators conducted experiments utilizing different psychophysical methods with the same subject and the same stimulus, different thresholds were obtained. Obviously, "something" was operating, contaminating the experiments. From a statistical standpoint one could argue that the discrepancies in the results can be attributed to (statistical) error. However, the inferential-statistical model assumes that if more carefully designed studies were performed, then the discrepancies would be eliminated. Investigators in psychophysics, however, attempted to develop a research paradigm which included and accounted for error as a natural phenomena. It could be argued that to exclude "error" from the research design

excludes an instrumental part of the human experience.

Thurstone (1929) in his classic paper on 'discriminal processes' was first to suggest the paradigm in which "error" was included as an intrinsic element of the operating characteristic. Thurstone argued that a set of stimuli could be ordered along some continuum or parameter. However, due to ambiguity, generalization, bias, prejudice, etc. a response to a stimulus might be incorrectly given to a second stimulus. Figure 1 represents such an instance for a given response where the number of lines between S and R indicate the strength of the relationship. Figure 1 thus depicts that given the stimulus S4, the response R4 is correct. However, in that stimulus S3 and S5 approximate the same dimension of S4, in some instances, given S3 or S5, the mistaken response of R4 will be made. As the stimulus diverges from S4, the probability of a response S4 decreases.

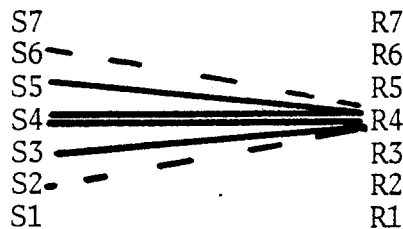


Figure 1. Intensity of the relationship between a given response and different stimuli from Thurstone (1929).

Thurstone continued by adding the effect of two responses. However, the two responses vary in terms of mean and standard deviation (dispersion). In the two response case, the question is raised, does a stimulus belong to the population of stimuli which yield one response

or the other. This is depicted in Figure 2 where it can be asked should stimulus S3 occasion response R5 or R7. Another way of stating this is that given stimulus S3 how often will that yield response R5 and response R7. Or alternately, does S3 belong to the R5 population or the R7 population.

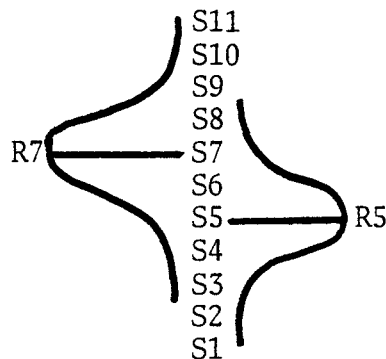


Figure 2. Two response intensity of relationship from Thurstone (1929).

The statistician might argue that this is simply another way of depicting Type I and Type II errors and does not of and by itself include "error" in the research paradigm. Of course, this is correct. However, the Thurstonian discriminial process paradigm is the model upon which Signal Detection Theory is based. It is Signal Detection Theory which incorporates the errors of the subject in the research paradigm.

Signal Detection Theory. Signal Detection Theory (SDT) can be seen as the maturation of the Thurstonian discriminial process model. In SDT, there exists two classes of stimuli described as the Noise and Signal-Noise populations. The Noise-distribution can be described as the background and in the Thurstonian model the Noise distribution can

be described as the background and in the Thurstonian model the Noise distribution can be represented by the population of stimuli leading to the response R5. The Signal-Noise population is similar to the Thurstonian distribution of stimuli leading to response R7. It is assumed that the two populations overlap in some fashion (See Figure 3).

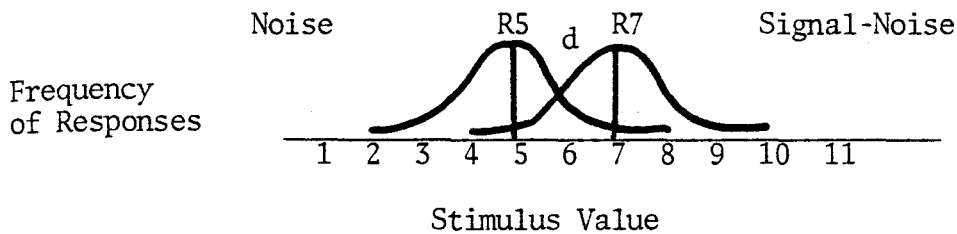


Figure 3. Two overlapping distribution of SDT.

In the classic SDT experiments (Swets, 1964) the subject is presented a stimulus and asked to identify to which population the stimulus belongs, Noise or Signal-Noise. Thus in the classic experiment, the subject is asked--was a light presented (Signal-Noise) or not (Noise); was a tone presented (Signal-Noise) or not (Noise). Thus, the minimum conditions for a SDT experiment are:

1. two classes of clearly defined, explicitly observable behaviors (events) which are mutually exclusive, and
2. two future states of the environment.

This experimental design yields the traditional 2 x 2 matrix of SDT with the four possible alternatives as depicted in Figure 4.

		Future States of the Environment	
		Stimulus is:	
		Present	Absent
Observer Reports Stimulus As:	Present	Hit	False Alarm
	Absent	Miss	Correct Rejection

Figure 4. Traditional 2 x 2 matrix of SDT.

The four possible alternatives yield two correct responses--reporting a stimulus as present when it actually is (Hit) and reporting a stimulus as absent when it actually is (Correct Rejection)--with two incorrect responses--reporting a stimulus as present when it is actually absent (False Alarm) and reporting a stimulus as absent when it is actually present (Miss). These alternatives are used to develop Hit Rates and False Alarm Rates. Egan (1975) defines both as follows:

$$\text{Hit Rate} = \frac{\text{number of Hits}}{\text{number of Hits} + \text{number of Misses}}$$

$$\text{False Alarm Rate} = \frac{\text{number of False Alarms}}{\text{number of False Alarms} + \text{number of Correct Rejections}}$$

The Hit Rates and False Alarm Rates are utilized to develop Receiver Operating Characteristic (ROC) curves. ROC curves typically compare the Hit Rate to the False Alarm Rate. ROC curves are important for three reasons. ROC curves:

1. define the amount of overlap between the two distributions,
2. measure the subjects' biases to a given stimulus, and
3. measure the subjects' sensitivity to a given stimulus.

The overlap between the two distributions is defined as d' , a mathematical function, such that d' is the distance between the means of the two distributions (Elliott, 1964). The subject's bias is measured by the False Alarm Rate. If a subject has a high False Alarm Rate, then logically, the subject is responding to something other than the stimulus. Finally, sensitivity to a given stimulus is measured by a function of d' .

Response Categories of Signal Detection Theory

Signal Detection experiments can be classified according to the type of responses required of the subjects. Three major categories are delineated: (1) the yes-no procedure, (2) ratings or confidence intervals, and (3) forced-choice procedures. Green and Swets (1966) describe each procedure.

In the yes-no procedure, the observer is presented with one of two mutually exclusive stimuli. The observer's responses are restricted to one of two possible alternatives, typically "yes-no", "absent-present", etc. Common to this technique are the use of a warning interval and observational interval. The observer is thus prepared for the presentation of the stimulus. Unique to the yes-no procedure is that the observer cannot fail to respond according to the response categories. Thus, a response of "don't know" is unacceptable. The procedure is most often used in laboratory experiments and clearly does not reflect the real-life conditions outside the controlled

laboratory.

The rating procedure or confidence interval procedure utilizes the same presentation sequence of one of two mutually exclusive stimuli during one observational interval. However, it differs from the yes-no procedure in that any number of responses may be available to the observer. Within this framework, degrees of certainty can be established, that is the observer is given the response choices of "unsure", "probably", etc. The major advantages of the rating procedure are that it more directly parallels the real-life situation outside of the laboratory and that ROC curves can be generated with less data than in the yes-no procedure.

A major difference exists between the forced-choice procedure and the two outlined above. In the forced-choice procedure, one of two mutually exclusive stimuli are presented during one of N observational intervals. The observer is then instructed to state in which observational interval the signal was contained.

Green and Swets (1966) evaluation of the three different procedures is:

For a signal and noise of given strengths, and for a given observer, the three procedures yield essentially the same index of sensitivity. Such consistency of results obtained by different techniques is not easy to attain in the measurement of complex physical phenomena, and it has been very rare, perhaps nonexistent, in the measurement of human behavior.

Multiple Observers

Since SDT has typically been used with individuals, the question has arisen as to the applicability of multiple observers. Smith and Wilson (1953) compared the results of two five-member teams with

results for individuals utilizing auditory signals. Initially the results seemed to indicate a greater bias for the multiple observers due to a higher false alarm rate. However, in utilizing more strict control procedures, the authors found that the results of the multiple observers closely approximated the average results of the individual observers. Green and Swets (1966) also report this same finding when comparing the results of two observers with the results of a two member team.

Given the results of these experiments Green and Swets (1966) have concluded that Signal Detection Models are robust-enough to include multiple observers or teams of observers without violating the assumptions or efficacy of the model.

Signal Detection Applications

SDT has been used in a wide variety of applications utilizing explicitly defined behavioral referents as indicators of numerous variables and complex concepts. Physiological pain has often been studied under SDT. The behavioral referents and indicators of pain are of interest due to the complexity and often subjectivity of the "concept of pain."

An early study using SDT was the study of pain in two rhesus monkeys. Weitzman, Ross, Hodos, and Galombos (1961) investigated the tolerance of pain under different dosages of morphine sulfate. The authors thus arrived at "pain thresholds" for the monkeys. In this study, "pain" and "pain thresholds" were defined and controlled by lever presses which controlled the amount of electric shock each monkey received. The behavioral referents for the abstraction "pain"

were defined by read-outs of lever presses and amount of shock tolerated. In this sense the behavioral referents acted as accuracy indicators in that amounts of shock were summated and compared with the subjects' behavior during the presentation of shock.

The evaluation of pain has engendered other SDT studies. Clark and Yang (1974) ignited a controversy by their evaluation of acupuncture utilizing a SDT model of inquiry. In their investigation, Clark and Yang reported that the effect of acupuncture was related to a response bias in the subjects' reporting of pain. In this case, the behavioral referent of pain became a verbal response of a painful sensation or a subject's withdrawal from painful stimuli. Here, the behavioral referent, the verbal report, functioned as both a semantic indicator ("Yes, I feel pain") and as an accuracy indicator ("I feel pain, now, in my shoulder, arm, etc.>").

Although the study of physiological pain is greatly different from the study of human needs, it is of interest to ask why the investigators of pain utilized a SDT model for their inquiries. It can be seen that many of the methodological considerations of the study of pain parallel the same considerations in the study of needs. Pain must be viewed as an extremely subjective state where the investigator is totally at the mercy of the subject. What could be viewed as one person's pain might be another's discomfort. In this sense pain is ideographic with (probably) a large variance for most of the population. While there is probably much agreement at the extreme presence (or absence) of pain, there is probably much confusion at intermediate "levels" of pain--when does "pain" start, how "much

pain" is required before an individual admits to it, etc. Also, given the nature of a "painful" stimulus, it is probably safe to assume that many of the conditions under which pain was first experienced, generalize to other "non-painful" situations which complicate and contaminate results obtained under the latter conditions. In this manner, pain can be viewed as an intricate concept which provides many obstacles to those who study it.

The same methodological considerations must be addressed in the study of human needs. Human needs are extremely subjective and ideographic. In this sense it is very difficult to argue that, for example, "curiosity" is or is not a "need" for an individual. In the same sense, there is probably much agreement in the extreme cases. It would be difficult to argue that food is not a biological need (requirement) of the human condition. It is the middle ground which causes consternation. Finally, history effects and generalization create as much havoc in the study of needs as is created in the study of pain.

The use of a SDT model allows the investigator to maintain control of the experimental condition through the presentation of either Signal or Noise observational intervals. "Subjectivity" is thus identified. The use of Noise- and Signal Distributions fits the "agreement-at-extremes" nature of the problem. The overlap of both distributions underscores the confusion between the two distributions. Finally, measures of sensitivity and bias control for extraneous variables which might enter into the research. Thus the use of an SDT model in the study of human needs is as applicable as it is in the study of pain.

Rilling and McDiarmid (1965) utilized a SDT model to measure pigeons' discrimination of stimuli produced by two fixed-ratio (FR) schedules. Without addressing the exact nature of the discriminative stimuli (number of responses in the fixed ratio, time required to emit those responses, etc.) the authors attempted to demonstrate that a stimulus acted as an indicator to the subjects that they were performing under one of two fixed-ratio schedules. Rilling and McDiarmid concluded that "the ability to discriminate ratios is a continuous, not an all or none, process."

The Rilling and McDiarmid study is of interest for three reasons. First, although the discrimination of two fixed-ratio schedules is substantially different from the discrimination of needs and non-needs, the former is probably more difficult. In the Rilling and McDiarmid study, the behavioral referent for both schedules was the pigeon's peck of one of three keys. Given that the same behavioral referent was utilized for both schedules, the subjects were required to attend to various subtleties and nuances of each schedules of reinforcement in order to arrive at a correct discrimination. The discrimination of human needs required corpsmembers and staff to also attend to subtle, fine-grain differences in need and non-need inventory items.

Secondly, as the differences between the fixed-ratio schedules decreased (from FR 50 and FR 15 to FR 50 and FR 47) the correct discrimination of the subjects also decreased. Stated differently, as the overlap between the Signal and Noise distributions increased, the number of errors of the subjects increased. This is a logical conclusion of the SDT model and can be expected in the present investigation.



Finally, the Rilling and McDiarmid study did not attempt to define what aspect of either schedule was the discriminative stimulus for the subjects. Thus, without defining exactly to what the pigeons were responding, the authors were able to demonstrate that the subjects could respond correctly. This is of primary importance to the current study. Given the often ambiguous nature of need definition, it is often difficult to describe or state what the critical dimension of a situation is which prompts a person to say "Yes, this is a need" or "No, this is not a need." However, as the Rilling and McDiarmid study indicated, it is often possible to make such a discrimination even though it is difficult to accurately state why the discrimination was made. In this sense, the empirically derived evidence takes precedence over the verbal behavior of the subject.

In a more recent study, Swets, Pickett, Whitehead, Getty, Schnur, Swets, and Freeman (1979) compared the accuracy of two radiological techniques, computed tomography and radionuclide scanning, utilizing an SDT model. Twelve radiologists viewed samples from both techniques and were asked to diagnose the conditions. The authors concluded that "ROC analysis can be used to measure the accuracy of human diagnostic judgements." Of particular interest in the Swets, et.al., study is the diagnostic aspect of the discrimination task. In the mental health field, the discrimination between a need and non-need is analogous to the physician's diagnosis of health or illness. The implications and consequences of a hit or miss are similar. In the present study, staff and corpsmembers were basically asked to "diagnose" whether or not a given stimulus was in fact a need or not.

Hammerton (1970) compared two groups of subjects in a decision task under two different response conditions--the yes-no response and confidence intervals. Subjects were presented with a two-digit number and required to state whether the number belonged to the Noise population (numbers which had a mean of 40) or the Signal population (numbers which had a mean of 43, 47, and 50). The values of d' under the conditions of the confidence interval responses were less than, but not significantly less than, the values of d' under the condition of the yes-no response class. Hammerton theorized that this was a result of some of the subject's "guessing" when they were unsure. These results are thus consistent with the earlier work of Green and Swets (1966) and lend further support for the use of confidence interval response classes which were utilized in the current investigation.

Ulehla, Conges, and Wackwitz (1967) applied the SDT model to the discrimination process involving conceptual judgements. Subjects were required to discriminate the source of short samples of English texts. The sources were of two types--male-oriented and female-oriented. In a sense, the Ulehla, et.al., study has modified the meaning of the responses. Subjects are no longer responding strictly to the contextual stimuli presented but rather they have been asked to conceptualize the contents as belonging to one of two sets of stimuli (male-oriented/female-oriented). The contextual stimuli presented to the subjects have thus been modified to become behavioral referents for the two classes or concepts under consideration. The authors concluded that the "applicability of SDT to the conceptual task employed... was supported by the equivalence of a' estimates obtained."

In this manner, the Ulehla, et.al., study closely resembles the current investigation where respondents were asked to conceptualize the presentations of contextual stimuli (inventory items) as indicators or behavioral referents of needs or non-needs.

Stenson, Kleinmantz, and Scott (1975) utilized a SDT model to interpret Minnesota Multiphasic Personality Inventory (MMPI) profiles. In this study, 126 MMPI profiles which included all 16 scale values were presented to various groups of interpreters. Interpreters were asked to make several judgements including which profiles represented "definitely normal" and "definitely abnormal" individuals, individuals who "had been hospitalized" and "had not been hospitalized," and those individuals who "probably should be hospitalized" and "probably should not be hospitalized." The authors concluded that the "...assumptions of SDT are robust enough to enable its use in a complex judgement task involving personality variables." The parallel between the Stenson, Kleinmuntz, Scott study and the present are obvious.

Robbin (1980) utilized a SDT model to evaluate clinical interpretations of House-Tree-Person drawings. Her results conformed with the Stenson, Kleinmuntz, Scott results in demonstrating the applicability of SDT in complex, clinical judgements regarding personality variables.

Finally, Price's (1966) review of the literature utilizing a SDT model to investigate the possible relationships between personality and perception concluded the following:

First, SDT methods use all the information available in the observer's responses. Second, stimuli presented are under the experimenter's control rather than the observer's control....

Third, more precise statements concerning the observer's sensory capabilities are possible.... Finally, independent measures of the observer's sensory and nonsensory contributions to a given perceptual result are expressly defined features of the method.

Price's remarks again lend support to the use of SDT in applied settings. Price also delineated the "nonsensory contributions" of the observers. This is of importance to the current study in that the discrimination of needs utilizes nonsensory input from the respondents in the discrimination task.

Summary

The United States Air Force Human Resource Laboratory commissioned a team of investigators to evaluate the use of criterion-referenced testing in Air Force training programs. Siegel, Musetti, Federman, Pfeiffer, Wiesen, DeLeo, and Shepperd (1979) performed an extensive review of the literature and compared at least 31 different statistical approaches and research designs in evaluating criterion-referenced training. The authors concluded that:

All (approaches) suffer from one or more conceptual or statistical drawbacks. There appears to be no agreement on a preferred approach... (one issue seems to be the type of reliability that is important for criterion-referenced tests. Part of the problem may lie in the desire to mimic non-referenced tests when criterion-referenced tests are under consideration. Another issue seems to be the type of reliability that is important for criterion-referenced tests. Why should criterion-referenced reliability march to the music of non-referenced reliability? Perhaps ... (it) hears a different drummer.

Having dismissed many of the traditional approaches for various inadequacies, Siegel, et.al., suggested that the Air Force adopt a Signal Detection model for evaluating trainees performance. The authors outlined a detailed SDT approach which the Air Force could utilize in evaluating its trainees such that two distributions of

trainees exist, masters and non-masters. The authors concluded that:

SDT is less subject to artificial constrictions... than the usual statistics... the approach is both diagnostic and prescriptive... The d' statistic is easily interpretable....

As can be seen from the above, other investigators and other agencies have evaluated the applicability of the SDT model for its use in applied settings and have found the SDT approach more attractive than traditional procedures. The benefits of the SDT approach in criterion-referenced training for the Air Force can be applied to the identification of corpsmembers' needs in Job Corps.

Within the context of this study, one goal of the mental health program in Job Corps is the identification of those mental health needs which are institutionally compatible and institutionally conflicting. The current data available to Job Corps of corpsmembers' needs is reactive in nature and pathological in design. At best the data can be viewed as semantic indicators.

This study recognizes that the context-dependent nature of needs requires the use of behavioral referents which are of both a semantic and accuracy nature. The complexity of the need-situation interaction requires a non-traditional analytic procedure which identifies those behaviors which promote successful completion of the corpsmembers' training. The development of the Needs Analysis Inventory utilizing a Signal Detection model should assist Job Corps officials in their task of aiding corpsmembers in their progression through the program.

CHAPTER III

THE PROCEDURE, THE DATA, AND THE TREATMENT OF THE DATA

The Data

The data of this research are of two kinds: primary data and secondary data. The nature of each of these two types of data is described below.

The primary data. One set of primary data was the responses of mental health consultants and corpsmembers to a preliminary survey delineating the needs of corpsmembers. A second set of primary data was the responses of high school students to preliminary, developmental drafts of the inventory. A third set of primary data was the responses of corpsmembers, center staff and mental health consultants to the Needs Analysis Inventory.

The secondary data. The secondary data consisted of Job Corps Health statistics, published studies, texts, and unpublished dissertations and theses concerned with needs analysis, problem identification, Signal Detection Theory, and inventory construction.

The Research Methodology

Given that the data collection procedures utilized a questionnaire and an inventory, Kerlinger (1973) would best describe the research methodology as survey research. However, it could be argued that this research can be described by Katz' (1953) term--exploratory

field study--in that the proposed research attempts to "seek what is" rather than "predicting relations" to be found.

The Research Paradigm

The research paradigm utilized in the investigation was a Signal Detection model proposed by Swets, Tanner, and Birdsall (1964) in which there exists at least two explicitly defined, mutually exclusive behaviors associated with two independent states of the environment.

The decision process regarding the identification (or detection) of a mental health need or problem was viewed as a binary decision with four specified conditions and at least one alternative condition to each of the specified conditions. The four specified conditions were: two correct decisions--stating that a problem or need existed when it actually did exist and stating that no problem or need existed when in actuality neither did, and two incorrect decisions--stating that a problem or need existed when it actually did not and stating that a problem or need did not exist when it actually did. For each of these four specified conditions, at least one alternative condition was possible. The limiting case was delineated such that for the two correct decisions--when a problem or need actually existed, an alternative problem or need was specified rather than the stated problem or need and no alternative needs or problems were specified when no stated problem or need existed. For the two incorrect decisions, the limiting case was stating that an alternative need or problem existed when neither the alternative need or problem nor the stated need or problem existed and stating that an alternative need or problem did not exist when one actually did (Refer to Figure 1).

Corpsmember States A
Problem or Need Exists

		Need or Problem Actually Exist	Need or Problem Does Not Exist
Corpsmember, Center Staff, and Mental Health Consultant	Detects Problem Or Identifies Need	Hit Correctly Identifies Behavior as Stated Problem or Need	False Alarm Incorrectly Identifies Problem or Need As Existing When It Does Not
		Correctly Identifies Behavior As Alter- native Problem or Need	Incorrectly Identifies Alternative Problem or Need as Existing When It Does Not
	Do Not Detect Problem Or Identifies Need	Miss Does Not Attend To Existing Problem Or Need	Correct Rejection Correctly Rejects Behavior as Need Related Or Problematic
		Does Not Attend To Alternative Needs Or Problem Which Exists	Correctly Rejects Behavior As An Alter- native Need Or Problem

Figure 1. Schematic Representation of Proposed Method of Identification of Mental Health Needs and Problems.

The 2 x 2 matrix is common to the Signal Detection experiments.

These four conditions with specified alternatives can be described as:

Hit: a correct decision has been made; an actual problem or need has been identified as the presenting, stated problem or as an alternative problem or need;

False Alarm: an incorrect decision has been made; the stated problem or need does not exist but it has been identified as existing; also, no alternative need or problem exists but one has been specified;

Miss: an incorrect decision has been made; an actual need or problem exists but has not been identified as a problem or need; also, an alternative need or problem exists but has not been identified as such;

Correct Rejection: a correct decision has been made; a need or problem does not exist and has been correctly identified as such; no alternative needs or problems exist and have been identified as such.

The Signal Detection paradigm utilizes several statistics. The first statistic is d' , which represents the difference between the means of the two populations, the noise population (NP) and the signal-noise population (SN). The two populations can be viewed as a mental-health-problem-or-need-exists-population (SN) and as a no-mental-health-problem-or-need-exists-population (NP). The two populations contain a certain degree of overlap. Figure 2 schematically represents the two populations.

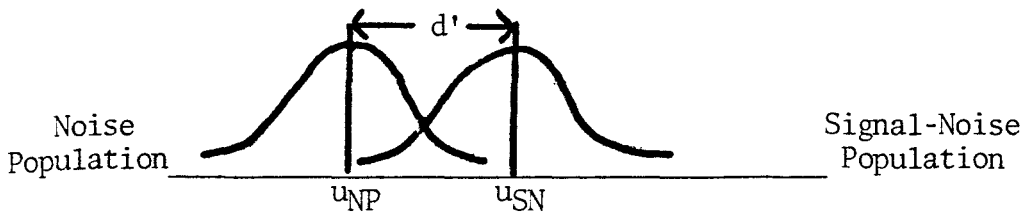


Figure 2. Schematic Presentation of Noise/Signal-Noise Populations and d' .

Given this, d' is thus defined as:

$$d' = \frac{u_{SN} - u_{NP}}{\sigma}$$

where:

u_{SN} = the mean of the signal-noise population

u_{NP} = the mean of the noise population

σ = the variance of the populations

d' = the difference between the two means.

Thus, d' is a measure of the degree of overlap between the two distributions and is utilized as a measure of detectability or sensitivity (Egan, 1975). In this investigation, the noise distribution was represented by those inventory items which did not exhibit a mental health need or problem while the signal-noise distribution was represented by those inventory items which did exhibit a mental health need or problem (Refer to Figure 3).

d' is typically calculated by utilizing Hit Rates (HR) and False Alarm Rates (FAR) and assessing tables developed by Elliot (1964).

Hit Rates are defined as:

$$\text{H.R.} = \frac{\text{Hits}}{\text{Hits} + \text{Misses}}$$

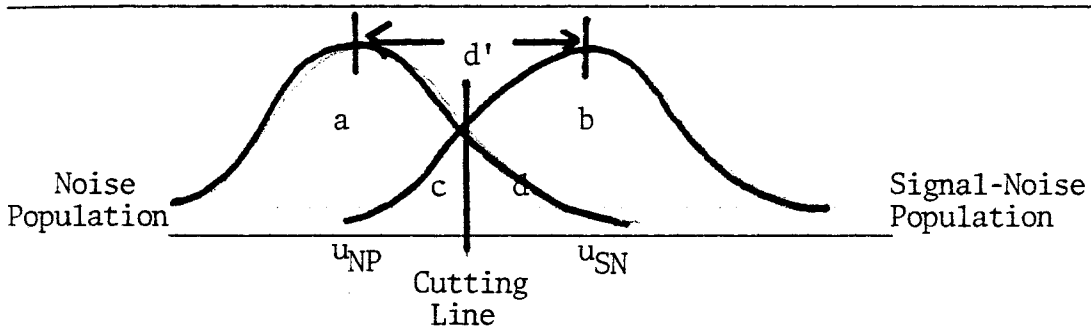
while False Alarm Rates are defined as:

$$\text{F.A.R.} = \frac{\text{False Alarms}}{\text{False Alarms} + \text{Correct Rejections}}$$

Correct Rejection Rates (C.R.R.) and Miss Rates (M.R.) are calculated in similar fashions and are related to Hit Rates and False Alarm Rates such that:

$$\text{C.R.R.} = 1 - \text{F.A.R.} \text{ and}$$

$$\text{M.R.} = 1 - \text{H.R.}$$



where:

- a = Correct Rejection (noise population)
- b = Hit (signal-noise population)
- c = Miss
- d = False Alarm

Figure 3. Relationship Between the Four Conditions of Signal Detection Theory and the Noise/Signal-Noise Distributions.

While d' is the measure of sensitivity, accuracy of responses can be determined as:

$$\text{Accuracy} = \frac{1}{2}(\text{Hit Rate} + \text{Correct Rejection Rate}).$$

Accuracy thus includes both correct decisions. "Chance" accuracy

is typically considered to equal .50, or stated differently a "50-50" or 50% accuracy rate would be expected by chance alone.

Another statistic within the SDT paradigm is β , which is an index of response bias. Response bias or β , is an index which refers to how strictly a criterion was adopted by a respondent. β is measured on a scale of .000 to 2.000 with 1.000 equaling the point of no bias, .000 to 0.999 equaling a bias toward "Yes", or a lax criterion and 1.001 to 2.000 equaling a bias to "No" or a strict criterion (Karp and Layng, 1980). β is determined from tables developed by Hochhause (1972) and found in Karp and Layng (1980) such that:

$$\beta = \frac{B \text{ (Hit Rate)}}{B \text{ (False Alarm Rate)}}$$

By utilizing β , it is possible to determine if respondents maintain the same criterion for various categories of questions or if the criterion has shifted (become more or less stringent) given the types of inventory items.

It is also possible to determine if subjects maintained a preference for a given response. Preference is defined as:

$$\text{Preference} = \frac{\text{HR} + \text{FAR}}{2}$$

Typically, if the preference rate is greater than .50, this would indicate a preference for a "Yes" response. If the preference is less than .50, this indicates a preference for a "No" response.

Finally, the Signal Detection paradigm also yields Receiver Operating Characteristic (ROC) curves which allow for the comparison of Hit Rates and False Alarm Rates (Swets, et.al., 1964). ROC curves plot the probability of a "hit" given a signal-noise presentation

($p(H/SN)$) versus the probability of a False Alarm given a noise presentation ($p(FA/NP)$). By plotting ROC curves, it was possible to evaluate the basic strategies utilized by specific individuals in identifying the mental health needs and problems of the corpsmembers. Figure 4 is an example of ROC curves.

It can be seen that the use of a Signal Detection paradigm allows for:

1. detecting the degree of sensitivity of a subject to a specific stimulus,
2. the definition of cutting lines, and
3. defining the specific strategies of each subject towards the stimulus in identifying whether that stimulus is signal or noise.

Specific Treatment of the Data for Each Subproblem

Subproblem one. The first subproblem was to identify categories of mental health needs and problems specific to corpsmembers from which inventory items were developed.

THE DATA

The data collected for subproblem one were: (1) the frequencies and types of mental health problems found at a Job Corps Center as depicted by actuarial records of medical, disciplinary, and administrative discharges, (2) the responses of the mental health consultants and corpsmembers to a questionnaire, requiring time to select among a list of possible health needs of an "ideal" successful corpsmember graduate, those needs which they consider to be descriptive, (3) the types and frequency of problems for which corpsmembers were seen by

the center counseling staff, and (4) unstructured interviews with center staff and corpsmembers.

THE LOCATION OF THE DATA

FOR THE IDENTIFICATION OF MENTAL HEALTH PROBLEMS

The Job Corps site designated as the developmental site for this research was the Cincinnati Center, in Cincinnati, Ohio. Records of the medical, disciplinary, and administrative discharges are kept in the respective disciplines files. National data addressed to this point were found in the Hayman and Frank study (1979).

THE MEANS OF OBTAINING THE DATA

FOR THE IDENTIFICATION OF MENTAL HEALTH PROBLEMS

Charles Hayman, M.D., Director of the National Health Office for Job Corps, and Donald DuBois, Ph.D., formerly the Director of Mental Health for Job Corps consented to the release of the data. Commodore Jones, Ph.D., Director of Job Corps' Region V consented to and assisted in the release of the data. Mr. Robert Jackson, Center Director of the Cincinnati Job Corps Center, and Mr. Robert Gesier, formerly the Director of Residential Living for the Cincinnati Job Corps Center consented to and assisted in the release of the data. Letters of transmittal can be found in Appendix A.

THE TREATMENT OF THE DATA

FOR THE IDENTIFICATION OF MENTAL HEALTH PROBLEMS

How the Data was Screened

In order to determine mental health problems as depicted by actuarial data, all medical, disciplinary, and administrative terminations from July 1, 1978 to June 30, 1979 was reviewed. This time

period is consistent with the time period used in the Hayman and Frank (1979) study. Interviews with the mental health consultant, residential advisor, counseling staff and corpsmembers were also conducted.

How the Data was Analyzed

The actuarial data from the developmental site were compared to the national statistics reported in Hayman and Frank (1979). A chi-square goodness-of-fit test was performed in order to determine whether or not the data from the developmental site were consistent with the data reported nationally.

The chi-square goodness-of-fit formula used was the Pearson Chi-Square such that:

$$X^2 = \sum \frac{(f_{oj} - f_{ej})^2}{f_{ej}}$$

with (J-1) degrees of freedom where:

f_{oj} = obtained frequency

f_{ej} = expected frequency

Those categories of mental health problems found at the developmental site which had no corresponding category of national data were simply reported in rank-order of occurrence.

The data from interviews conducted at the developmental center were summarized and reported.

THE MEANS OF OBTAINING THE DATA FOR IDENTIFYING MENTAL HEALTH NEEDS

A questionnaire was developed asking mental health consultants and corpsmembers to select from a list of potential health needs,

those needs which they consider to be the most descriptive of the successful Job Corps graduate. The same questionnaire was administered to national mental health consultants to Job Corps and corpsmembers at the developmental site.

THE TREATMENT OF THE DATA

Questionnaire Construction

Questionnaire items identifying health needs were developed utilizing several sources. Questionnaire items were consistent with the currently available demographic and statistical data on placement of Job Corps graduates. Need related categories developed at the National Institute of Health for the Technicon Hospital Information System were an additional source for questionnaire items. A representative list of the content areas of the needs-related questionnaire items is as follows:

age	coping skills used by emotional
sex	reactions to stress
length of stay in Job Corps	behavioral reactions to stress
type of placement	sources of emotional support
communication skills	defense mechanisms used
problem solving abilities	ability to develop relationships
	primary source of emotional support

A copy of this questionnaire can be found in Appendix 2.

How the Data Were Screened

All Questionnaires were screened in order to eliminate those questionnaires which were improperly completed.

How the Item Analysis Was Made

For those questionnaire items involving ordinal, interval, and ratio scales (i.e., length of stay in Job Corps, age, etc.) ranges, means, and standard deviations were computed.

For those questionnaire items involving nominal and ordinal data (i.e., defense mechanism used, problem-solving abilities, emotional reactions to stress, etc.) data were ranked according to frequency with category one being the most frequent.

How the Data Were Interpreted

The actuarial data from the administrative, disciplinary, and medical discharges were interpreted as defining the mental health problems of corpsmembers.

The data from the questionnaire delineating health needs were interpreted as defining the mental health needs of corpsmembers.

Subproblem Two. The second subproblem is to construct an inventory utilizing a Signal Detection model based on the categories of mental health needs and problems which will identify specific mental health needs and problems of corpsmembers.

THE DATA NEEDED

The data required were the data gathered in subproblem one, categories and frequencies of mental health problems as defined by the actuarial data and the categories of mental health needs as defined by the responses of the mental health consultants, center staff, and corpsmembers to the questionnaire delineating health needs.

THE MEANS OF OBTAINING THE DATA

Both sets of data were available at the completion of subproblem one.

THE TREATMENT OF THE DATA

Item Construction

Inventory items were developed for each category of (a) mental

health needs as delineated by the responses of mental health consultants, center staff, and corpsmembers to the initial questionnaire, and (b) mental health problems as defined by the actuarial data in the center files.

For each category of mental health needs and problems, the investigator established the critical dimension(s) defining the specific category. Individual inventory items were then developed for each critical dimension and for all combinations of critical dimensions for every category of mental health needs and problems.

Three different sets of questions were written for each category. These sets consisted of:

- (1) Those items which most individuals would consider to be descriptive of a problem or need,
- (2) "Blanks," or those items which most individuals would not consider to be descriptive of a problem or need, and
- (3) Those items which may or may not be descriptive of a problem or need (the overlap between the two distributions).

Response Categories

The Signal Detection procedure of confidence intervals (Swets and Green, 1964) was utilized for the response categories of the Needs Analysis Inventory. The response categories were:

- Definitely a Need (Problem)
- Probably a Need (Problem)
- Could be a Need (Problem)
- Possibly Not a Need (Problem)
- Probably Not a Need (Problem)

Definitely Not a Need (Problem)

Developmental Testing

Developmental drafts of the Needs Analysis Inventory were tested with two different groups of adolescents. Items were tested for (a) readability, (b) content, (c) sentence structure, (d) comprehension, and (e) match between item and category.

Determination of Noise and Signal-Noise Presentations

Inventory items were evaluated by a panel of seven raters knowledgeable of Job Corps and mental health. The panel established whether or not an inventory item should be considered as a Noise presentation or as a Signal-Noise presentation. Inventory items were defined as Signal-Noise items by an interrater reliability of .71 (5/7). Those inventory items which did not received such a rating from the panel were used in the inventory as the overlap between the two distributions.

Subproblem three. The third subproblem is to utilize a Signal Detection Theory model to analyze and to interpret the data in order to determine how consistently the respondent groups have identified specific mental health problems and needs.

THE MEANS OF OBTAINING THE DATA

The data were gathered in two phases. A control group of 16 Clemente High School students completed the inventory in September, 1980. This student group served the dual function of final developmental testing for the inventory and as acting as a control group for the corpsmembers.

In October, 1980, the inventory was administered to 75 corpsmembers

and 34 staff members at the Cincinnati Job Corps Center, Cincinnati, Ohio. Letters of transmittal can be found in Appendix .

HOW THE INVENTORY WAS ADMINISTERED

The inventory was administered to all corpsmember participants during one session. All corpsmember participants met in the center's lecture hall. Approximately one hour was needed to complete the inventory. Instructions included the following:

- (1) The purpose of the inventory is to attempt to identify the mental health needs and problems of corpsmembers as they perceive them,
- (2) there are no "right" or "wrong" answers to the questions, the purpose is simply to ascertain what each person thinks is accurate, and
- (3) participation is completely voluntary, names of participants will not be collected.

How the Inventory Responses Were Screened

Each returned inventory was screened for completeness and legibility. Only those inventories properly completed were utilized in the needs analysis/problem identification.

How the Inventory Was Analyzed

Respondents to the inventory were divided into five groups.

These groups were:

- (1) corpsmembers from the Cincinnati Center,
- (2) staff members from the Cincinnati Center,
- (3) the mental health consultants to Job Corps,
- (4) students from Clemente High School, Chicago (the control

group), and

(4) all the above.

Several iterations of analyses were performed for the above respondent groups. The corpsmembers', staffs' mental health consultants' and control groups' responses were analyzed for each category of inventory items. In addition, all respondents were treated as one class (group 4, above) and all responses were analyzed for each category of inventory items. Finally, the entire inventory was analyzed across categories for all responses.

Analysis included the use of d' , Hit Rates, False Alarm Rates, and generation of ROC curves for the four respondent groups by inventory categories and for the entire inventory. In addition Response Bias, Preferences, and Accuracy were calculated for the four respondent groups by inventory categories and also for the entire inventory.

How d' Was Calculated

In order to establish d' , the six categories of (1) Definitely a Need (Problem), (2) Probably a Need (Problem), (3) Could be a Need (Problem), (4) Possibly Not a Need (Problem), (5) Probably Not a Need (Problem), and (6) Definitely Not a Need (Problem) were collapsed into two categories of:

- 1) Need (or Problem) Identified or "Yes" response and
- 2) No Need (or Problem) Identified, or "No" response.

Hit rates and False Alarm rates for respondents were calculated. With these two calculations it was possible to determine d' from tables developed by Elliot (1964) for all respondents to all categories of items and for the entire inventory as a whole.

CHAPTER IV

THE RESULTS OF THE DATA

Developmental Site. The Job Corps Center chosen as the developmental site for the Needs Analysis Inventory was the Cincinnati Job Corps Center in Cincinnati, Ohio. The Cincinnati center has a capacity of 225 corpsmembers of which 148 are male and 77 are female. Residential accommodations are provided for the male corpsmembers only. Female corpsmembers commute from the metropolitan Cincinnati area. There are approximately 40 staff members at the center.

Subproblem one. The first subproblem was to identify categories of mental health needs and problems specific to corpsmembers from which inventory items were developed.

THE DATA

The data collected for subproblem one were: (1) the responses of the mental health consultants and corpsmembers to a questionnaire requiring them to select from a list of possible health needs, those needs which they considered to be descriptive of an "ideal, successful corpsmember, (2) the frequencies and types of mental health problems as depicted by the actuarial records of the medical, disciplinary, and administrative discharges, (3) the types and frequencies of problems for which corpsmembers were seen by the center counseling staff, and (4) unstructured interviews with center staff and corpsmembers.

"Ideal, Successful Corpsmember." A questionnaire was administered to the National Mental Health Consultants for Job Corps at the National Health Colloquium in Arlington, Virginia, in February, 1980. The questionnaire was adapted from a reporting structure used at the National Institute of Health Clinical Center and developed by Technicon Medical Information Systems, Inc. The purpose of the questionnaire was to define categories of needs for which inventory items would be written. A copy of the questionnaire is contained in Appendix . Of the twenty Mental Health Consultants present at the Colloquium, 10 returned completed questionnaires. Demographically, the Mental Health Consultants viewed the "ideal" corpsmember as a 19.9 year old corpsmember who had no dependents and whose length of stay in Job Corps was approximately one year. These data are depicted in Table 1.

The mental health consultants described the successful corpsmember as single with no children, whose scholastic achievement was satisfactory. The ideal corpsmember's primary sources of support while in Job Corps were the Residential Staff and Counseling Staff. The relationship which the successful corpsmember had with both his(her) family of origin and others in general tended to be disharmonious but functional. They tended to be proud of their accomplishments, pleased with themselves yet realistic and were able to express their feelings and needs. Their attitude towards their experience in Job Corps was realistic, adaptive, and self-confident. The successful corpsmember coped with stress by using repression and emotional isolation while they were able to resolve routine problems on their own and functioned well in crises.

Table 1

Responses of Mental Health Consultants to Preliminary
Questionnaire Identifying Categories of Needs

Category	Responses of Mental Health Consultants		
	Range	Mean	Standard Deviation
Age (in years)	18-21	19.9	0.83
Length of stay (in months)	6-15	11.4	2.34
Number of Dependents	0-1	0.2	0.87

A rank-order of the mental health consultants' responses to the categories of health needs describing the ideal corpsmember is presented in Table 2.

In April, 1980, the same preliminary questionnaire was administered to 20 corpsmembers at the Cincinnati Job Corps Center. Of the twenty questionnaires administered at the center, three were never returned and three were eliminated because they were improperly completed. Thus 14 corpsmembers properly completed and returned the preliminary questionnaire delineating mental health needs of the ideal corpsmember. Demographically, the corpsmembers viewed the "ideal, successful" corpsmember as a 19.5 year old student with one dependent, whose length of stay in Job Corps was approximately one year. These data are depicted in Table 3.

The corpsmembers described the "successful" corpsmember as single with one dependent and whose scholastic achievement was satisfactory. The "ideal" corpsmember's primary sources of support while in Job Corps were the Counseling Staff, Center Staff (non-teachers, non-R.A.s), and other corpsmembers. The relationship the successful corpsmember had with his/her family of origin and others in general tended to be seen as warm and caring, supportive and dependable. The "ideal" corpsmember was seen as proud of his/her accomplishments, pleased with self, self-assured, and realistically hopeful about themselves. The ideal corpsmember was described as self-confident, adaptive, capable, and friendly. The successful corpsmember possessed adequate socialization skills and primarily used rationalization as a means of coping with stress. They resolved routine problems on their

Table 2

Response of Mental Health Consultants to Preliminary
Questionnaire Identifying Categories of Needs of Corpsmembers

Category	Response ^a
Scholastic Achievement	
Satisfactory	10
All other categories	0
Marital Status	
Single	10
All other categories	0
Sources of Support	
Resident Assistants	6
Counseling Staff	5
Other Corpsmembers	2
Friends	2
Teachers	2
All other categories	0
Relationships with Others	
Disharmonious but functional	8
Mutually Supportive	5
Dependable	4
Warm and Caring	4
Independent	3
Nonsupportive	2
Unable to Assist Others	2
All other categories	0
Emotional Reactions	
Proud of Accomplishments	6
Pleased with self	6
Expressed Needs	6
Expressed Feelings	4
Realistic	4
Appropriate Anxiety	4
Self-Assured	2
Challenged	2
All other categories	0

Table 2 (continued)

Category	Response ^a
Attitude Toward Job Corps	
Adaptive	6
Capable	6
Self-confidence	6
Realistic	6
Satisfactory	4
Sense of Humor	2
Insightful	2
Sensitive	2
Friendly	2
All other categories	2
Coping with Stress	
Repression	4
Emotional Insulation	3
Denial	2
Fantasy	2
Identification	2
All others	0

^aMore than one response per item per person was given.

Table 3

Responses of Corpsmembers to Preliminary Questionnaire
Identifying Categories of Needs

Category	Responses of Corpsmembers		
	Range	Mean	Standard Deviation
Age (in years)	18-21	19.5	0.90
Length of stay (in months)	3-18	11.4	2.97
Number of Dependents	0-3	1.03	1.52

own or sought out help for problem solving.

A rank-order of the corpsmembers' responses to the categories of health needs describing the ideal corpsmember is presented in Table 4.

Actuarial Data. In April, 1980, actuarial data consisting of the administrative, medical, and disciplinary discharges at the Cincinnati Center were assessed by the investigator. Also, the types and frequencies of problems for which corpsmembers were seen either by the counseling staff or for disciplinary problems were also assessed. During the time period under consideration, the Cincinnati Center had not reported any administrative, medical, or disciplinary discharges. However, all counseling records were assessed and summarized by members of the Cincinnati Job Corps Center at the request of the investigator. Of the 231 corpsmembers at the center at that time, 28, or 12%, of the students were being seen by the center counseling staff. The types of problems and issues for which corpsmembers were seen by the counseling staff were compared (when possible) with national data compiled by Hayman and Frank (1979). A Pearson Chi-Square Goodness-of-Fit test was performed for those categories of data for which both national and center data were available. Table 5 presents this data.

For those problems for which no national data were available, a simple rank-order of problems was obtained. These findings are reported in Table 6.

Unstructured Interviews. In April, 1980, a series of unstructured

Table 4

Responses of Corpsmembers to Preliminary Questionnaire
Identifying Categories of Needs of Corpsmembers

Category	Response ^a
Scholastic Achievement	
Excellent	5
Satisfactory	14
Unsatisfactory	2
Marital Status	
Single	14
Married	1
Divorced	1
All other categories	0
Sources of Support	
Counseling Staff	14
Other Center Staff	14
Other Corpsmembers	13
Resident Assistants	5
Family	2
Friends	2
All other categories	0
Relationships with Others	
Warm and Caring	14
Supportive	12
Dependable	10
Independent	7
Stable	4
Nonsupportive	3
Disharmonious but functional	3
Unable to assist others	2
Distant and detached	1
All other categories	0
Emotional Reactions	
Proud of Accomplishments	14
Realistically	14
Pleased with Self	13
Challenged	11
Expressed Needs	8
Expressed Feelings	8
Self Assured	8
Inquisitive	7
Angry	6
Appropriately Anxious	2
All Other Categories	0

Table 4 (continued)

Category	Response ^a
Attitudes Toward Job Corps	
Adaptive	14
Self-Confident	14
Capable	12
Sense of humor	12
Friendly	12
Mature	7
Stable	5
Warm	2
Assertive	2
Optimistic	2
All other categories	0
Coping with Stress	
Rationalization	14
Projection	8
Emotional Insulation	5
Identification	5
Withdrawal	4
Denial	4
Acting-out	1
All other categories	0

^aMore than one response per item per person was given.

Table 5

Chi-Square Goodness-of-Fit Test Comparing Type and
Frequency of Mental Health Problems at Cincinnati
Job Corps Center with National Data

Category of Mental Health Problem	Obtained Frequency Cincinnati Job Corps Center	Expected Frequency From National Data
Confused, Disoriented	3	19
Depressed, Suicidal	2	6
Drug Abuse	5	8
Obesity	1	1
Stress Reaction	1	6
Violent, Combative	8	7

$X^2 = 21.58$

df = 5

significance = .001

Table 6

Types and Frequencies for Which Corpsmembers Were Seen by
Counseling Staff for Which no National Data Were Available

Reason Corpsmember was Seen By Counselors Staff	Frequency
Unexcused Absence from classes	1
Job Placement	1
Vandalism	1
Theft	2
Assertiveness Training	3

interviews were conducted by the investigator with staff and corpsmembers of the Cincinnati Center. The purpose of the interviews was to obtain staff members' and corpsmembers' impressions of what the needs and problems of corpsmembers are. The investigator had hoped that the subjective, ideographic data obtained through these interviews would corroborate with--or at least be consistent with the actuarial data and responses to the initial questionnaire. Four hours of interviews were conducted with five staff members (one administrator, one counselor, two teachers, one nurse) and four hours of interviews were conducted with small groups of corpsmembers (approximately 45 corpsmembers).

Staff comments. Comments of the center staff regarding what the mental health needs of the corpsmembers are consisted of the following:

- corpsmembers needed to be "orderly, realistic, and receptive to the center rules and regulations"; they must "buy-into" the system;
- corpsmembers responded best when there were "clearly, defined limits."
- corpsmembers needed to be "motivated to work", "given responsibility", and must be taught to "delay gratification."
- corpsmembers need to "feel important," need "positive feedback especially about their work", and function best when they (the corpsmembers) view the center as a "family atmosphere;"
- finally, corpsmembers need to be "taught how to be tactful", engaged in more "abstract thinking," and respond "differentially to problems."

Staff comments regarding the mental health problems of the corpsmembers consisted of:

- "too impatient", especially about "a problem";
- "ventilate too much";
- "drugs", especially "alcohol and marijuana";
- and "too many bad attitudes."

Corpsmember comments regarding the mental health needs of corpsmembers consisted of:

- "must learn to follow the rules",
- become more "concerned with school", especially with the match between their course of study at the center and if there is "an actual job out-there";
- need to be more "serious, and realistic",
- "put-up-with different kinds of people", especially knowing "who to trust", and to whom they should "say 'NO' to."

Corpsmembers' statements regarding the mental health problems of corpsmembers consisted of:

- "too much fighting"
- "too much drugs"
- "expectations are built-up, then let down."
- too much "pressure to do well"
- discipline is "not strict enough"
- "bored", "not enough leisure time activities," and
- "staff is always leaving" (staff turnover).

Given the above sets of data, the following categories and subcategories of mental health needs and problems were defined:

1. Personal Needs
 - A. Marital Status
 - B. Financial Concerns
 - C. Privacy
 - D. Length of Stay in Job Corps
 - E. Personal Belongings
2. Individual Needs
 - A. Adaptability
 - B. Assertiveness
 - C. Problem-Solving Ability
 - D. Competence
 - E. Leadership
 - F. Academics
3. Support Systems
 - A. Peer Support
 - B. Adult (staff) Support
4. Sexuality
 - A. Sexual Relations
 - B. Birth Control
5. Substance Abuse
 - A. Alcohol (Beer and Wine)
 - B. Alcohol (all others)
 - C. Marijuana
6. Problems
 - A. Stress
 - B. Vandalism
 - C. Depression
 - D. Psychosis

Subproblem two. The second subproblem was to construct an inventory utilizing a Signal Detection model based on the categories of mental health needs and problems.

THE DATA

The data required were the categories of mental health needs as defined by the mental health consultants, center staff, and corpsmembers,

and the categories of mental health problems as defined by the actuarial data.

Construction of Inventory Items. Sets of inventory items were written for each category of needs and problems. In order to ensure that differential responses to categories of items would be achieved, three classes of inventory items were written for each category. These classes of items were:

1. Those items which most individuals could consider as descriptive of a need or problem for that category of inventory items,
2. Those items which most individuals could consider as NOT descriptive of a need or problem for that category of items, and
3. Those items which were intentionally written as ambiguous items so that most individuals could consider them as either descriptive or NOT descriptive of a need or a problem for that category of inventory items.

These three classes of inventory items do not reflect the actual Noise and Signal-Noise distributions achieved for the inventory. Tables 7-12 exhibit the individual items for each category of mental health needs and problems. Tables 7-12 do not reflect the actual Noise and Signal-Noise populations.

Response Categories. The Signal Detection procedure of confidence intervals was utilized for the response categories. Initially, six response categories were formulated as:

- ___ Positive, this is a need
- ___ Fairly Certain, this is a need

- ___ Unsure, but probably a need
- ___ Unsure, but probably not a need
- ___ Fairly Certain, this is not a need
- ___ Positive, this is not a need

and

Table 7

Inventory Items Corresponding to the Category of Personal Needs

At graduation from Job Corps, corpsmembers should be single or never married.

Private areas should be provided for corpsmembers to talk with center staff about personal problems.

Corpsmembers need a place which they can consider as their own.

Corpsmembers personal belongings should be kept in a locked cabinet.

Corpsmembers need time to be alone.

In order to get the most from their training corpsmembers should stay at a center for at least one year.

In order to get the most out of their training, corpsmembers should stay at the center for at least six months.

At graduation from job corps, it is important that a corpsmember be required to financially support himself or herself.

Corpsmembers should not have to worry about the safety of their personal belongings.

Table 8

Inventory Items Corresponding to the Category of Individual Needs

Before they arrive at the center, corpsmembers should be told how much they will be actually paid while they are at the center.

Corpsmembers should be taught how-to-memorize in order to improve their study habits.

A corpsmember will often not know how to stand-up for himself.

Corpsmembers should know at least two different ways of identifying problems.

A corpsmember might think that the only way to get what he wants is by yelling and fighting.

If a corpsmember is doing well academically and vocationally, it is not important that he or she follow the rules of the center.

Corpsmembers should be able to outline the basic steps which they use in order to achieve the major goals which they have set for themselves.

If a rule "goes against" a corpsmember's principles, that corpsmember should not be made to follow that rule.

Corpsmembers need to attend all classes.

In order for a corpsmember to get the most out of Job Corps, it is important that the corpsmembers follow all the rules of the center.

If a corpsmember is doing well in a class, then he or she should not have to go to that class regularly.

It is particularly important that new corpsmembers completely follow all the center rules and regulations.

Since most rules are "made to broken" it is not important that corpsmembers follow them.

Corpsmembers should like their schoolwork.

It is important that corpsmembers are able to detect progress in their vocational interests.

It is important that corpsmembers are proud of their work.

Corpsmembers' expectations of the center's equipment and facilities should conform with the actual equipment and facilities at the center.

Corpsmembers must learn which rules of the center can be ignored and which rules must always be followed.

Corpsmembers must learn to cooperate with people whose ideas are greatly different from their own.

It is important that corpsmembers are proud of their scholastic abilities.

It is not necessary for corpsmembers to demonstrate competency in their school work.

Table 8 (continued)

Corpsmembers need assertiveness training.

Corpsmembers should be able to specify specific goals which they hope to achieve while they are at the Job Corps Center.

Corpsmembers should be able to state at least two different procedures for identifying problems.

Corpsmembers' expectations of center life should conform with the actual conditions of center life.

Corpsmembers should be able to state the difference between being assertive and being aggressive.

It is particularly important for new corpsmembers to completely follow all the center rules and regulations.

Corpsmembers should be able to identify a job or skill which they will find as personally satisfying.

Corpsmembers should be given the opportunity to lead others during some part of their center life.

Corpsmembers often have difficulty knowing what they should study, for a test.

During the first month at a center, corpsmembers often question if they have made a correct decision by joining Job Corps.

Table 9

Inventory Items Corresponding to the Category of Support Systems

Weekly sessions with members of the counseling staff are necessary for new corpsmembers during their first three months at the center.

A corpsmember should know how to say "no" to a friend without losing that person's friendship.

Even though it is difficult, corpsmembers must learn how to "say no" to their friends.

Corpsmembers need to develop a relationship with an adult staff member in order to have a source of adult support while they are at the center.

A corpsmember should be taught to view other corpsmembers as a primary source of support while they are at the center.

Frequently corpsmembers are afraid to "say no" to a friend because they do not want to lose that friendship.

Turnover of center staff helps corpsmembers to learn to live in the "real world."

The quality of the center staff is often not appreciated or noticed by the corpsmembers.

Corpsmembers should be taught how to end friendships with people whom they no longer want to be friends.

Often corpsmembers agree to do something because all their friends are doing it.

Corpsmembers should be taught how to make friends.

Center staff turnover effects corpsmembers.

Table 10

Inventory Items Corresponding to the Category of Sexuality

If two corpsmembers want, they should be allowed to engage in sexual relations.

Some corpsmembers sexual orientation is homosexuality.

Corpsmembers need explicit information in birth control procedures.

Corpsmembers should be aware of three different means of birth control and the relative effectiveness of each.

Information regarding the means of obtaining at least two different types of birth control should routinely be made available to all corpsmembers.

Although often sexually active, many corpsmembers still have alot to learn about personal relationships.

Corpsmembers need explicit information and instructions in the cultural norms of human sexuality.

Information regarding how to obtain abortions should be provided to any corpsmember.

Corpsmembers need explicit instructions in the biology of human sexuality.

Table 11

Inventory Items Corresponding to the Category of Substance Abuse

Some corpsmembers will occasionally drink "hard liquor" (bourbon, gin, vodka, etc.) off campus, once or twice a month or less.

Once in awhile a corpsmember will sell marijuana to his friends in order to make money.

Some corpsmembers will drink hard liquor (bourbon, gin, vodka, etc.) every Friday and Saturday night, off campus.

Often, corpsmembers will drink beer or wine every Friday and Saturday night, off campus

Some corpsmembers will bring beer or wine on campus even though they know it is against the rules.

Corpsmembers who can "handle their liquor" (drink without getting drunk) should be allowed to drink off campus.

Frequently a corpsmember will begin to use marijuana daily.

Sometimes corpsmembers think they should be allowed to smoke marijuana because there is no documented proof that it is dangerous.

Sometimes a corpsmember will sell marijuana to another corpsmember in order to "cover the cost" of buying it.

Three or four corpsmembers bring a fifth of "hard liquor" (bourbon, gin, vodka, etc.) into the dorm on a Saturday afternoon and proceed to drink the entire bottle.

Corpsmembers who are of "legal age" should be allowed to drink off campus.

Some corpsmembers will give marijuana to other corpsmembers.

Once or twice a month a corpsmember might smoke marijuana.

Some corpsmembers smoke marijuana only because their friends do.

Sometimes, three or four corpsmembers will bring a six pack of beer or bottle of wine into the dorm on a Saturday afternoon and drink all of it.

Corpsmembers will often smoke marijuana off campus and only on weekends.

Some corpsmembers will occasionally drink beer or wine off campus (once or twice a month or less).

Table 12

Inventory Items Corresponding to the Category of
Mental Health Problems

Some corpsmembers "see people" when there is no other there.

Some corpsmembers take a nap daily before supper.

Corpsmembers should be taught to expect periods of depression while they are at the center.

If a corpsmember is wrongly accused of something, he or she can feel justified in destroying center property.

Corpsmembers disappointments with center life usually takes care of itself in time.

Sometimes when corpsmembers are "horsing around" they will damage or break center property.

Corpsmembers should be able to recognize when they are depressed.

Corpsmembers need to know why some of their friends "hear voices" or "see things" which are not there.

Frequently a corpsmember feels that other corpsmembers are out-to-get-him or her.

Corpsmembers need information regarding the kinds of stress which they will undergo while at the center.

Corpsmembers should be able to state the things and situations which they find as stressful.

Corpsmembers should be able to demonstrate at least two different ways of dealing with stressful situations.

Corpsmembers should be able to identify how they act when they are under stress.

If a corpsmember "acts crazy" (hears voices, etc.) his/her friends and other corpsmembers from the dorm should be given the opportunity to talk about it.

Often corpsmembers write graffiti on center walls.

A corpsmember will sometimes get depressed and now know why.

When a corpsmember "acts crazy" (hears voices, etc.) it is often upsetting to his friends.

Sometimes a corpsmember will just feel worthless.

Corpsmembers should be able to state at least two different ways of dealing with stressful situations.

Sometimes corpsmembers will purposely destroy center property "for the fun of it."

Corpsmembers should be able to define stress including the physiological and psychological aspects of stress.

Some corpsmembers "hear voices" when no one is talking.

- Positive, this is a problem
- Fairly Certain, this is a problem
- Unsure, but probably a problem
- Unsure, but probably not a problem
- Fairly Certain, this is not a problem
- Positive, this is not a problem

During the course of developmental testing, subjects complained that the response categories were "cumbersome", "artificial", and people "just don't talk like that." With assistance from subjects in developmental testing the following response categories were developed:

- Definitely a Need
- Probably a Need
- Could be a Need
- Possibly Not a Need
- Probably Not a Need
- Definitely Not a Need

and

- Definitely a Problem
- Probably a Problem
- Could be a Problem
- Possibly Not a Problem
- Probably Not a Problem
- Definitely Not a Problem

This second set of response categories was utilized for all subsequent drafts of the inventory. To control for any bias entering into the responses due to position of the response categories (halo

effect, central tendencies effect, etc.) five different sequences of the responses were utilized. Table 13 lists these five different sequences.

Developmental Testing. During August, 1980, developmental testing of the completed inventory was performed on four, white, suburban high school students. The subjects were two male and two female, 16 years-old, high school sophomores. Both of the male students had been scheduled for admission to the Joliet Job Corps Center in Joliet, Illinois, but had decided to return to high school instead. Subjects were given instructions including exactly what the inventory was attempting to perform. They were asked to read each item and make it as if it applied to themselves. They were to circle any words which they did not understand, or any phrases which were unintelligible. After completing the inventory, each item was discussed to see if the four subjects could identify to which general category the individual item belonged. If three of the four students could properly identify the category of needs or problems, the inventory item was considered to be representative of that specific category. The final match of an item with a category is as depicted in Tables 7-12. The major change of the developmental testing was the changes in the response categories as mentioned above.

Determination of Noise- and Signal-Populations. In September, 1980, the Regional Mental Health Consultants to Job Corps were asked to complete the inventory. The Regional Mental Health Consultants determined the Noise and Signal populations through a single-blind technique. Ostensibly, the Regional Mental Health Consultants were

Table 13

Response Categories Used on Inventory

Definitely a Need
 Probably a Need
 Could be a Need
 Possibly not a Need
 Probably not a Need
 Definitely not a Need

Probably a Need
 Possibly not a Need
 Definitely not a Need
 Definitely a Need
 Probably not a Need
 Could be a Need

Could be a Need
 Probably a Need
 Definitely not a Need
 Definitely a Need
 Probably not a Need
 Possibly not a Need

Probably not a Need
 Possibly not a Need
 Definitely a Need
 Could be a Need
 Definitely not a Need
 Probably a Need

Definitely not a Need
 Probably not a Need
 Possibly not a Need
 Could be a Need
 Probably a Need
 Definitely a Need

Definitely a Problem
 Probably a Problem
 Could be a Problem
 Possibly not a Problem
 Probably not a Problem
 Definitely not a Problem

Probably a Problem
 Possibly not a Problem
 Definitely not a Problem
 Definitely a Problem
 Probably not a Problem
 Could be a Problem

Could be a Problem
 Probably a Problem
 Definitely not a Problem
 Definitely a Problem
 Probably not a Problem
 Possibly not a Problem

Probably not a Problem
 Possibly not a Problem
 Definitely a Problem
 Could be a Problem
 Definitely not a Problem
 Probably a Problem

Definitely not a Problem
 Probably not a Problem
 Possibly not a Problem
 Could be a Problem
 Probably a Problem
 Definitely a Problem

Table 14

Noise- and Signal-Noise Populations for the
Category of Personal Needs

Noise Population Inventory Items

At graduation from Job Corps, corpsmembers should be single or never married.

In order to get the most from their training, corpsmembers should stay at a center for at least one year.

Corpsmembers need time to be alone.

At graduation from Job Corps, it is important that a corpsmember be required to financially support himself or herself.

Signal-Noise Population Inventory
Items

Corpsmembers should not have to worry about the safety of their personal belongings.

In order to get the most out of their training, corpsmembers should stay at the center for at least six months.

Private areas should be provided for corpsmembers to talk with center staff about personal problems.

Corpsmembers personal belongings should be kept in a locked cabinet.

Corpsmembers need a place which they can consider as their own.

Before they arrive at the center, corpsmembers should be told how much they will be actually paid while they are at the center.

Table 15

Noise- and Signal-Noise Populations for the
Category of Individual Needs

Noise Population Inventory Items

Corpsmembers should like their school work.

If a rule "goes against" a corpsmember's principles, that corpsmember should not be made to follow that rule.

Since most rules are "made to be broken" it is not important that corpsmembers follow them.

Corpsmembers need assertiveness training.

It is not necessary for corpsmembers to demonstrate competency in their school work.

If a corpsmember is doing well academically and vocationally, it is not important that he or she follow the rules of the center.

Corpsmembers should be given the opportunity to lead others during some part of their center life.

Corpsmembers should be taught how-to-memorize in order to improve their study habits.

If a corpsmember is doing well in a class, then he or she should not have to go to that class regularly.

Corpsmembers' expectations of the center's equipment and facilities should conform with the actual equipment and facilities at the center.

Signal-Noise Population Inventory Items

In order for a corpsmember to get the most out of job corps, it is important that the corpsmember follow all the rules of the center.

It is important that corpsmembers are able to detect progress in their vocational interests.

Corpsmembers must learn which rules of the center can be ignored and which rules must always be followed.

Corpsmembers should be able to identify a job or skill which they will find as personally satisfying.

Corpsmembers should know at least two different ways of identifying problems.

It is particularly important that new corpsmembers completely follow all the center rules and regulations.

Corpsmembers must learn to cooperate with people whose ideas are greatly different from their own.

Corpsmembers should be able to outline the basic steps which they use in order to achieve the major goals which they

Corpsmembers should be able to state at least two different procedures for identifying problems.

Table 15 (continued)

Noise Population Inventory Items

Corpsmembers' expectations of center life should conform with the actual conditions of center life.

Corpsmembers often have difficulty knowing what they should study, for a test.

A corpsmember will often not know how to stand-up for himself.

Corpsmembers should be able to state the difference between being assertive and being aggressive.

During the first month at a center, corpsmembers often question if they have made a correct decision by joining job corps.

Signal-Noise Population Inventory Items

It is important that corpsmembers are proud of their scholastic abilities.

A corpsmember might think that the only way to get what he wants is by yelling and fighting.

Corpsmembers need to attend all classes.

It is important that corpsmembers are proud of their work.

Corpsmembers should be able to specify specific goals which they hope to achieve while they are at the job corps center.

It is particularly important for new corpsmembers to completely follow all the center rules and regulations.

Table 16

Noise- and Signal-Noise Populations for the
Category Support Systems

Noise Population Inventory Items

Even though it is difficult, corpsmembers must learn how to "say no" to their friends.

The quality of the center staff is often not appreciated or noticed by the corpsmembers.

Once or twice a month a corpsmember might smoke marijuana.

Corpsmembers need to develop a relationship with an adult staff member in order to have a source of adult support while they are at the center.

Frequently corpsmembers are afraid to "say no" to a friend because they do not want to lose that friendship.

Turnover of center staff helps corpsmembers to learn to live in the "real world."

Weekly sessions with members of the counseling staff are necessary for new corpsmembers during their first three months at the center.

Signal-Noise Population
Inventory Items

A corpsmember should know how to say "no" to a friend without losing that person's friendship.

Often corpsmembers agree to do something because all their friends are doing it.

Corpsmembers should be taught how to end friendships with people whom they no longer want to be friends.

Corpsmembers should be taught how to make friends.

A corpsmember should be taught to view other corpsmembers as a primary source of support while they are at the center.

Center staff turnover effects corpsmembers.

Table 17

Noise- and Signal-Noise Populations for the
Category of Sexuality

Noise Population Inventory Items

Some corpsmembers sexual orientation is homosexuality.

Corpsmembers need explicit instructions in the biology of human sexuality.

Corpsmembers need explicit information and instructions in the cultural norms of human sexuality.

If two corpsmembers want, they should be allowed to engage in sexual relations.

Signal-Noise Population
Inventory Items

Information regarding how to obtain abortions should be provided to any corpsmember.

Information regarding the means of obtaining at least two different types of birth control should routinely be made available to all corpsmembers.

Corpsmembers should be aware of three different means of birth control and the relative effectiveness of each.

Although often sexually active, many corpsmembers still have alot to learn about personal relationships.

Corpsmembers need explicit information in birth control procedures.

Table 18

Noise- and Signal-Noise Population for the
Category of Substance Abuse

Noise Population Inventory Items

Sometimes corpsmembers think they should be allowed to smoke marijuana because there is no documented proof that it is dangerous.

Corpsmembers who can "handle their liquor" (drink without getting drunk) should be allowed to drink off campus.

Corpsmembers who are of "legal age" should be allowed to drink off campus.

Some corpsmembers will give marijuana to other corpsmembers.

Sometimes, three or four corpsmembers will bring a six pack of beer or bottle of wine into the dorm on a Saturday afternoon and drink all of it.

Corpsmembers will often smoke marijuana off campus and only on weekends.

Some corpsmembers will drink hard liquor (bourbon, gin, vodka, etc.) every Friday and Saturday night, off campus.

Once in awhile a corpsmember will sell marijuana to his friends in order to make money.

Three or four corpsmembers bring a fifth or "hard liquor" (bourbon, gin, vodka, etc.) into the dorm on a Saturday afternoon and proceed to drink the entire bottle.

Signal-Noise Population Inventory Items

Sometimes a corpsmember will sell marijuana to another corpsmember in order to "cover the cost" of buying it.

Frequently a corpsmember will begin to use marijuana daily.

Some corpsmembers will occasionally drink beer or wine off campus (once or twice a month or less).

Some corpsmembers will bring beer or wine on campus even though they know it is against the rules.

Some corpsmembers will occasionally drink "hard liquor" (bourbon, gin, vodka, etc.) off campus, once or twice a month or less.

Table 18 (continued)

Noise Population Inventory Items

Some corpsmembers smoke marijuana only because their friends do.

Often, corpsmembers will drink beer or wine every Friday and Saturday night, off campus.

Signal-Noise Population
Inventory Items

Table 19

Noise- and Signal-Noise Populations for the
Category of Mental Health Problems

Noise Population Inventory Items

Some corpsmembers take a nap daily before supper.

Corpsmembers need to know why some of their friends "hear voices" or "see things" which are not there.

Corpsmembers should be able to define stress including the physiological and psychological aspects of stress.

Often corpsmembers write graffitti on center walls.

Corpsmembers should be taught to expect periods of depression while they are at the center.

Corpsmembers should be able to demonstrate at least two different ways of dealing with stressful situations.

Sometimes a corpsmember will just feel worthless.

Sometimes when corpsmembers are "horsing around" they will damage or break center property.

Corpsmembers disappointments with center life usually takes care of itself in time.

Corpsmembers should be able to state at least two different ways of dealing with stressful situations.

Corpsmembers should be able to state the things and situations which they find as stressful.

Signal-Noise Population Inventory Items

Corpsmembers should be able to identify how they act when they are under stress.

When a corpsmember "acts crazy" (hears voices, etc.) it is often upsetting to his friends.

Frequently a corpsmember feels that other corpsmembers are out-to-get-him or her.

Some corpsmembers "see people" when there is no one there.

A corpsmember will sometimes get depressed and not know why.

If a corpsmember "acts crazy" (hears voices, etc.) his/her friends and other corpsmembers from the dorm should be given the opportunity to talk about it.

Corpsmembers should be able to recognize when they are depressed.

Corpsmembers need information regarding the kinds of stress which they will undergo while at the center.

If a corpsmember is wrongly accused of something, he or she can feel justified in destroying center property.

Sometimes corpsmembers will purposely destory center property "for the fun of it."

Some corpsmembers "hear voices" when no one is talking.

asked to complete the inventory and comment on the suitability of the items. Of 20 Regional Mental Health Consultants, only seven returned completed inventories. All seven inventory had been properly completed and were used to determine the Signal and Noise populations. If 5, 6, or 7 mental health consultants agreed that an inventory item was descriptive of a need or problem, then the item is considered to be a Signal presentation on the inventory. Stated otherwise, if an inventory item achieved an inter-rater reliability score of equal to or greater than .625, the item is considered to be a Signal item. If only 4, 3, 2, 1, or none of the mental health consultants agree that the item was descriptive of a need or a problem, then the item is considered to be a Noise presentation on the inventory. Again, stated differently, if an item achieved an inter-rater reliability score of less than .625, the item was considered to be a Noise item. In this manner, Signal and Noise are defined by the consensus of the opinions of the mental health consultants rather than reflecting the actual state-of-the-world. Tables 14-19 list the Noise and Signal-Noise populations for each category of items based on the consensus of the mental health consultants' opinions. In all, 52 items are considered as Noise presentations and 48 items are considered as Signal presentations. The distribution of Signal and Noise items by category of inventory items can be found in Table 20.

In addition, a second Noise/Signal-Noise distribution of the inventory items was calculated based on the responses of the Job Core Center staff. Again, if an inter-rater reliability score equal to or greater than .625 was achieved, the item was considered to be a Signal presentation. If an inventory item achieved an inter-rater reliability

score less than .625, it was considered to be a Noise presentation. This second set of distributions were utilized as a comparison to the first set of distributions. In the second distribution set, a total of 34 items were considered as Signal presentations while 66 items were considered as Noise presentations.

The Third Subproblem. The third subproblem is to utilize a Signal Detection model to analyze and interpret the data in order to determine how consistently the respondent groups have identified

Table 20

Distribution of Signal-Noise and Noise Inventory Items by
Categories of Inventory Items as Determined by the
Regional Mental Health Consultants

Inventory Category	Number of		Total Items
	Signal Items	Noise Items	
1. Personal Needs	4	6	10
2. Mental Health Needs	15	15	30
3. Support Systems	6	6	12
4. Sexuality	4	5	9
5. Substance Abuse	12	5	17
6. Mental Health Problems	11	11	22
TOTAL	48	52	100

specific mental health needs and problems.

The Means of Obtaining the Data

In September, 1980, the completed inventory was administered to 16 high school students at Clemente High School, Chicago, Illinois. The students have been identified by the school administration as a high-risk population and have been placed in a special program at the high school. Many of the students were familiar with Job Corps having had brothers or sisters who were in Job Corps or the students themselves were considering application to Job Corps. The purpose of administering the completed inventory to the Clemente High School students was to again further test the instrument for readability and to utilize these students as a control group for the corpsmembers who would be taking the test. The data from the Clemente students are reported as the control group in the discussion of the results for the Cincinnati Center.

In October, 1980, the completed inventory was administered to 60 corpsmembers and 33 staff members at the Cincinnati Job Corps Center.

Screening of the Inventories

Each inventory was screened to ensure that only those inventories which had been properly completed would be analyzed. Of the 34 staff members returning the inventory, one (1) was incomplete and not used in the analysis. Of the 75 corpsmembers who returned inventories, 15 inventories were not used. Thus, 60 corpsmember inventories were analyzed. Of the control group of 16 Clemente High School students, all were properly completed and analyzed.

A copy of the final inventory can be found in Appendix .

RESULTS

Assumptions of Signal Detection Model Not Satisfied

In plotting the ROC curves for various respondent groups to different categories of items, it becomes obvious that a major assumption of the Signal Detection model was not met. The slopes of the ROC curves did not equal 1 indicative that the variances of the Signal and Noise distributions were not equal. To compensate this this d'_e was calculated. d'_e is calculated by using the Hit Rates and False Alarm Rates at the point where the ROC curve crosses the minor diagonal on the double probability paper.¹ Even though one of the assumptions of the model was not met, both d' and d'_e will be reported.

Results for Entire Inventory

Initially, the results for each group of respondents were determined for the entire inventory as a whole. Results were calculated for the Mental Health Consultants, Center Staff, Corpsmembers, and Control Group of Clemente High School students.

For the entire inventory, the Mental Health Consultants' responses resulted in a d' of .76 and a d'_e of .88. The Hit Rate (HR) was .89 while the False Alarm Rate (FAR) was .68. Response Bias was .53 indicative of the adoption of a lax criterion or bias toward a "Yes" response (Yes, definitely a Need/Problem). Preference was .79 again indicative of a bias toward a "Yes" response while overall accuracy

¹For a more detailed discussion of d'_e and its relationship to d' refer to Swets and Green (1964).

was .61.

Staff members' responses to the entire inventory resulted in a d' of .29 and a d_e' of .36. Staff members had a HR of .87 and a FAR of .80. Response bias was .76 indicative of a lax criterion or a criterion favoring a "Yes" response. Preference was .84 indicating a strong bias to "Yes" responses while overall accuracy was .54 or at the chance level.

Corpsmembers' responses to the entire inventory resulted in a d' of .20 and a d_e' of .20. The HR was .73 while the FAR was .66. Response bias was .90 indicating a slight bias toward a lax criterion favoring "Yes" responses while Preference was .70 indicative of a bias toward "Yes" responses. Accuracy was near the chance level at .54.

The control groups' responses to the entire inventory resulted in a d' of .10 and a d_e' of .08. The HR was .76 while the FAR was .73. Response bias was .94 indicating a slight bias toward "Yes" responses. Preference was .75 indicative of a strong bias toward "Yes" responses while accuracy was near the chance level at .52.

Table 21 summarizes the results of the different groups to the entire inventory. ROC curves for this data can be found in Figures 1-4.

Category 1, Personal Needs. Inventory items belonging to Category 1 consisted of those personal needs such as privacy, length of stay in Job Corps, etc. (Refer to Table 14 for a list of Category 1 needs.)

Mental Health Consultants' responses to category 1 items resulted in a d' of .92 and a d_e' of 1.10. The HR was .90 and the FAR was .64.

Table 21
 Analysis of Entire Inventory As-a-Whole

RESPONDENT GROUP	ENTIRE INVENTORY						
	d'	d' _e	HR	FAR	β	Pref	Acc
Mental Health Consultants	.76	.88	.89	.68	.53	.79	.61
Staff Members	.29	.36	.87	.80	.76	.84	.54
Corpsmembers	.20	.20	.73	.66	.90	.70	.54
Control Group	.10	.08	.76	.73	.94	.75	.52

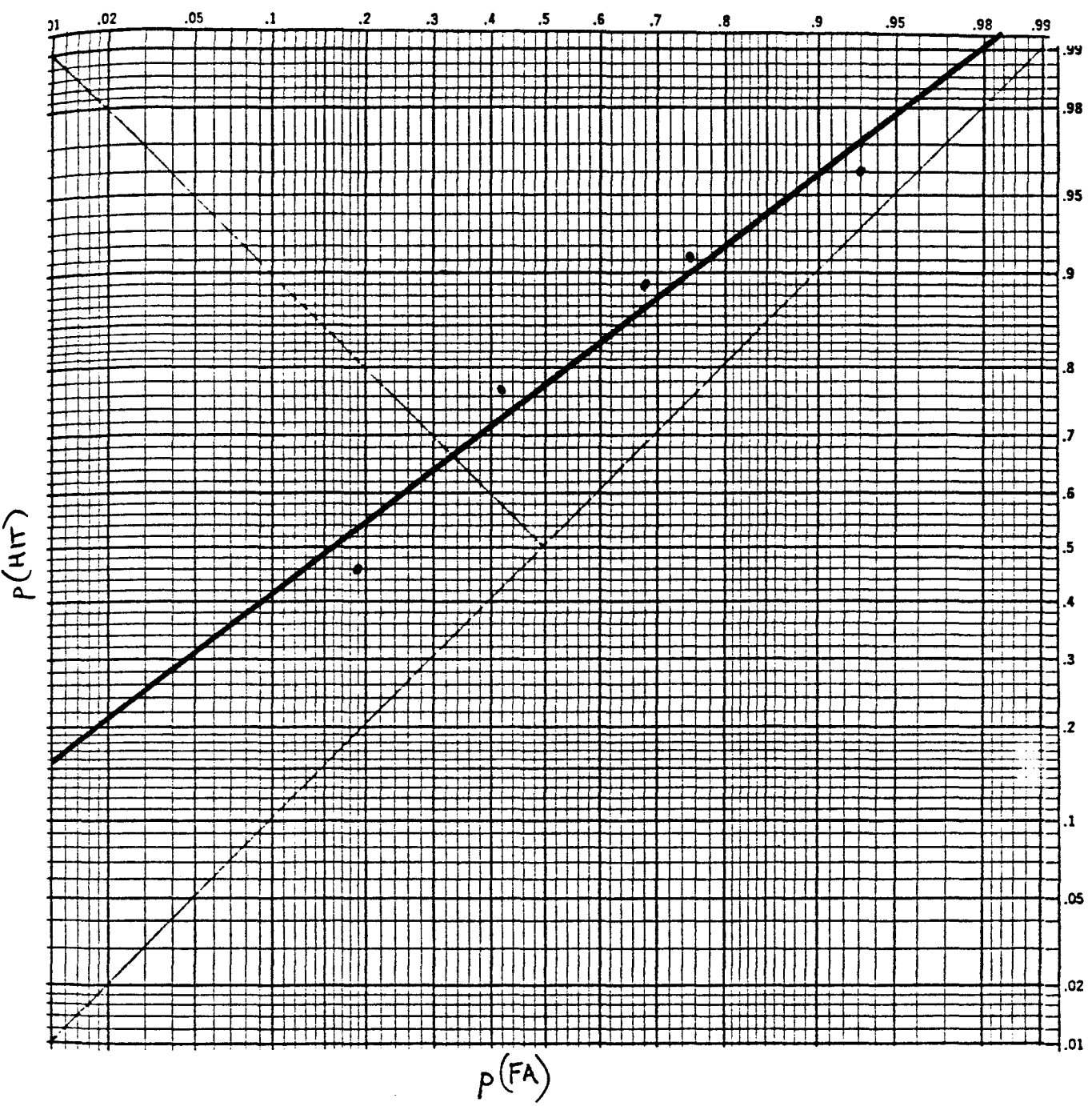


Figure 1. ROC Curves for the Mental Health Consultants for the Entire Inventory.

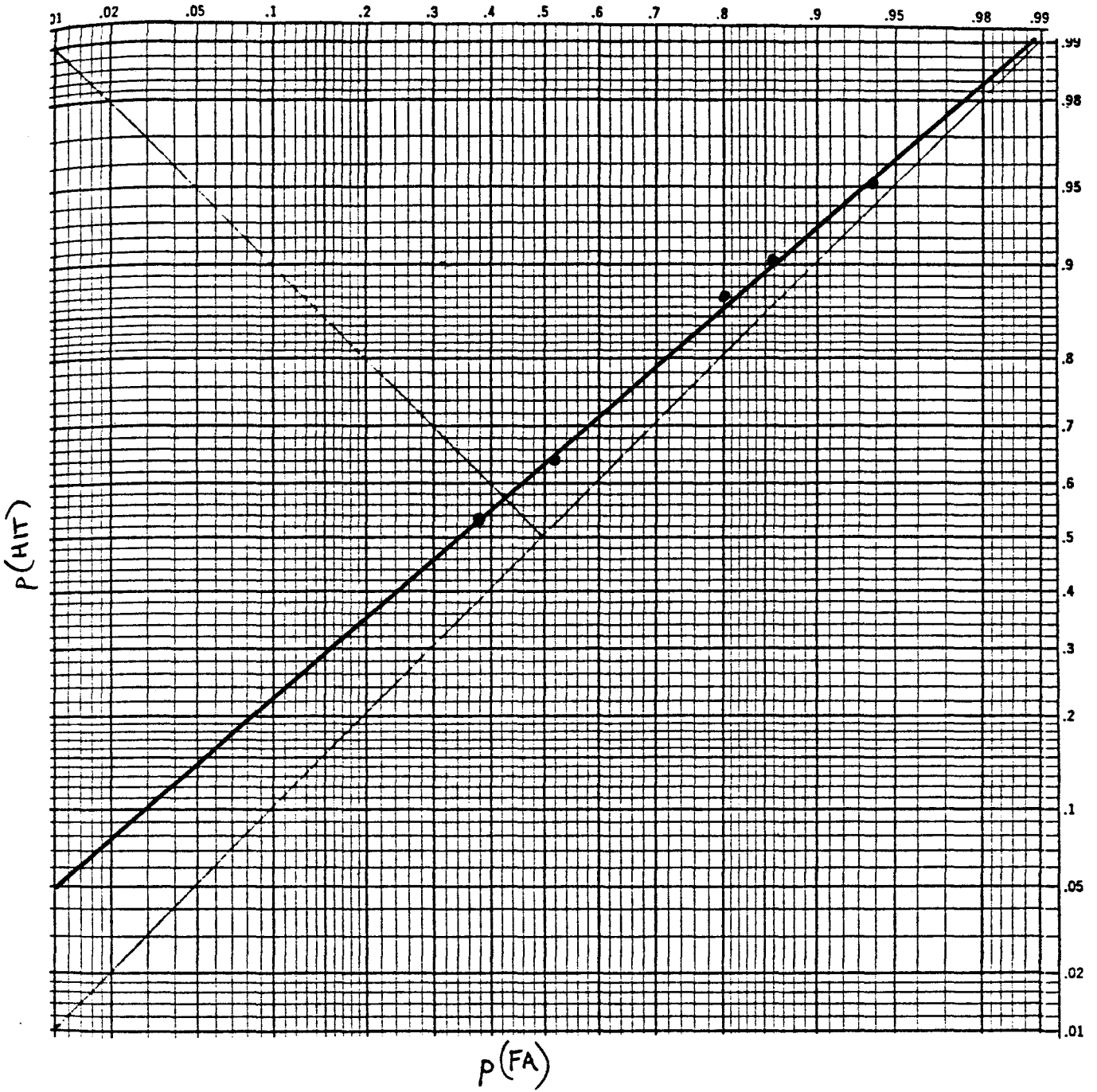


Figure 2. ROC Curves for Center Staff for the Entire Inventory.

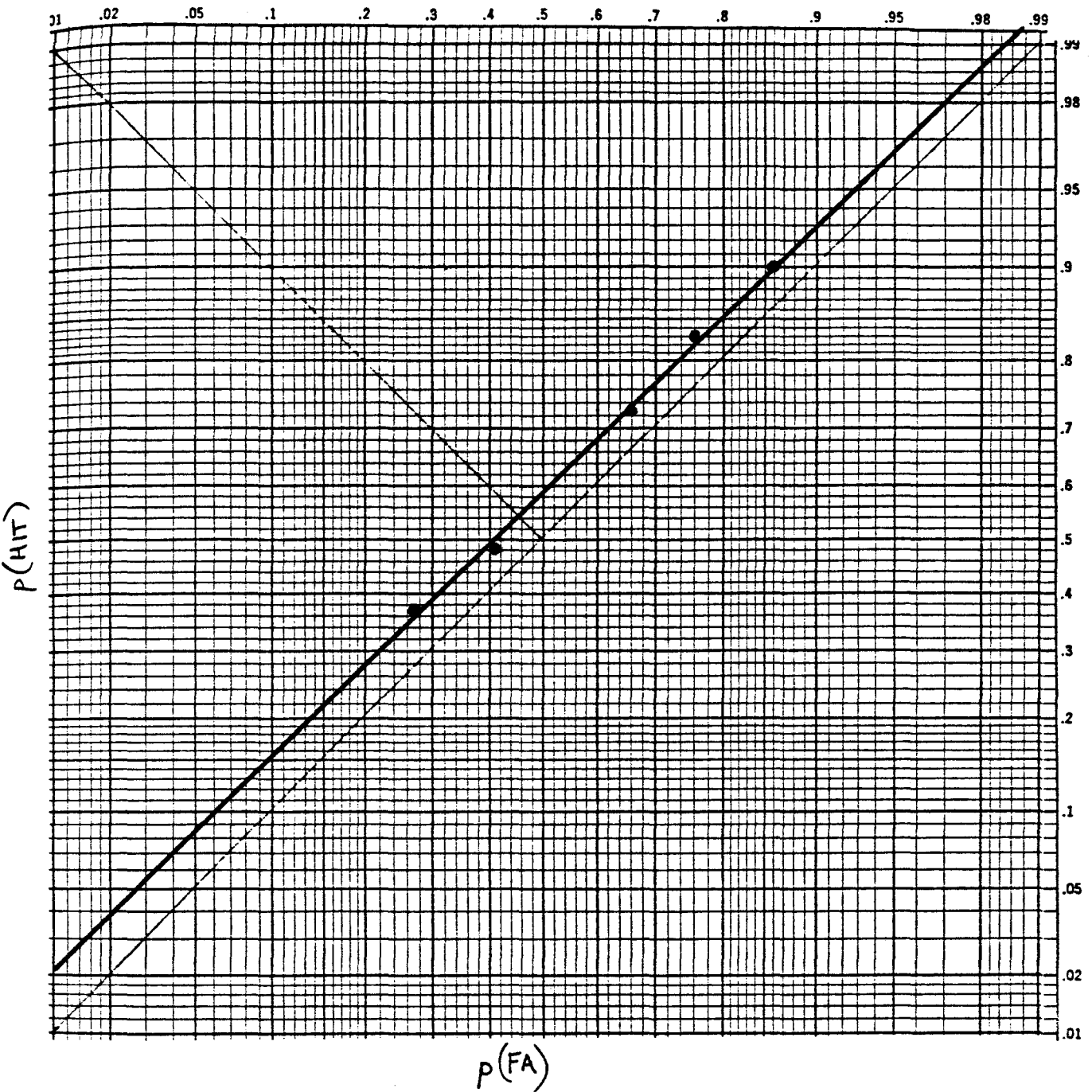


Figure 3. ROC Curves for Corpsmembers for the Entire Inventory.

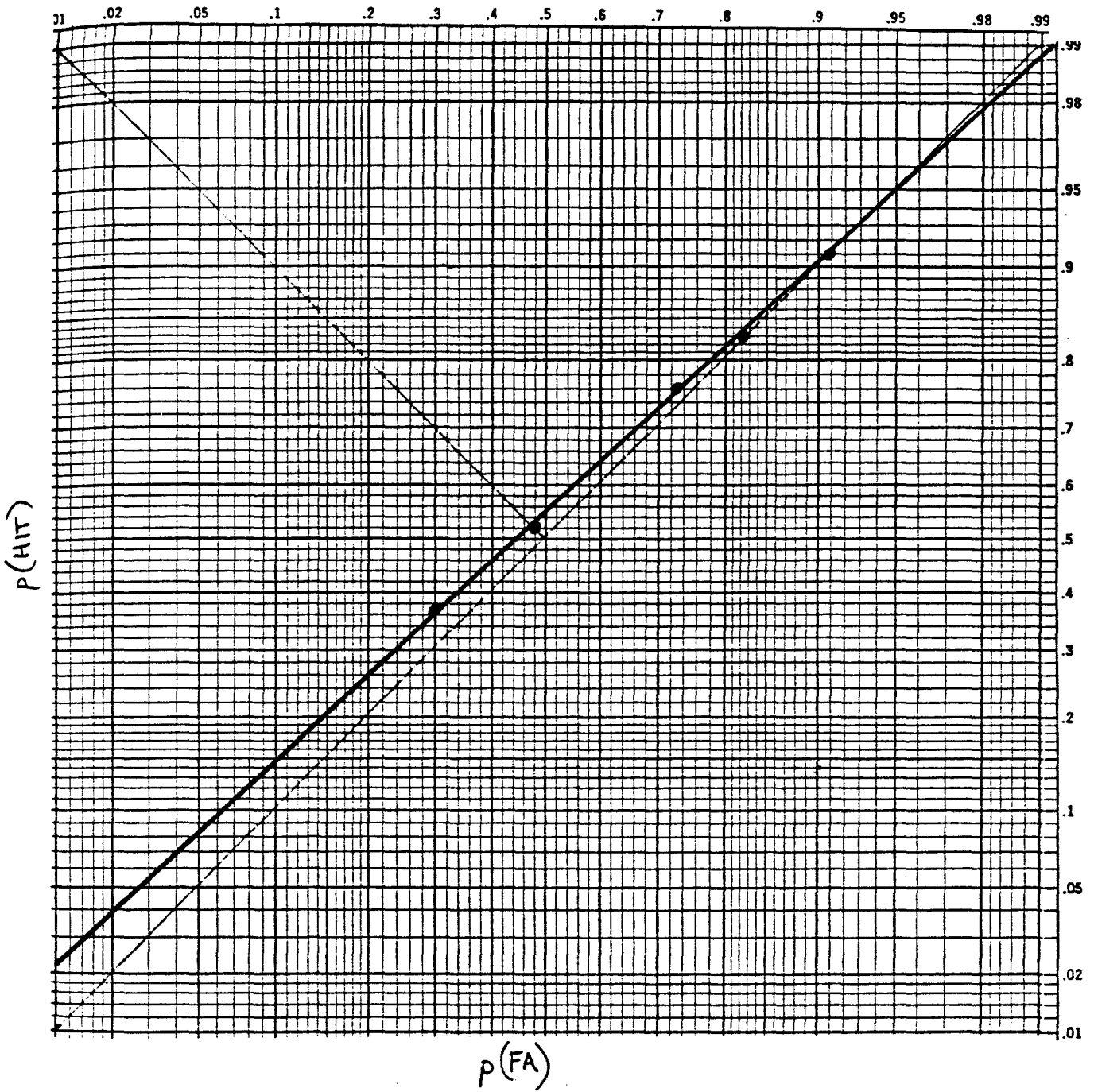


Figure 4. ROC Curves for the Control Group for the Entire Inventory.

Response bias was .47 indicative of a lax criterion favoring "Yes" responses while Preference was .77 indicating a strong bias toward "Yes" responses. Accuracy was .63.

Staff members' responses to category 1 items resulted in a d' of 1.06 and a d'_e of 1.01. The HR was .91 and the FAR was .61. Response bias was .42 again indicating the adoption of a lax criterion favoring a "Yes" response. Preference, at .76, also showed a strong bias for a "Yes" response. Accuracy was .65.

Corpsmembers' responses to category 1 items resulted in a d' of .58 and a d'_e of .61. The HR was .81 while the FAR was .62. Response bias, at .71, and Preference, at .72, both indicated a bias toward "Yes" responses. Accuracy was .60.

The control groups' responses to category 1 items resulted in a d' of .40 and a d'_e of .20. The HR was .86 while the FAR was .75. Response bias was .70 indicating a lax criterion and a bias toward "Yes" responses while Preference was .81 indicating a strong bias toward "Yes" responses. Accuracy was .56.

Table 22 summarizes the data for category 1 items. ROC curves may be found in Figures 5-8.

Category 2, Mental Health Needs. Category 2 items refer to mental health needs such as problem solving, goal-achievement, etc. (Refer to Table 15 for a list of Category 2 items.)

The Mental Health Consultants' responses to category 2 items resulted in a d' of .79 and a d'_e of 1.01. The HR was .89 while the FAR was .67. Response bias, at .52, and Preference, at .78, both indicated a strong bias toward "Yes" responses. Accuracy was .61.

Table 22

Analysis of Category 1 Items, Personal Needs

RESPONDENT GROUP	CATEGORY 1, PERSONAL NEEDS						
	d'	d' _e	HR	FAR	β	Pref	Acc
Mental Health Consultants	.92	1.10	.90	.64	.47	.77	.63
Staff Members	1.06	1.01	.91	.61	.42	.76	.65
Corpsmembers	.58	.61	.81	.62	.71	.72	.60
Control Group	.40	.20	.86	.75	.70	.81	.56

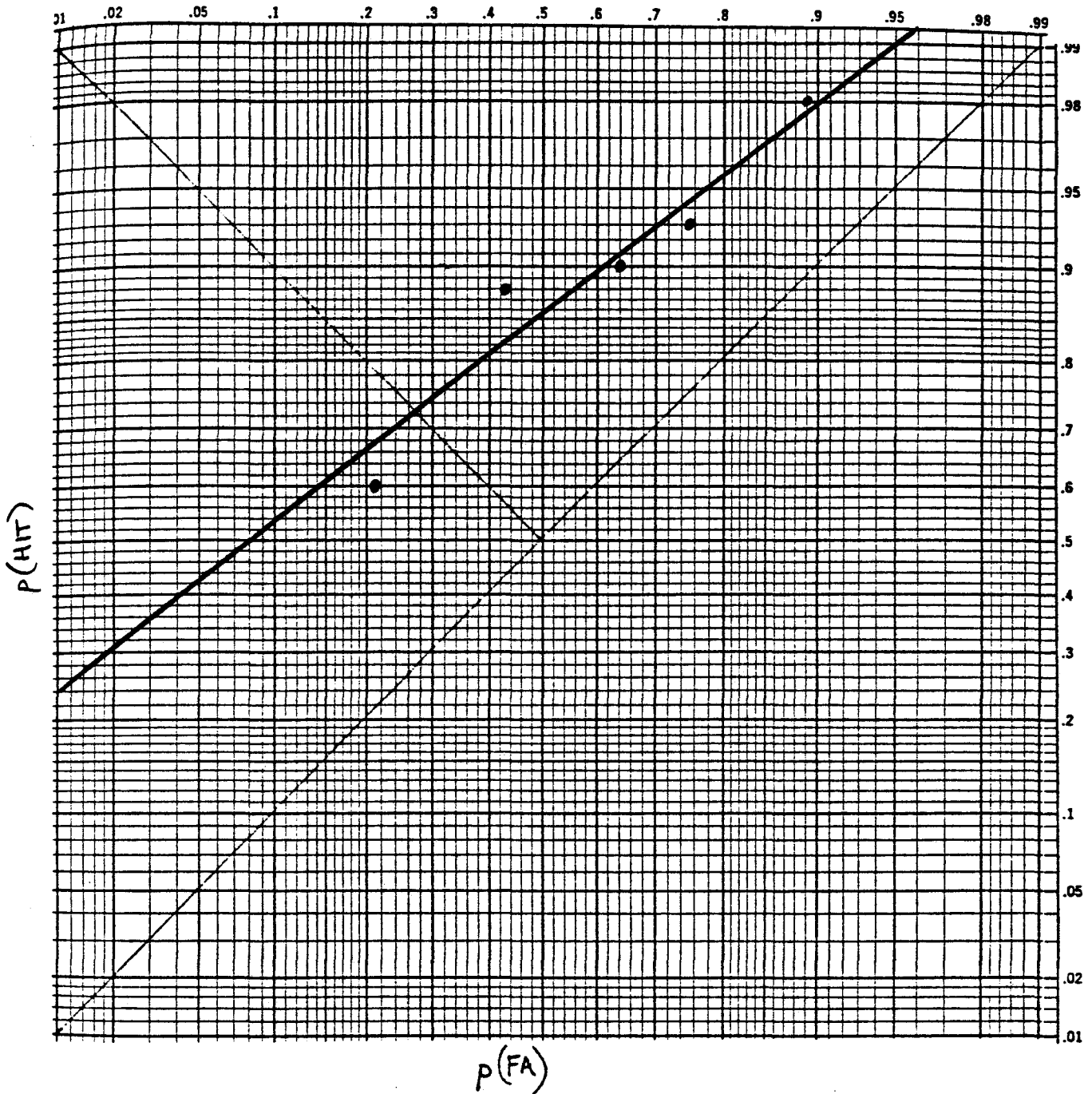


Figure 5. ROC Curves for the Mental Health Consultants for Category 1, Personal Needs.

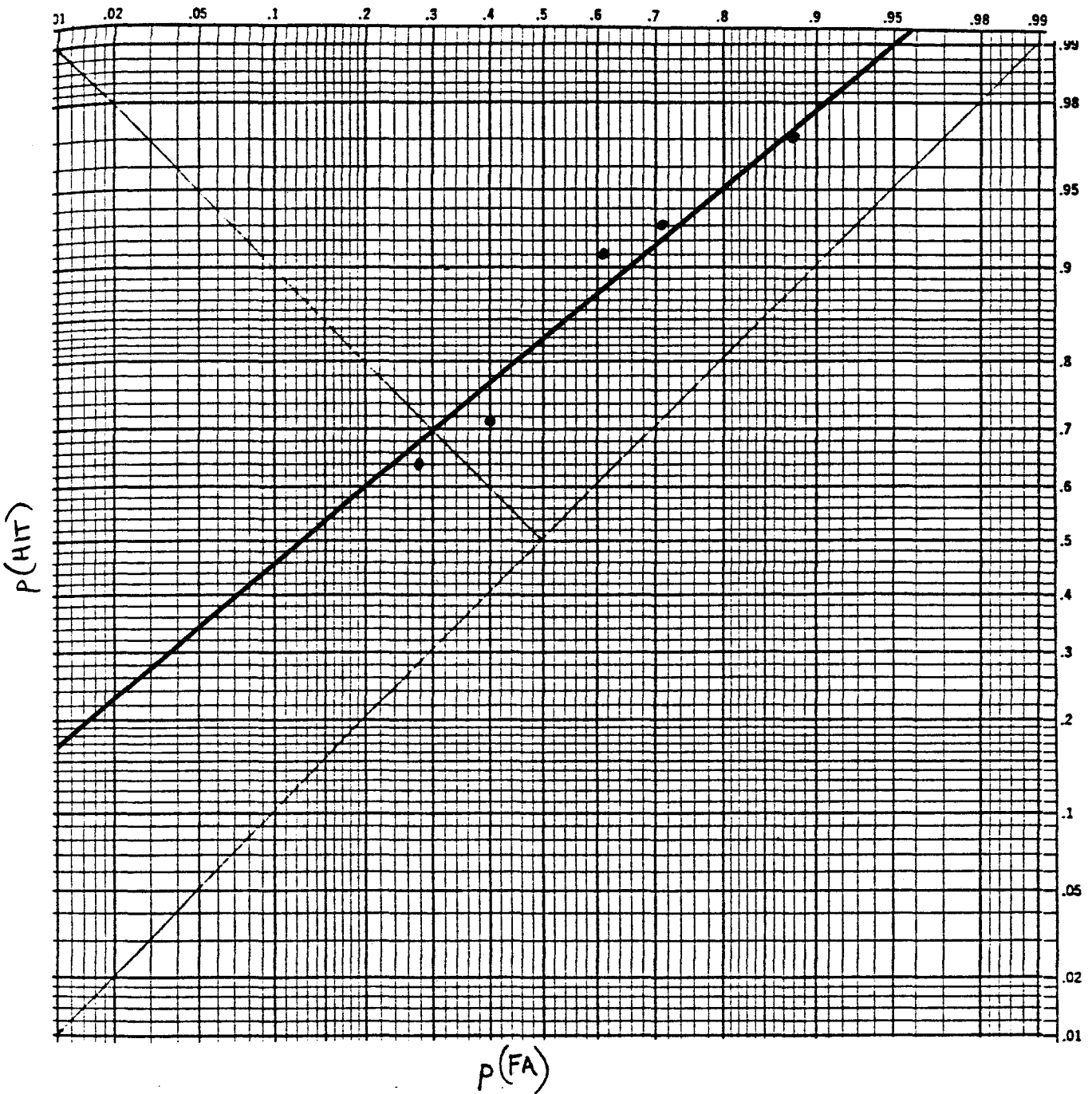


Figure 6. ROC Curves for Center Staff for Category 1,
Personal Needs.

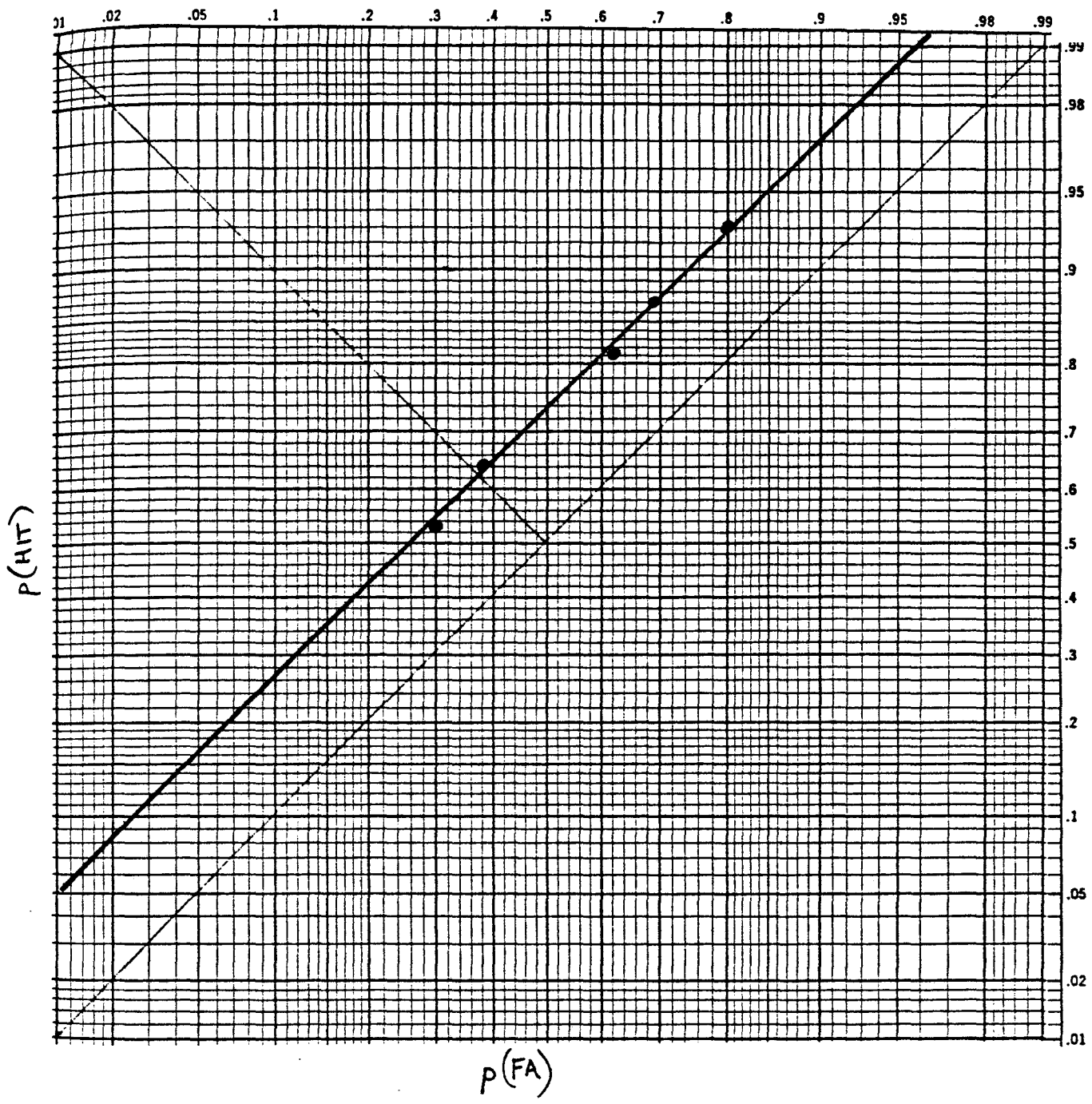


Figure 7. ROC Curves for Corpsmembers for Category 1, Personal Needs.

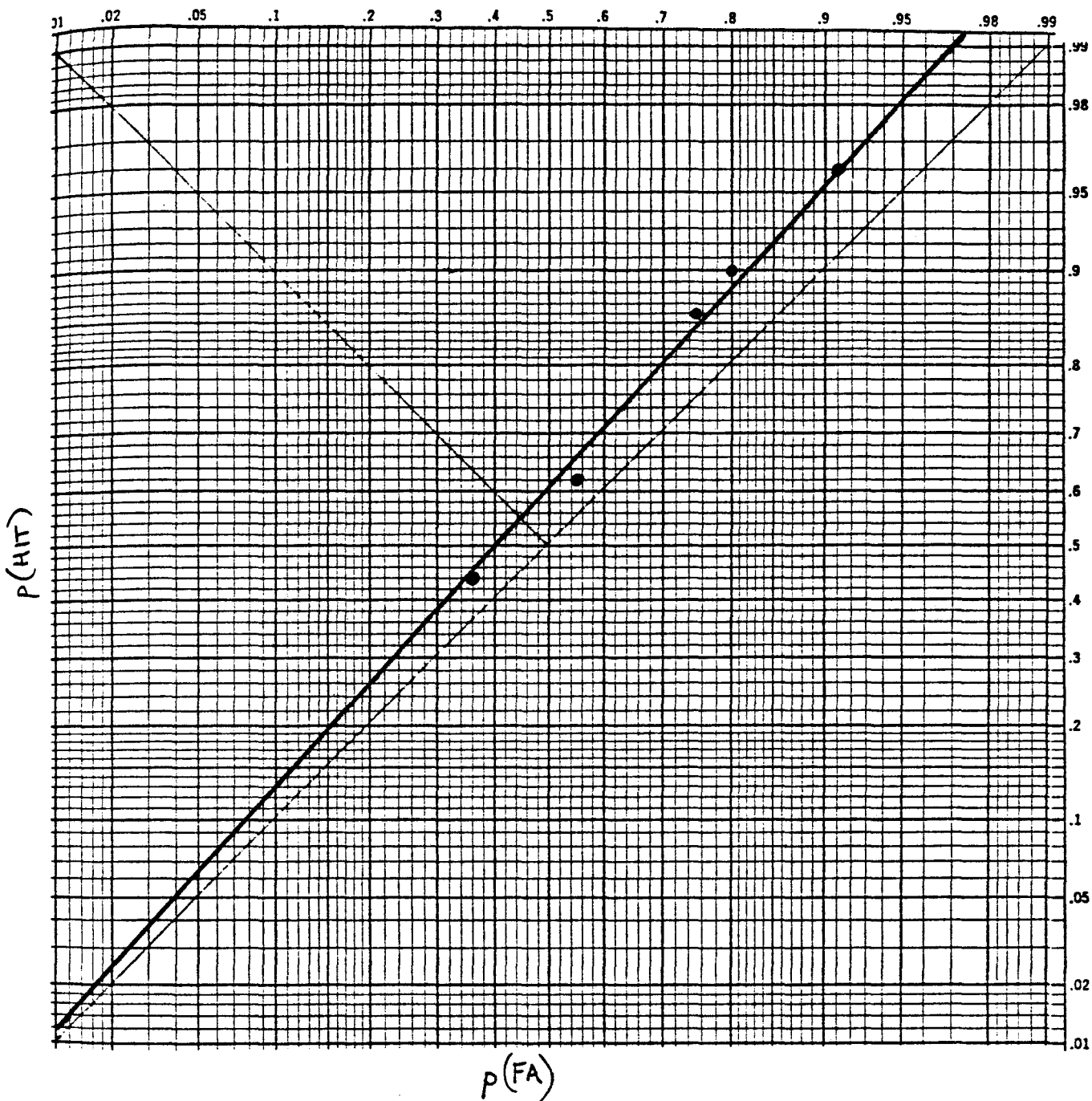


Figure 8. ROC Curves for the Control Group for Category 1,
Personal Needs.

Staff members' responses to category 2 items resulted in a d' of .39 and a d'_e of .48. The HR was .89 and the FAR was .80. Response bias was .67 indicative of the adoption of a lax criterion favoring "Yes" responses while Preference, at .85, showed a strong bias to "Yes" responses. Accuracy fell to near the chance level at .55.

Corpsmembers' responses to category 2 items resulted in a d' of .25 and a d'_e of .30. The HR was .79 while the FAR was .71. Response bias, at .86, showed the adoption of a lax criterion while Preference was .75 indicating a strong bias toward "Yes" answers. Accuracy, at .54, was near the chance level.

The control groups' responses to category 2 items resulted in a d' of .02 and a d'_e of .20. The HR was .80 while the FAR was .78. Response bias was .95 indicating only a slight bias toward "Yes" responses while Preference was .79 indicating a much stronger bias toward "Yes" answers. Accuracy was virtually chance at .51.

Table 23 summarizes the data for category 2 items. ROC curves may be found in Figures 9-12.

Category 3, Support Systems. Category 3 inventory items involved support systems for the corpsmember including peers and adult support. (Refer to Table 16 for a list of items in category 3).

The Mental Health Consultants' responses to category 3 items resulted in a d' of 1.48 and a d'_e of .66. The HR was .99 while the FAR was .80. Response bias, at .09, indicated an overwhelmingly strong bias toward "Yes" responses while Preference at .89 also indicated this same bias. Accuracy was .60. Staff members' responses to category 3 items resulted in a d' of -.11 and a d'_e of -.05. The

Table 23

Analysis of Category 2 Items, Mental Health Needs

RESPONDENT GROUP	CATEGORY 2, MENTAL HEALTH NEEDS						
	d'	d _g	HR	FAR	β	Pref	Acc
Mental Health Consultants	.79	1.01	.89	.67	.52	.78	.61
Staff Members	.39	.48	.89	.80	.67	.85	.55
Corpsmembers	.25	.30	.79	.71	.86	.75	.54
Control Group	.02	.20	.80	.78	.95	.79	.51

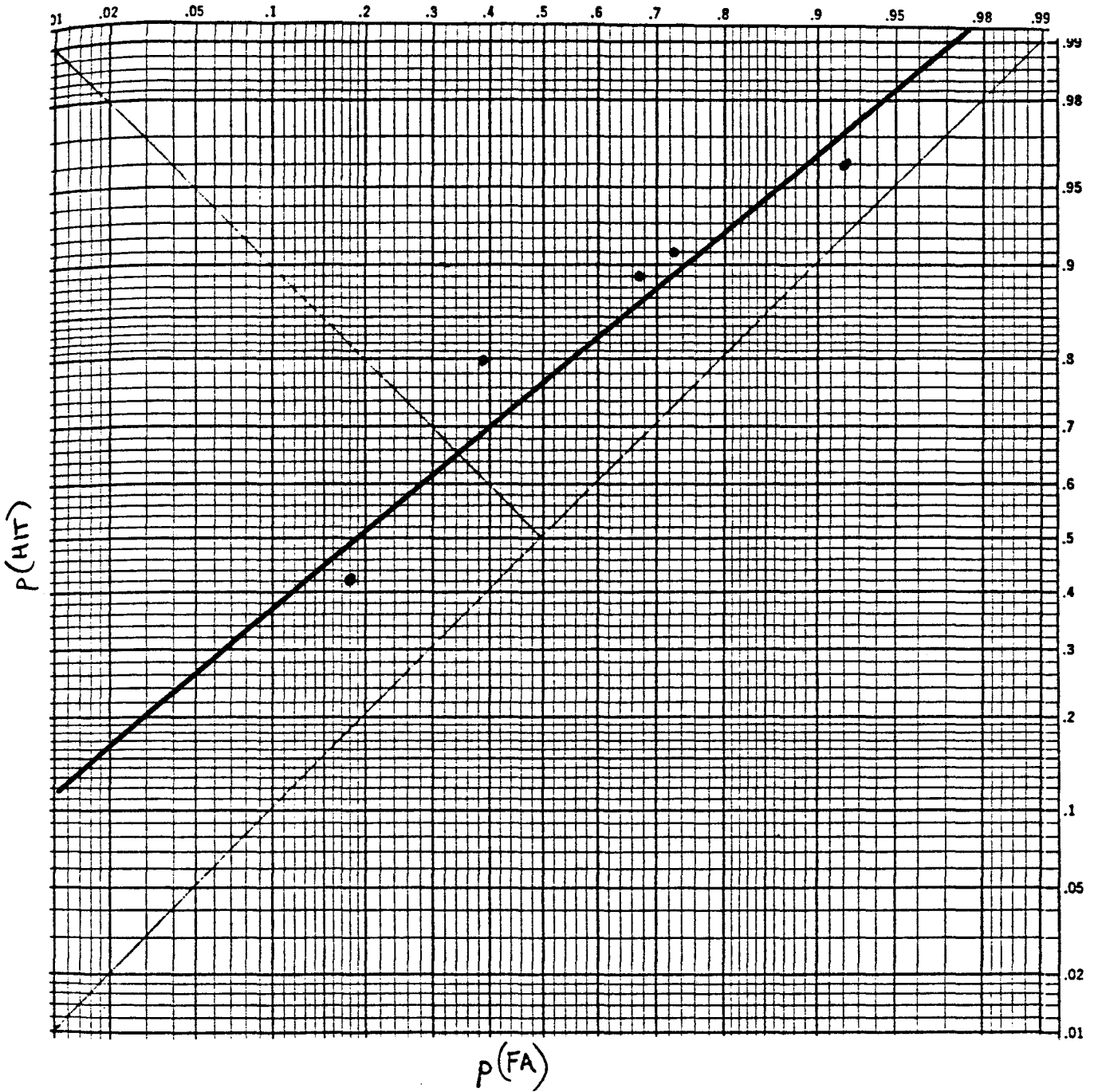


Figure 9. ROC Curves for the Mental Health Consultants for Category 2, Mental Health Needs.

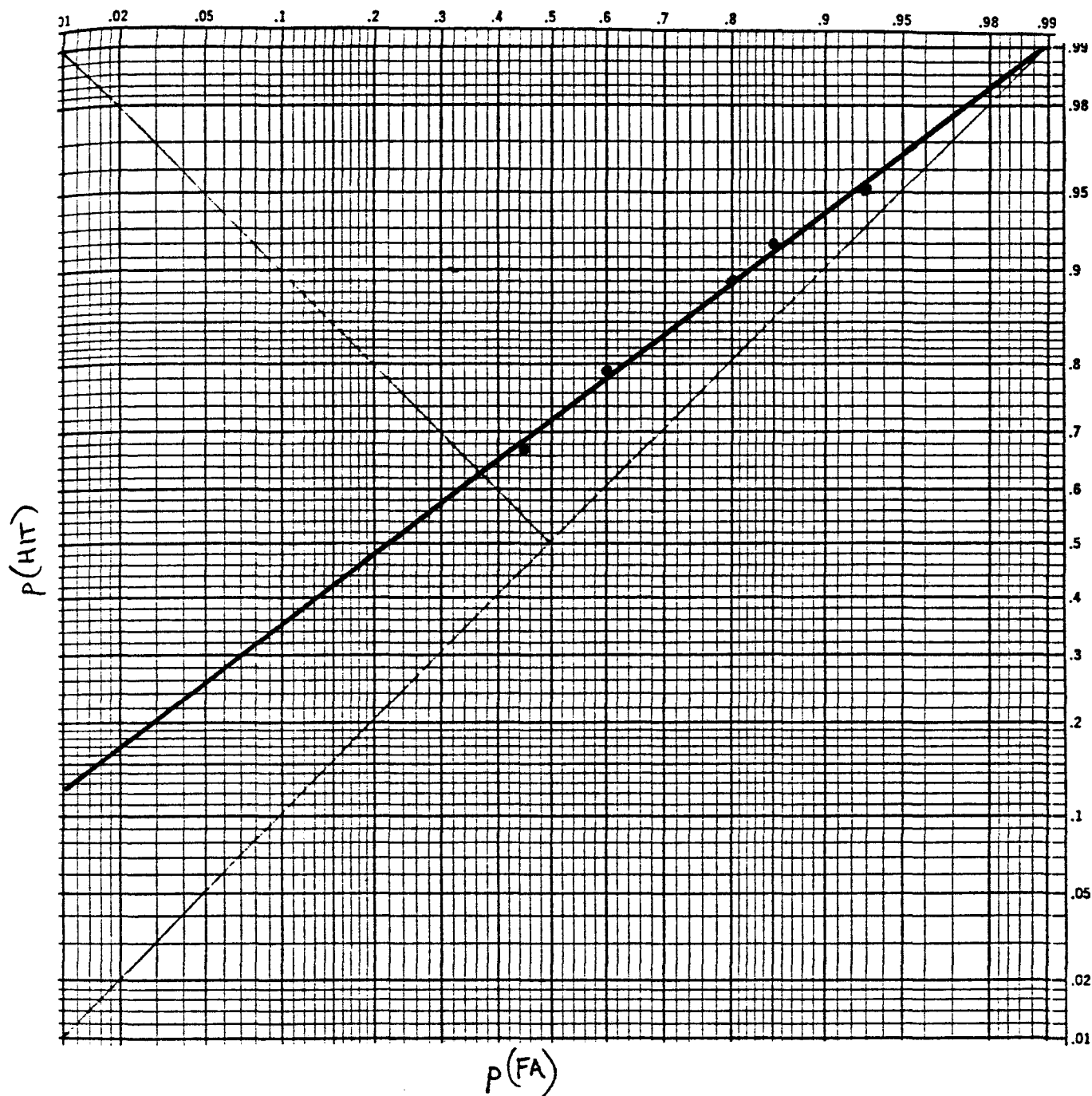


Figure 10. ROC Curves for Center Staff for Category 2, Mental Health Needs.

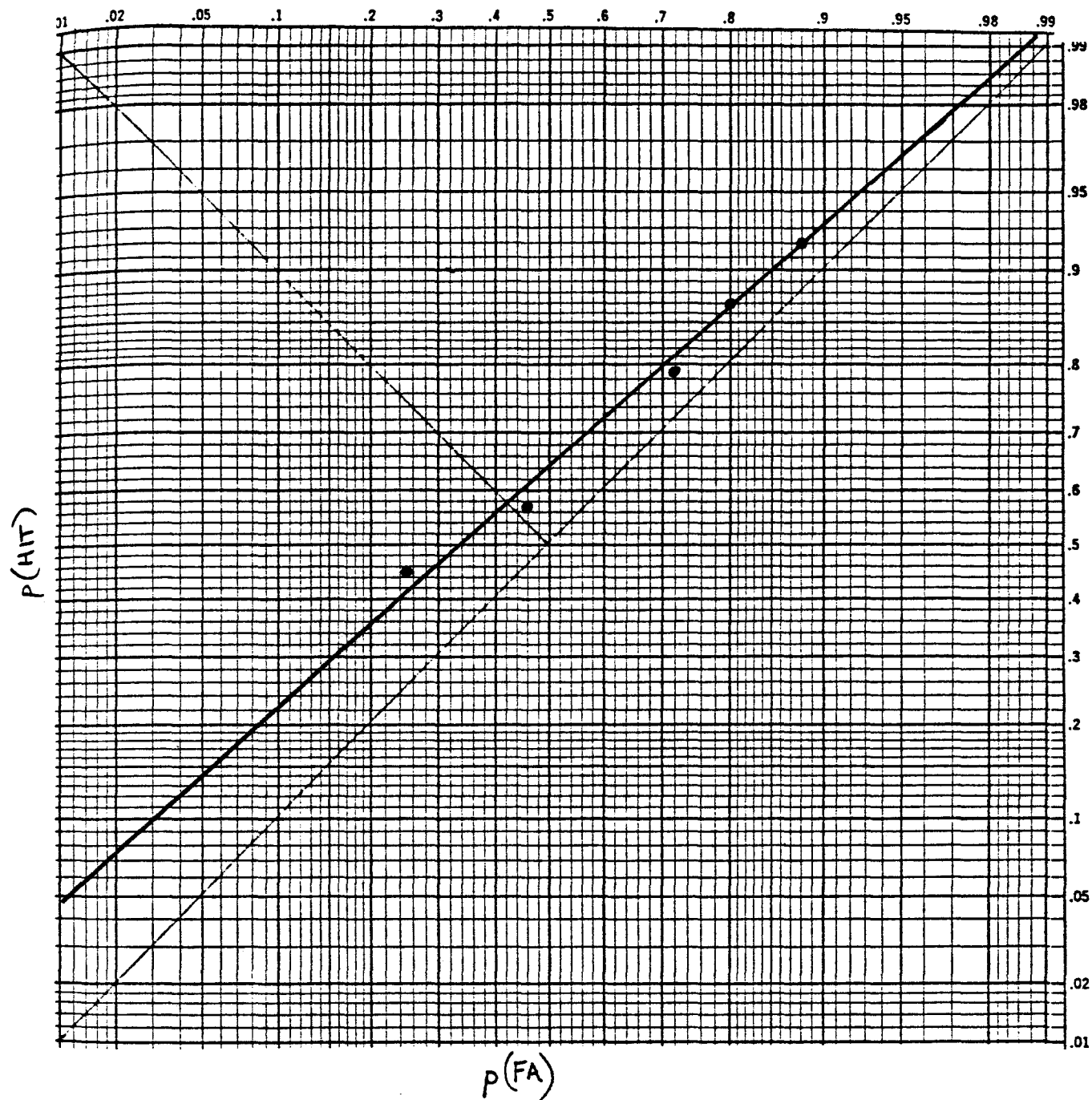


Figure 11. ROC Curves for the Corpsmembers for Category 2,
Mental Health Needs.

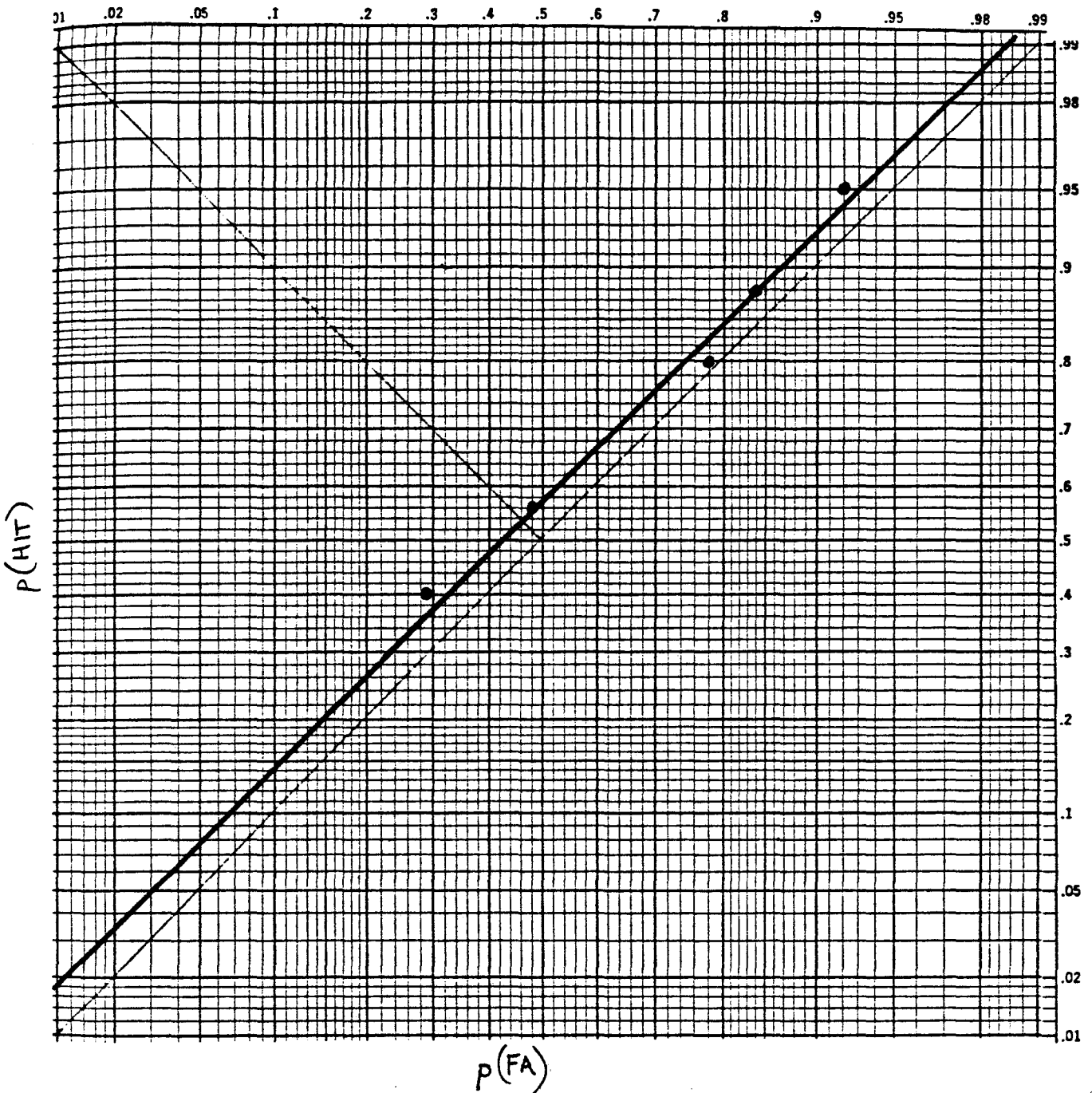


Figure 12. ROC Curves for the Control Group for Category 2,
Mental Health Needs.

HR was .81 while the FAR was .84. Response bias was 1.12 indicating the adoption of a strict criterion, or a criterion biased toward a "No" response (No, definitely not a need/problem). This represents a criterion shift for the staff from their criterion in the first two categories of inventory items. Preference, with a score of .83, still indicated a strong bias toward "Yes" answers. Accuracy dropped below the chance level to .49.

The corpsmembers' responses to category 3 items resulted in a d' of .22 and a d'_e of .10. The HR was .72 while the FAR was .64. Response bias, at .90, indicated the adoption of a lax criterion which only slightly favored a "Yes" response. Preference was .68 and indicative of a bias toward "Yes" answers. Accuracy was near chance, at .54.

The control groups' responses to category 3 items resulted in a d' of -.20 and a d'_e of -.05. The HR was .69 and the FAR was .76. Response bias was 1.13 indicative of a strict criterion favoring "No" responses and was a criterion shift from previous responses. Preference, however, was .73 indicating a strong bias to "Yes" responses. Accuracy fell below the chance level to .47.

Table 24 summarizes the data for category 3 items. ROC curves can be found in Figures 13-16.

Category 4, Sexuality. Category 4 inventory items involved sexual concerns such as birth control, personal relations, etc. (Refer to Table 17 for the list of items in category 4).

The Mental Health Consultants' responses to category 4 items resulted in a d' of 1.41 and a d'_e of 1.11. The HR was .97 while the

Table 24
 Analysis of Category 3 Items, Support Systems

RESPONDENT GROUP	CATEGORY 3, SUPPORT SYSTEMS						
	d'	d_e	HR	FAR	β	Pref	Acc
Mental Health Consultants	1.48	.66	.99	.80	.09	.89	.60
Staff Members	-.11	-.05	.81	.84	1.12	.93	.49
Corpsmembers	.22	.10	.72	.64	.90	.68	.54
Control Group	-.20	-.05	.69	.76	1.13	.73	.47

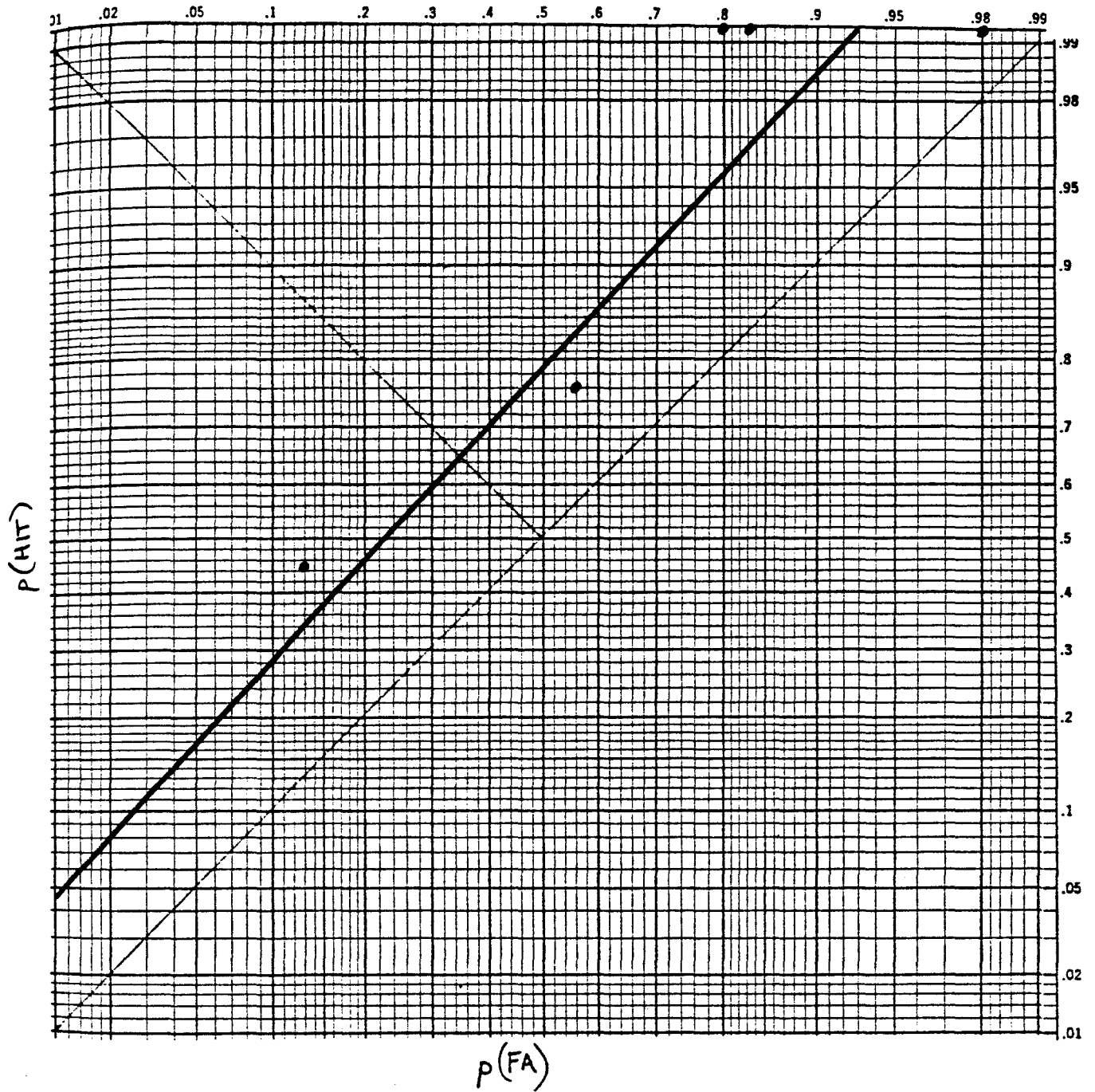


Figure 13. ROC Curves for the Mental Health Consultants for Category 3, Support Systems.

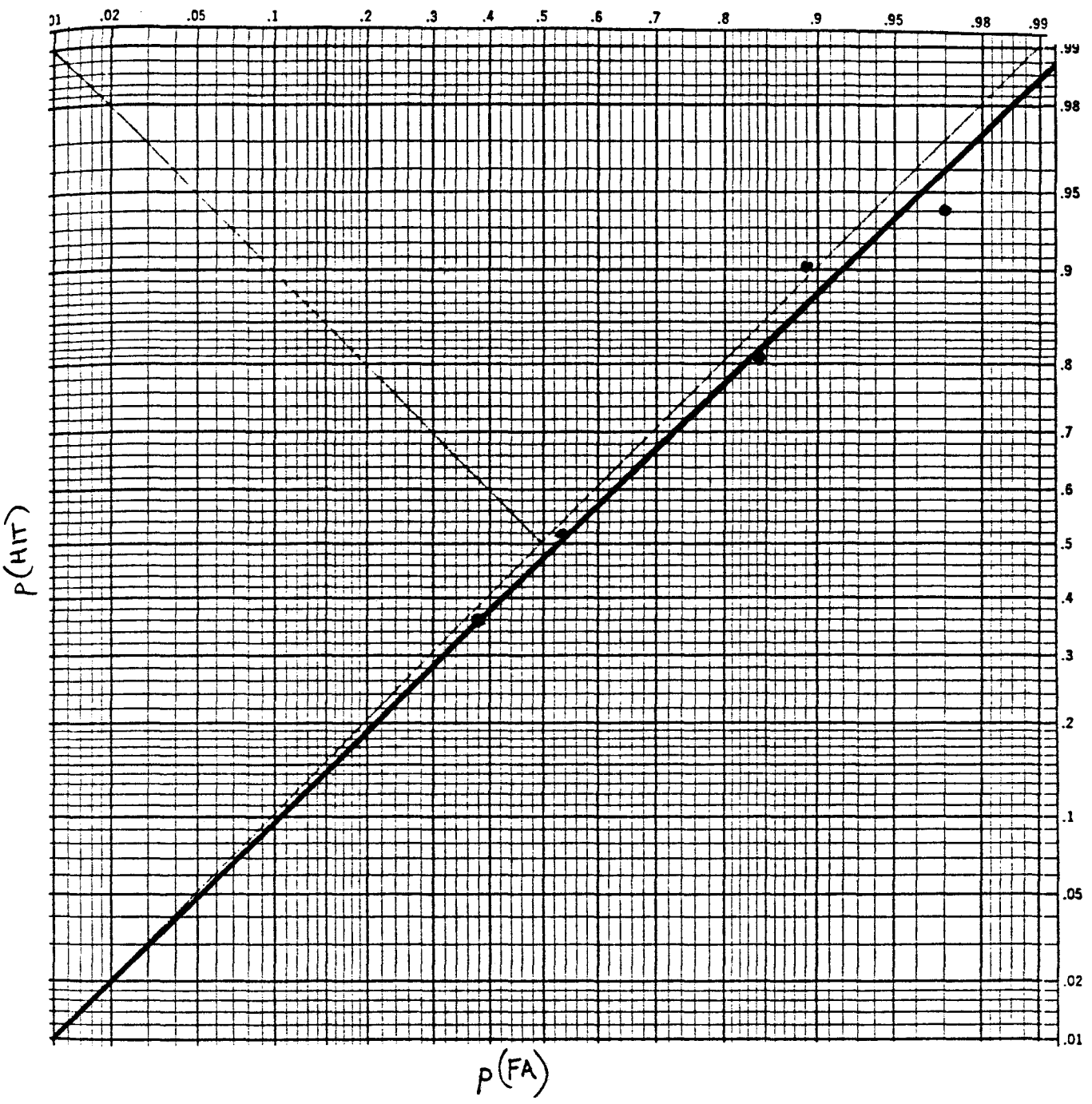


Figure 14. ROC Curves for the Center Staff for Category 3, Support Systems.

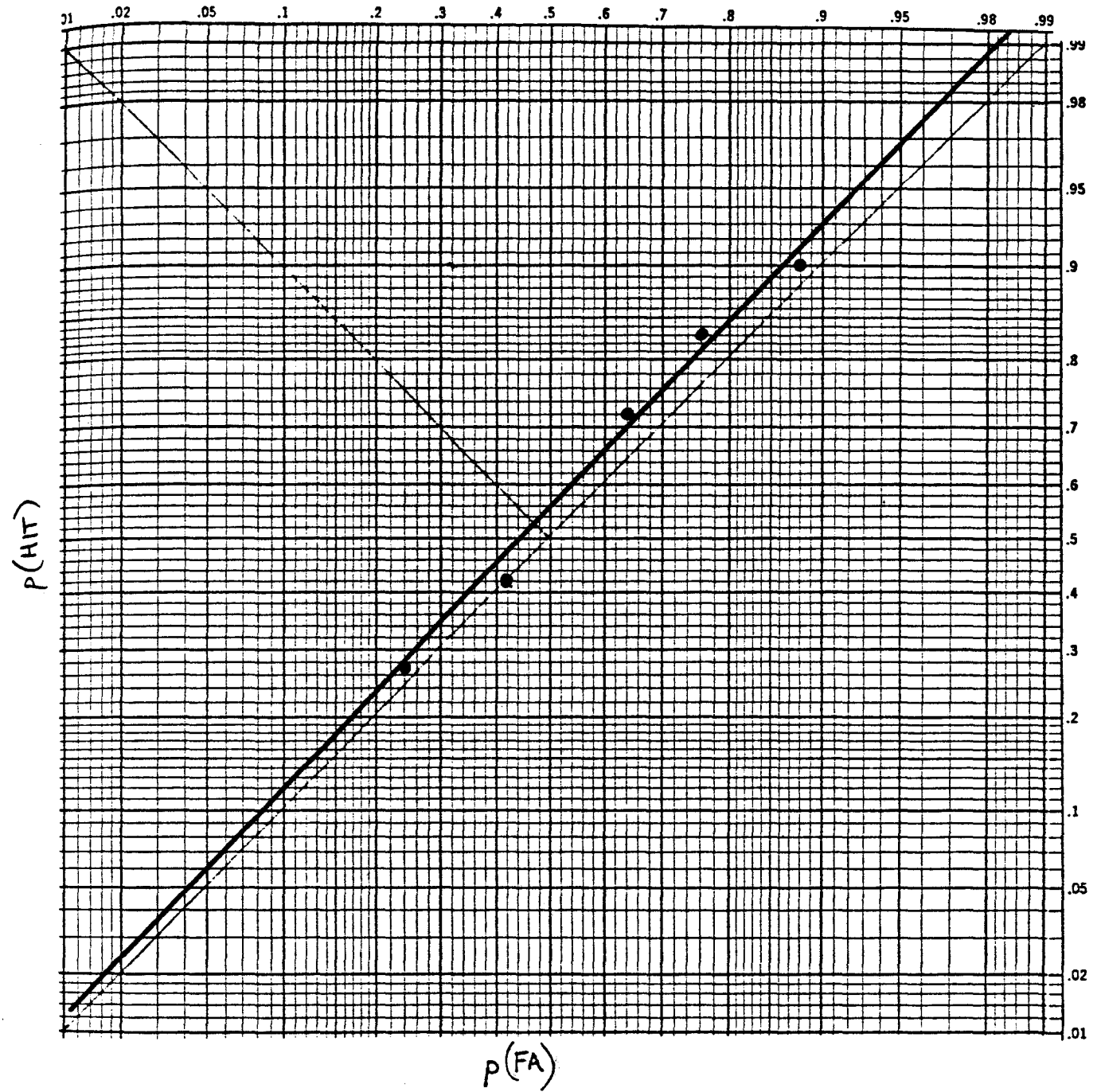


Figure 15. ROC Curves for the Corpsmembers for Category 3,
Support Systems.

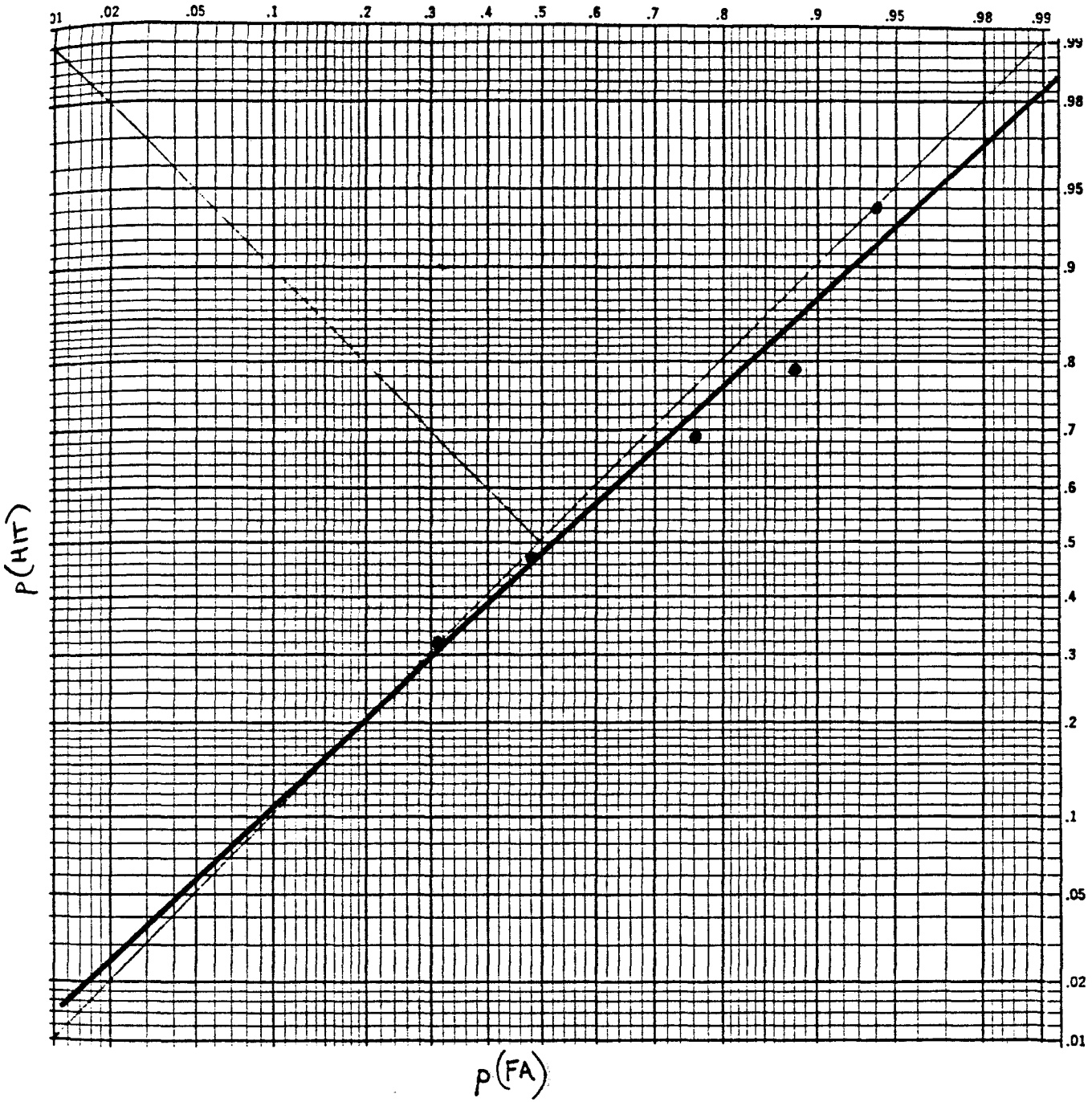


Figure 16. ROC Curves for the Control Group for Category 3, Support Systems.

FAR was .68. Response bias was .19 again indicative of a lax criterion strongly biased to a "Yes" response. Preference, at .83, also showed a strong bias to a "Yes" response. Accuracy was .65.

The staffs' responses to category 4 items resulted in a d' of .59 and a d'_e of .61. The HR was .89 and the FAR was .74. Response bias at .58, is indicative of the adoption of a lax criterion favoring a "Yes" response. Again, this represents a criterion shift from the one adopted for the previous category of items (support systems) back to the original criterion for categories one and two. Preference, at .82 indicates a strong bias for a "Yes" response while accuracy was .57.

The corpsmembers' responses to category 4 items resulted in a d' of -.06 and a d'_e of 0.00. The HR was .71 while the FAR was .73. Response bias, at 1.02, is indicative of the adoption of a strict criterion, or a criterion favoring a "No" response (No, this is not a need/problem). This also represents a criterion shift for the corpsmembers from a lax to a strict criterion or a criterion favoring a "No" response. Preference, at .72, still indicated a bias toward "Yes" answers while accuracy dropped below change to .49.

The responses of the control group resulted in a d' of -.38 and a d'_e of -.10. The HR was .65 while the FAR was .78. Response bias was 1.25 indicating that the control group maintained a strict criterion, biased toward "No" responses. Preference at .44 also indicated a slight bias toward "No" answers. Accuracy was .45, or less than chance.

Table 25 summarizes the data for category 4 items. ROC curves

Table 25
 Analysis of Category 4 Items, Sexuality

RESPONDENT GROUP	CATEGORY 4, SEXUALITY						
	d'	d'_e	HR	FAR	β	Pref	Acc
Mental Health Consultants	1.41	1.11	.97	.68	.19	.83	.65
Staff Members	.59	.61	.89	.74	.58	.82	.57
Corpsmembers	-.06	.00	.71	.73	1.02	.72	.49
Control Group	-.38	-.10	.65	.78	1.25	.44	.45

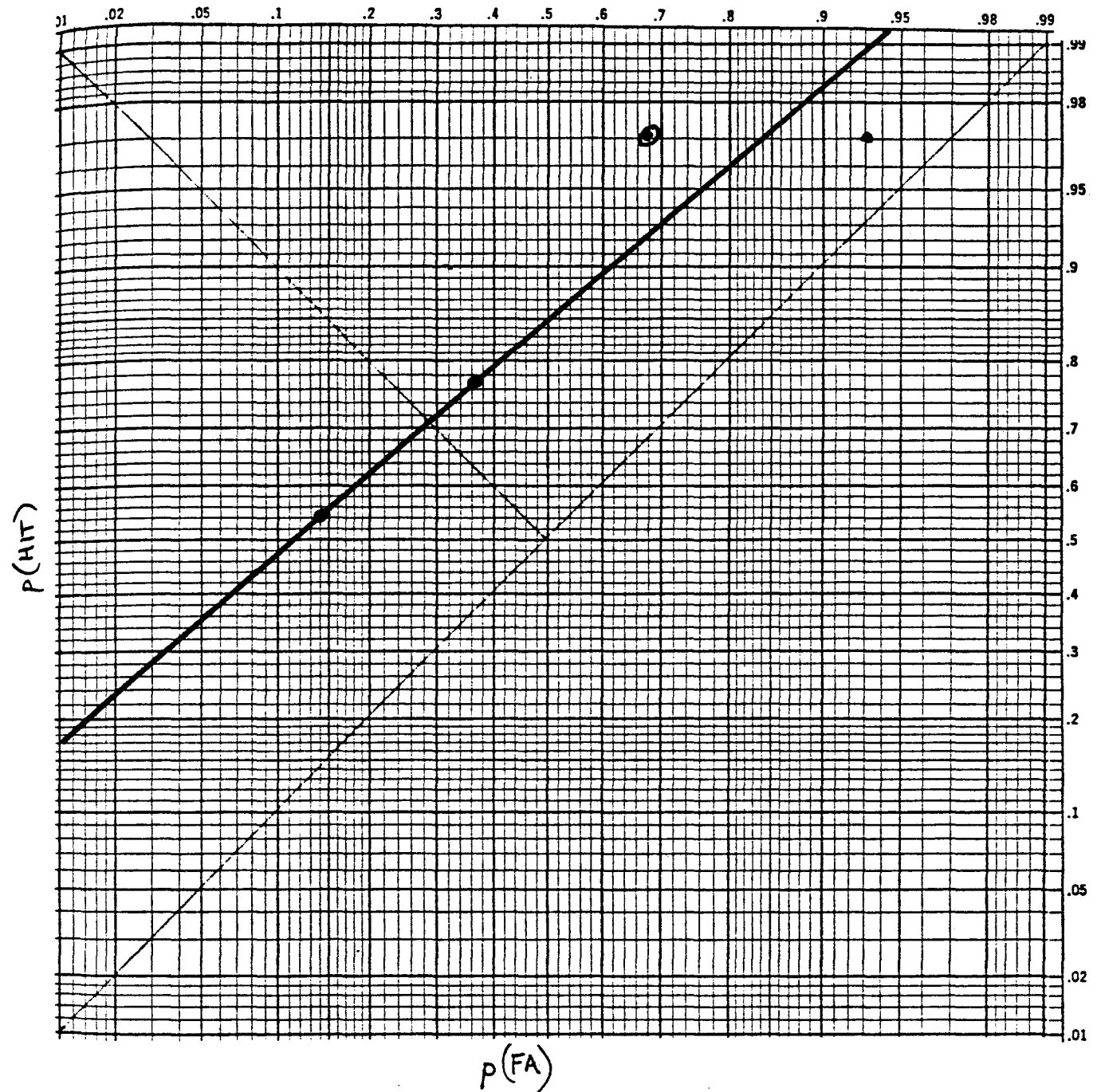


Figure 17. ROC Curves for the Mental Health Consultants for Category 4, Sexuality.

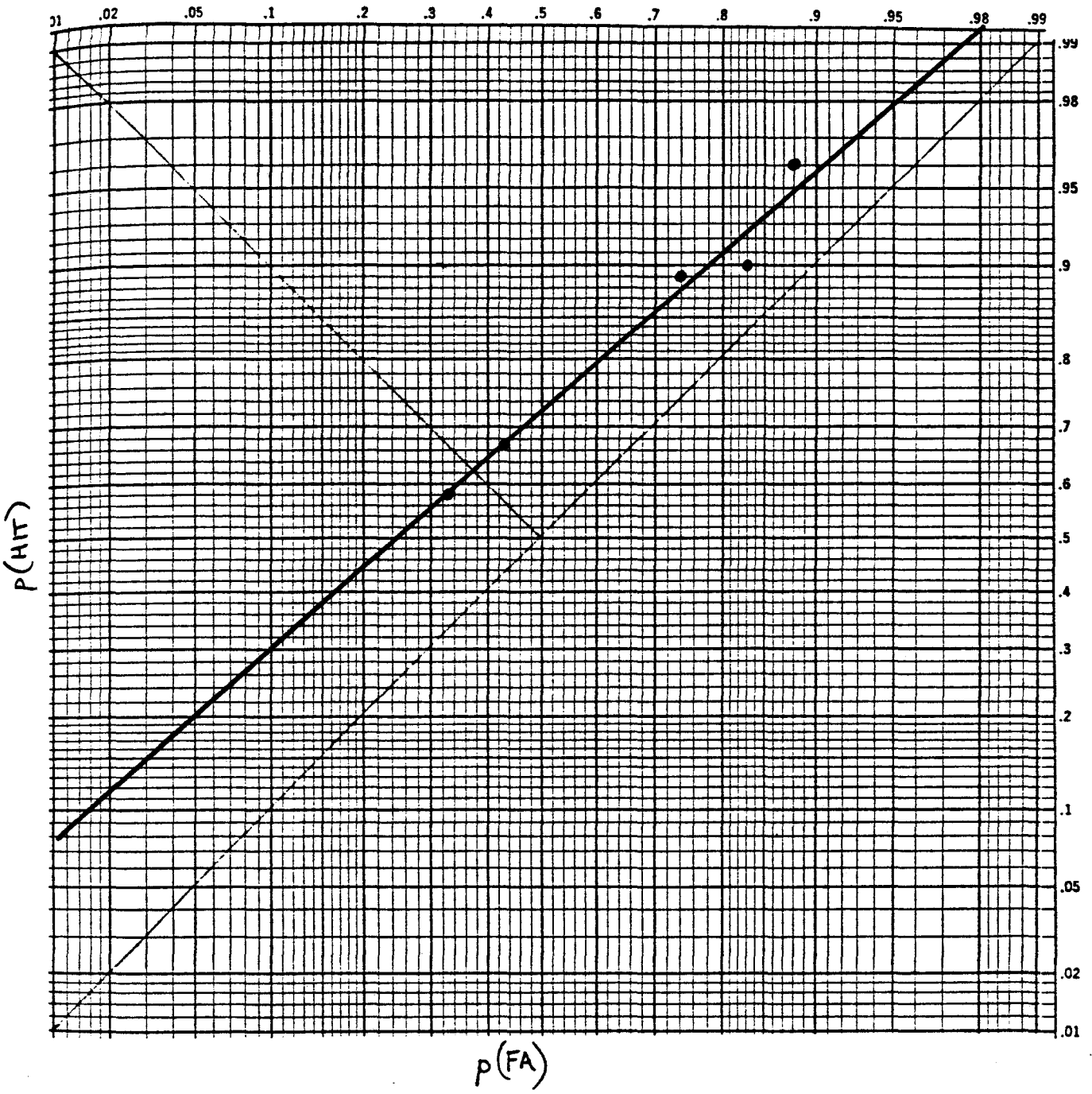


Figure 18. ROC Curves for the Center Staff for Category 4, Sexuality.

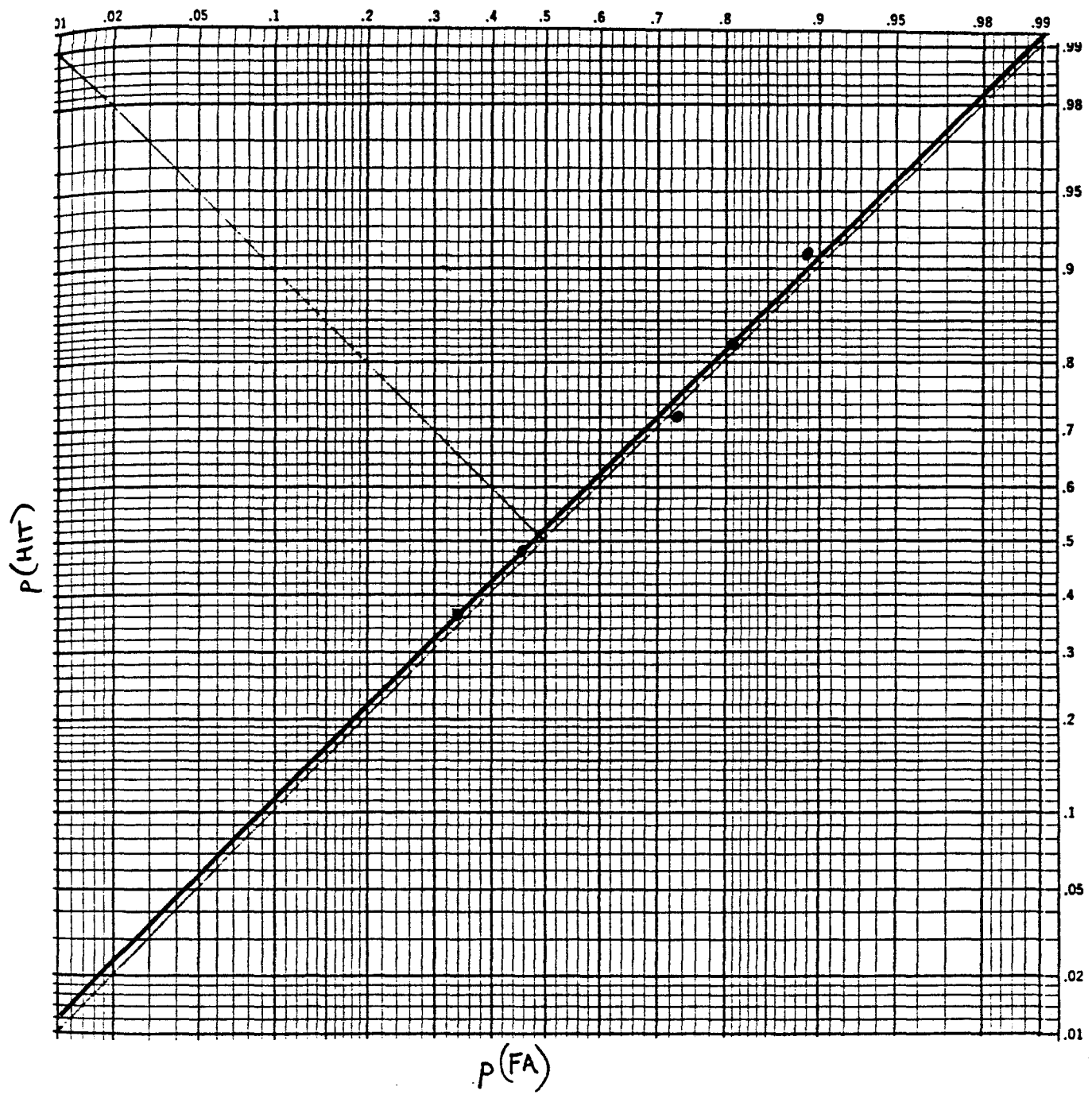


Figure 19. ROC Curves for the Corpsmembers for Category 4, Sexuality.

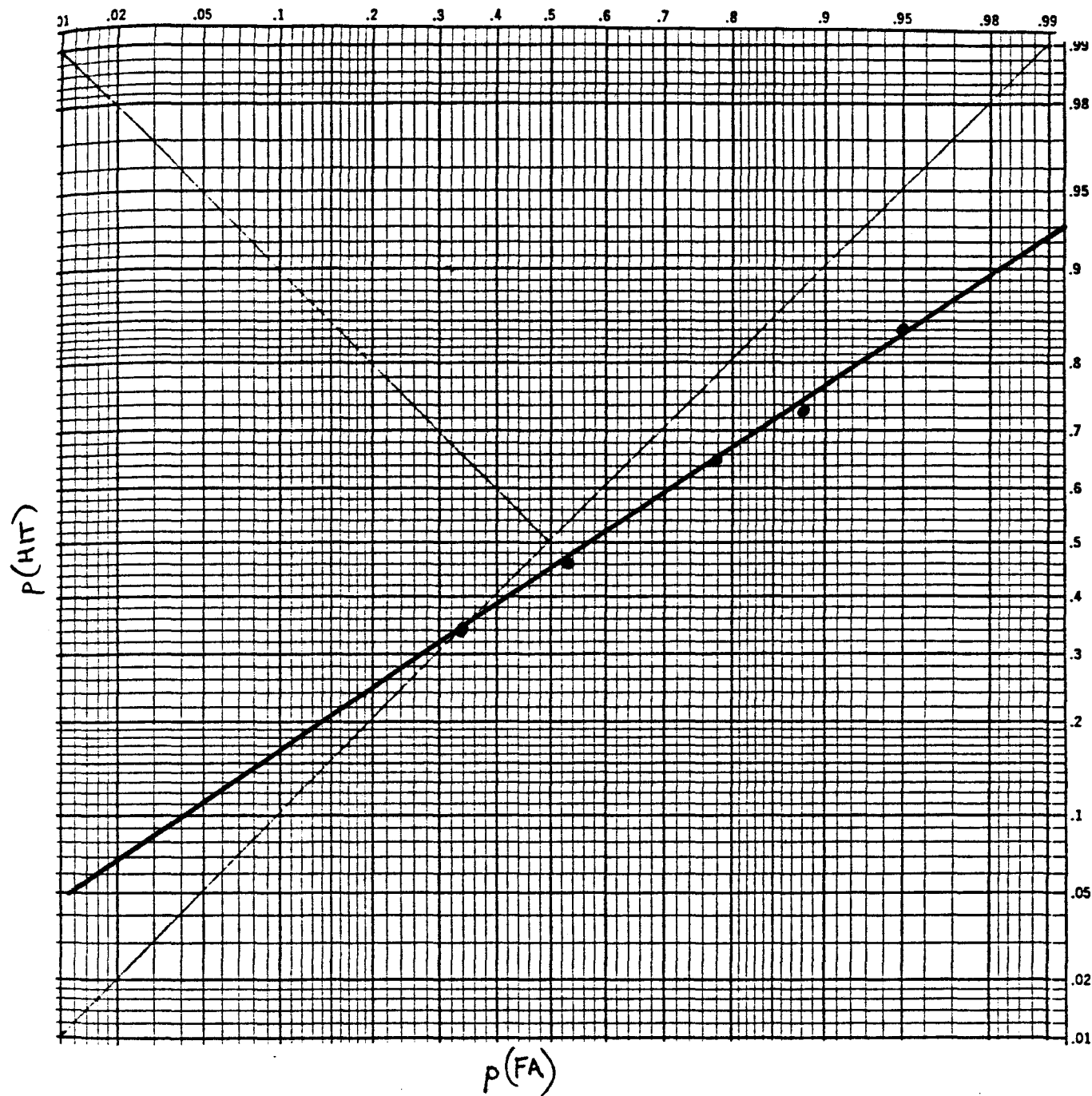


Figure 20. ROC Curves for the Control Group for Category 4, Sexuality.

can be found in Figures 17-20.

Category 5, Substance Abuse. Category 5 inventory items involved substance abuse by corpsmembers especially the use of alcohol and marijuana (Refer to Table 18 for a list of items in category 5).

The Mental Health Consultants' response to category 5 items resulted in a d' of .02 and a d'_e of .30. The HR was .60 and the FAR was .59. Response bias, at .99, was close to the point of equalling a criterion which equalled no bias. Preference was .60 indicative of a slight bias toward "Yes" responses. Accuracy was .51 or typical of the chance level.

Staff members' responses to category 5 items resulted in a d' of .08 and a d'_e of .05. The HR was .84 and the FAR was .82. Response bias at .93 indicated the adoption of a criterion which slightly favored "Yes" responses. However, preference indicated a strong bias to "Yes" responses with preference equal to .83. Accuracy was near chance at .51.

Corpsmembers' responses to category 5 items resulted in a d' of .02 and a d'_e of .10. The HR was .61 and the FAR was .60. Response bias was close to the point of equalling no bias in criterion level with response bias equal to .99. Accuracy was near chance at .52.

The control groups' responses resulted in a d' of $-.08$ and a d'_e of $-.05$. The HR was .64 while the FAR was .67. The control group maintained a strict criterion favoring "No" responses with response bias equalling 1.03. Preference, at .66, indicated a bias toward "Yes" responses while accuracy fell below the chance level to .49.

Table 26 summarizes the data for category 5 items. ROC curves

Table 26

Analysis of Category 5 Items, Substance Abuse

RESPONDENT GROUP	CATEGORY 5, SUBSTANCE ABUSE						
	d'	d' _c	HR	FAR	β	Pref	Acc
Mental Health Consultants	.02	.30	.60	.59	.99	.60	.51
Staff Members	.08	.05	.84	.82	.93	.83	.51
Corpsmembers	.02	.10	.61	.60	.99	.61	.52
Control Group	-.08	-.05	.64	.67	1.03	.66	.49

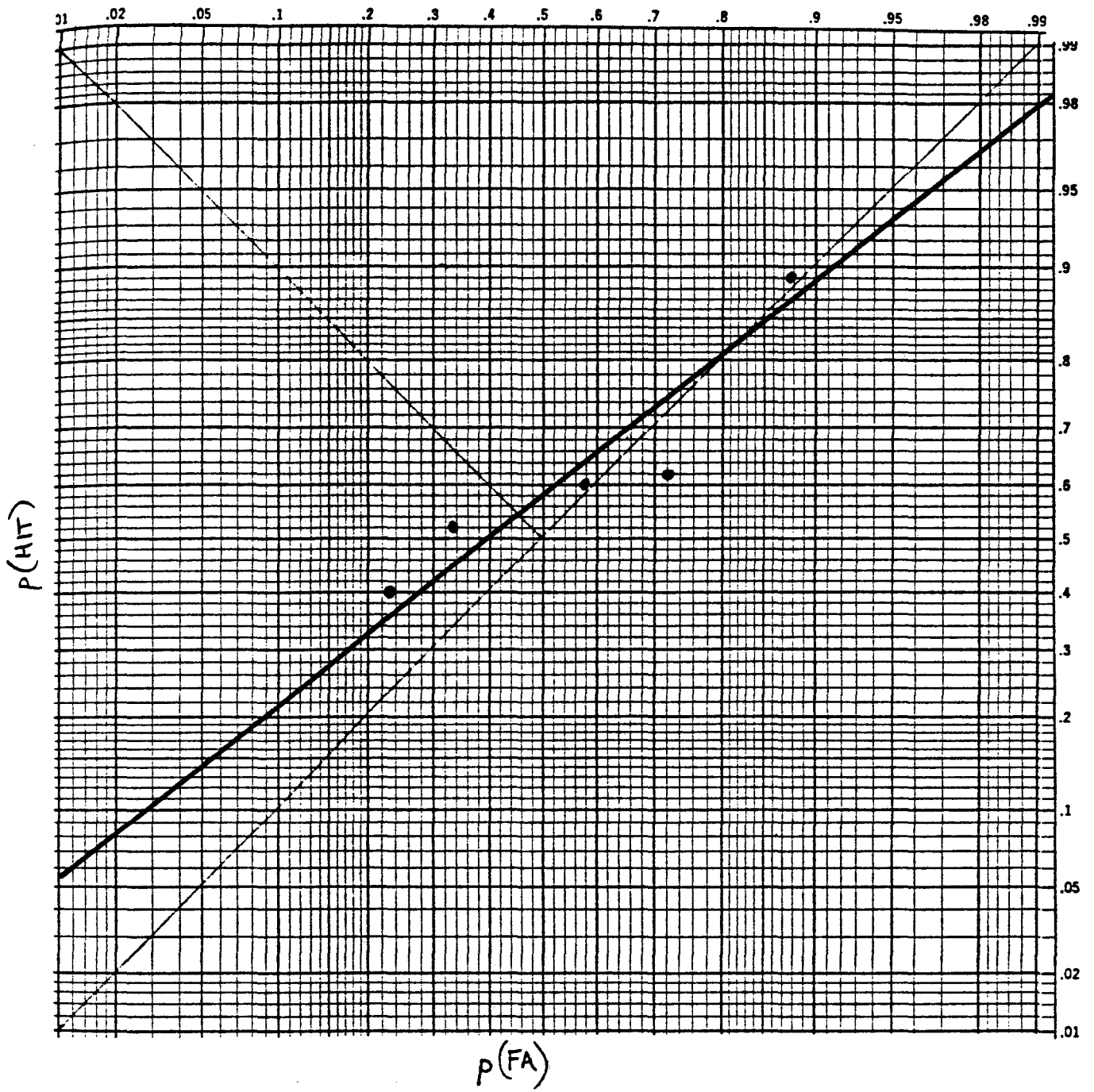


Figure 21. ROC Curves for the Mental Health Consultants for Category 5, Substance Abuse.

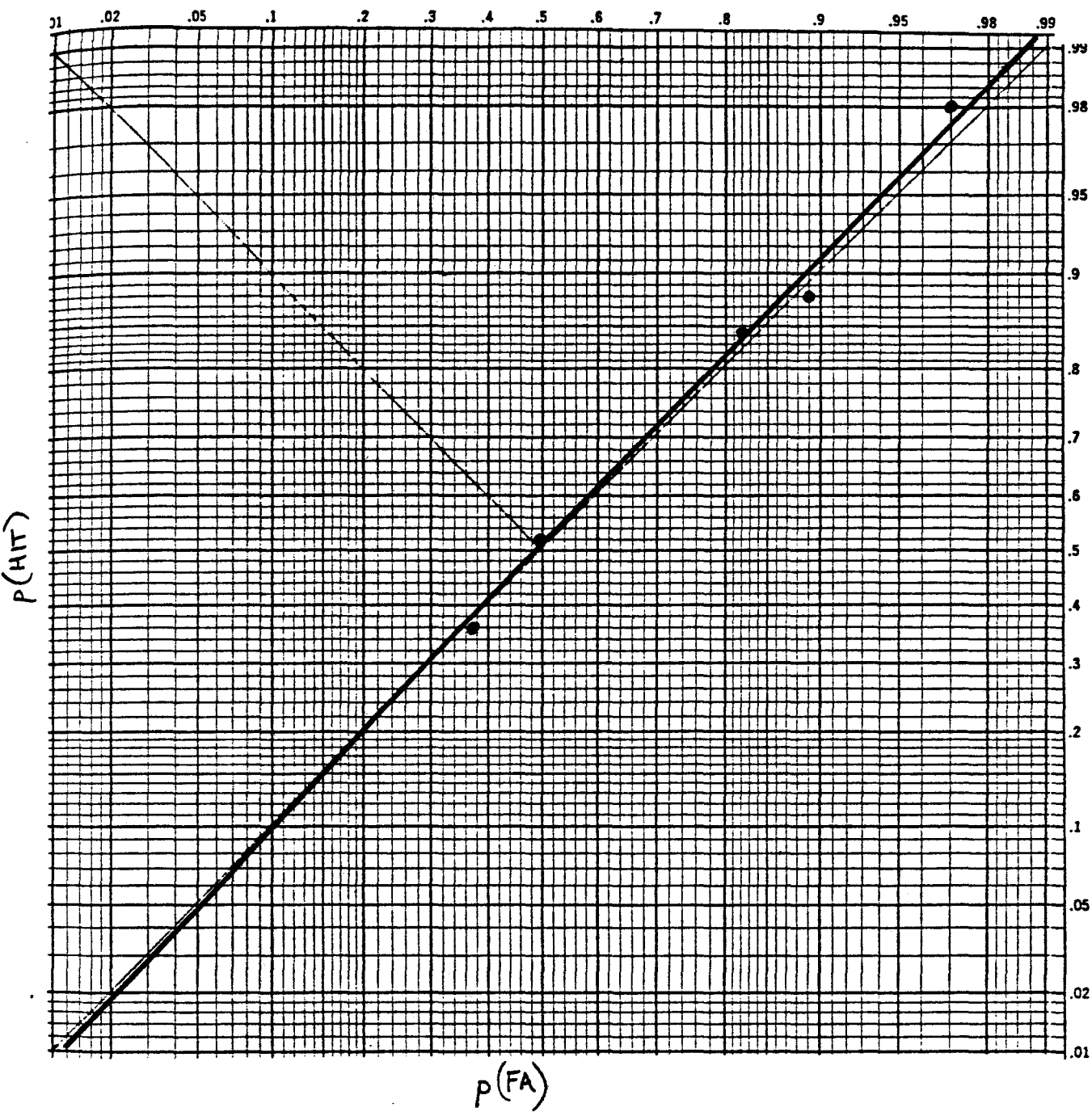


Figure 22. ROC Curves for the Center Staff for Category 5, Substance Abuse.

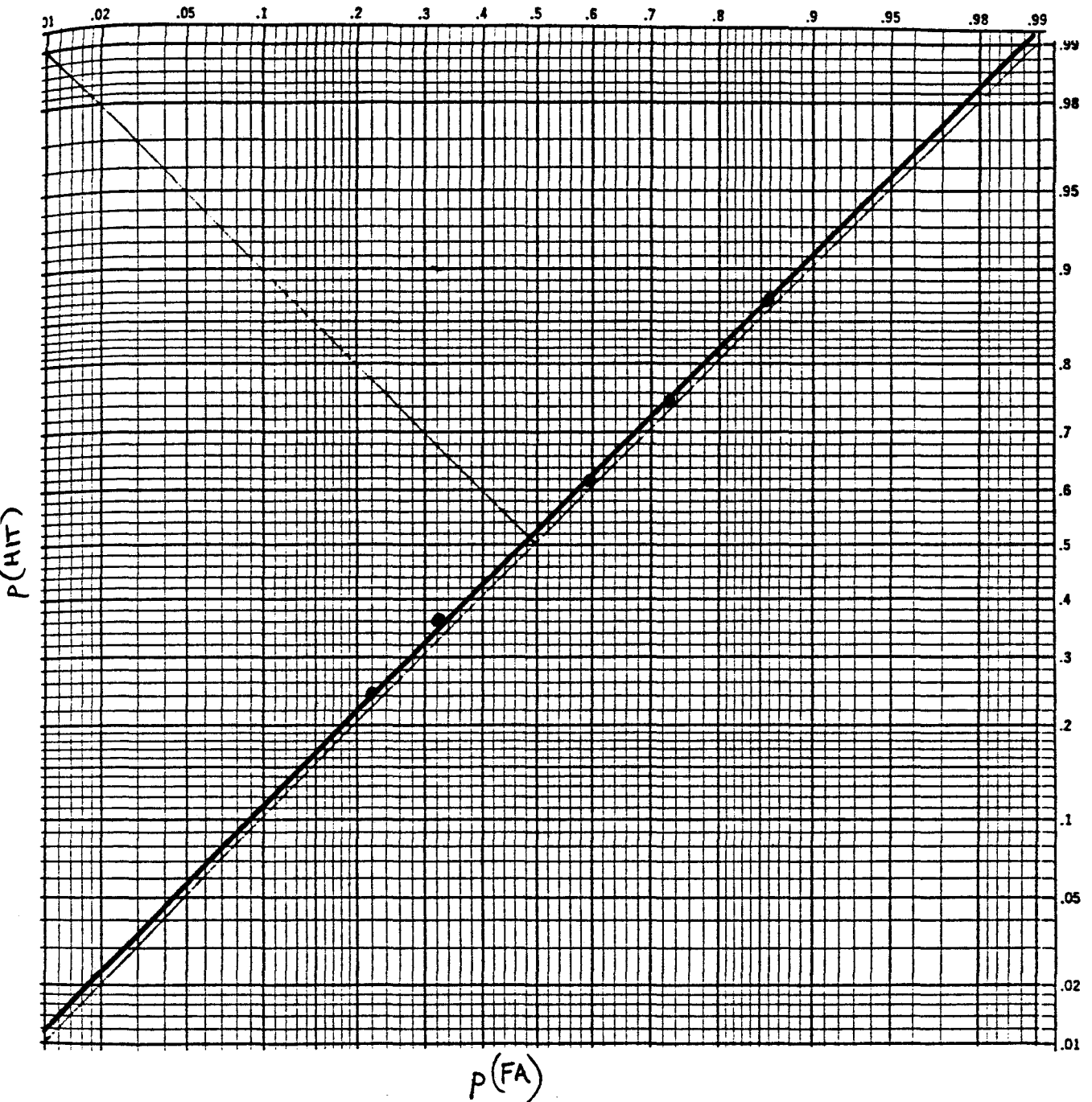


Figure 23. ROC Curves for the Corpsmembers for Category 5,
Substance Abuse.

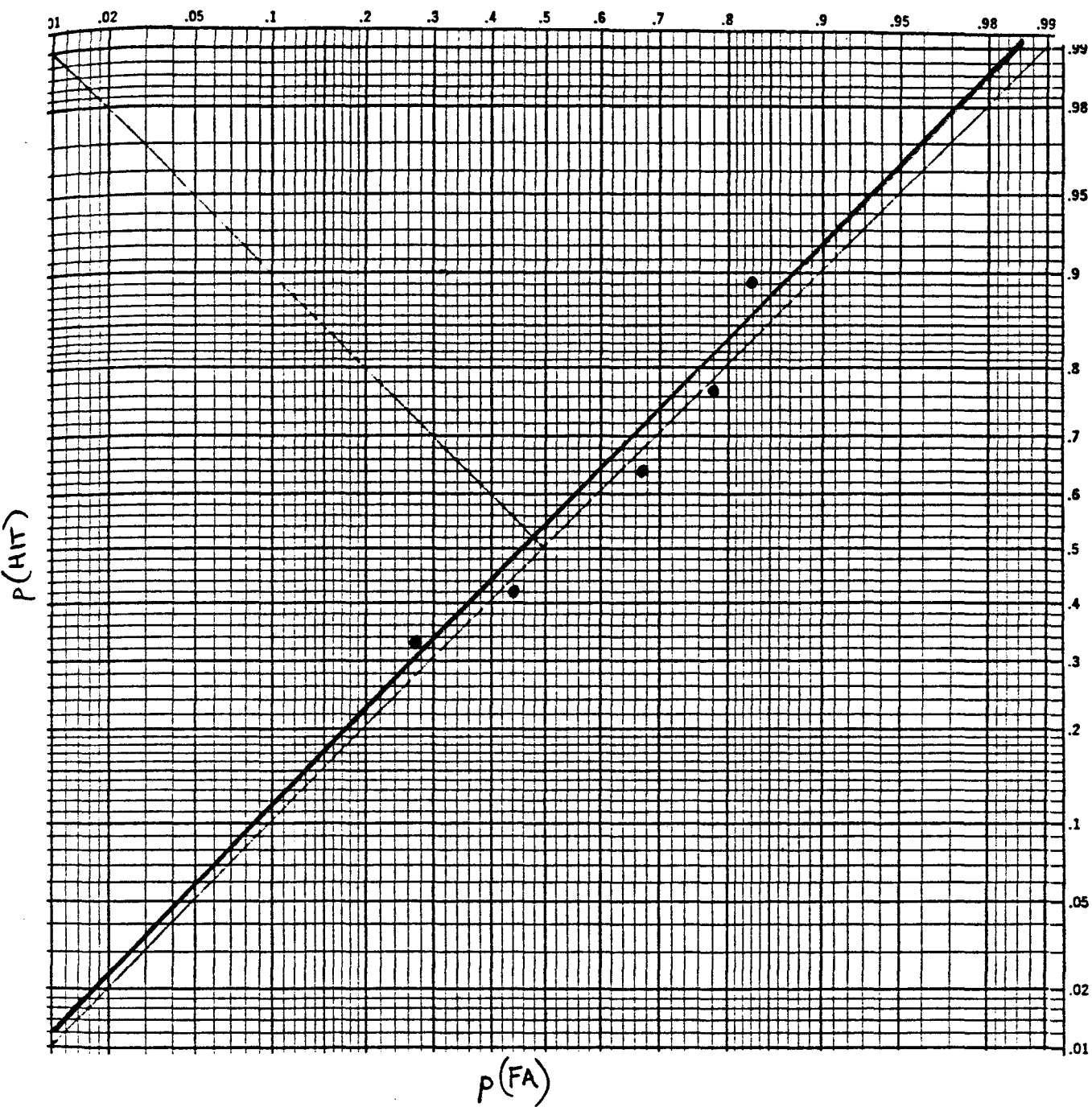


Figure 24. ROC Curves for the Control Group for Category 5, Substance Abuse.

can be found in Figures 21-24.

Category 6, Mental Health Problems. Category 6 inventory items referred to mental health problems of the corpsmembers such as depression, hallucinations, etc. (Refer to Table 19 for a list of items in category 6.)

Mental Health Consultants' response to category 6 items resulted in a d' of 1.00 and a d'_e of 1.06. The HR was .95 and the FAR was .74. Response bias, at .32, indicated that the Mental Health consultants maintained a lax criterion favoring "Yes" responses while preference at .85 indicated a strong bias toward "Yes" answers. Accuracy was .61.

Staff members' responses to category 6 items resulted in a d' of .29 and a d'_e of .36. The HR was .85 and the FAR was .82. Response bias was .89 indicative of a lax criterion while preference was .84. Both response bias and preference indicated a bias toward "Yes" answers. Accuracy was near chance at .52.

Corpsmembers' responses to category 6 items resulted in a d' of .02 and a d'_e of .00. Response bias, at .99, almost equalled the point of no bias in setting a criterion level. Preference, however, indicated a strong bias toward "Yes" answers with preference equal to .70. Accuracy was no better than chance at .51.

The control groups' responses to category 6 items resulted in a d' of .18 and a d'_e of .08. The HR was .77 and the FAR was .71. Response bias, at .90, indicated the adoption of a lax criterion favoring "Yes" responses. This represents a criterion shift from the three previous categories of items. Preference at .74 indicated a bias toward "Yes" answers while accuracy was near chance at .53.

Table 27 summarizes the data for category 6 items. ROC curves can be found in Figures 25-28.

Staff Determined Signal and Noise Distributions. Since results of d' and d' were so small for staffs' and corpsmembers' responses to the distributions determined by the Mental Health Consultants, a second signal-noise and noise distribution was developed based on the responses of the center staff. Corpsmembers' responses to the new distribution were determined for the entire inventory in order to see if any higher agreement could be achieved between staff and corpsmembers.

Corpsmembers' response to the new distributions resulted in a d' of .33 and a d' of .40. The HR was .78 and the FAR was .67. Response bias was .82 indicating the adoption of a lax criterion biased toward "Yes" responses while preference was .73, also indicative of a bias toward "Yes" responses. Accuracy remained near the chance level with accuracy equal to .56.

Responses of corpsmembers to this new distribution are summarized in Table 28. The ROC Curve for this data can be found in Figure 29.

Table 27

Analysis of Category 6 Items, Mental Health Problems

RESPONDENT GROUP	CATEGORY 6, MENTAL HEALTH PROBLEMS						
	d'	d'_e	HR	FAR	β	Pref	Acc
Mental Health Consultants	1.00	1.06	.95	.74	.32	.85	.61
Staff Members	.12	.15	.85	.82	.89	.84	.52
Corpsmembers	.02	.00	.70	.69	.99	.70	.51
Control Group	.18	.20	.77	.71	.90	.74	.53

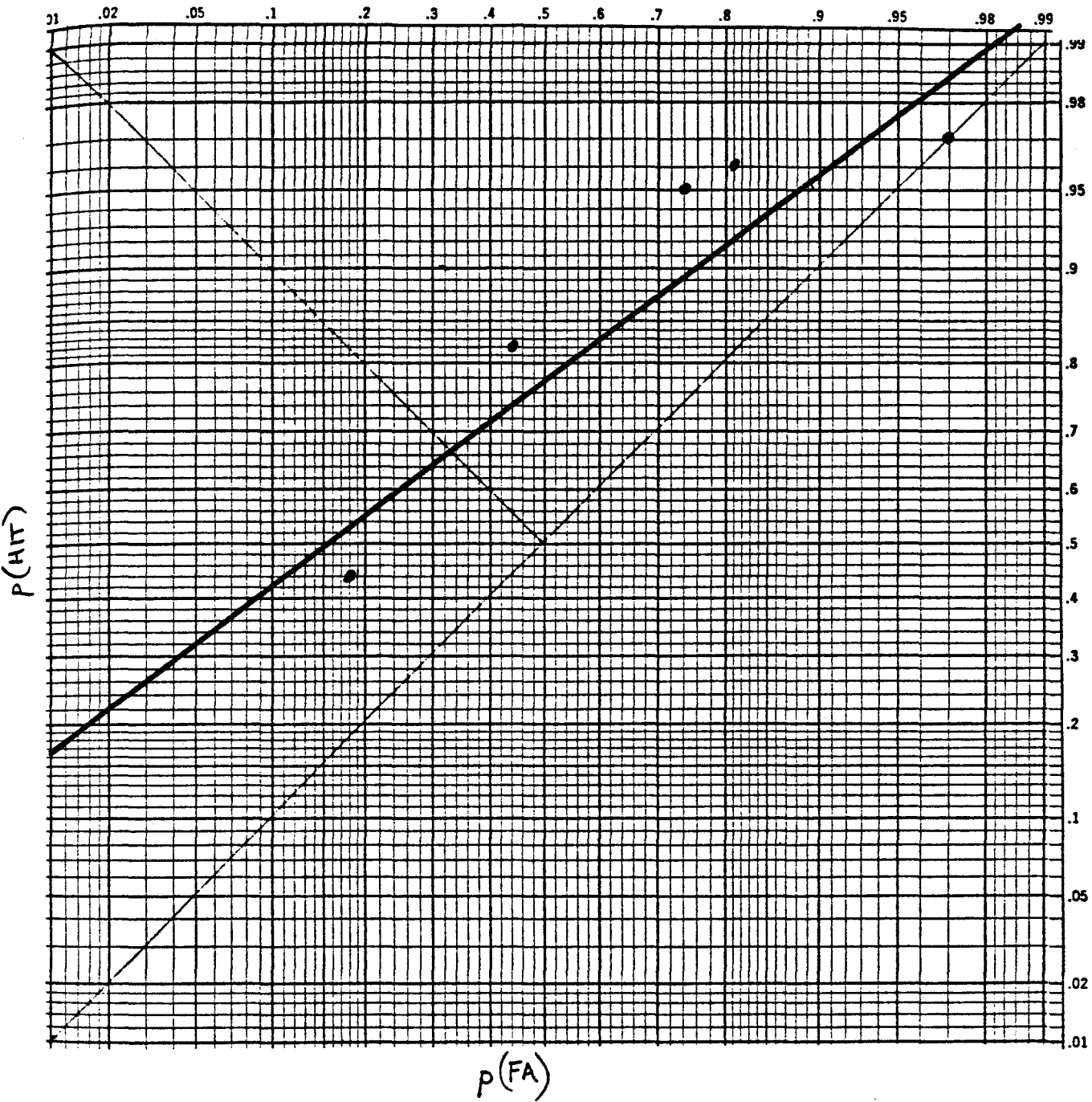


Figure 25. ROC Curves for the Mental Health Consultants for Category 6, Mental Health Problems.

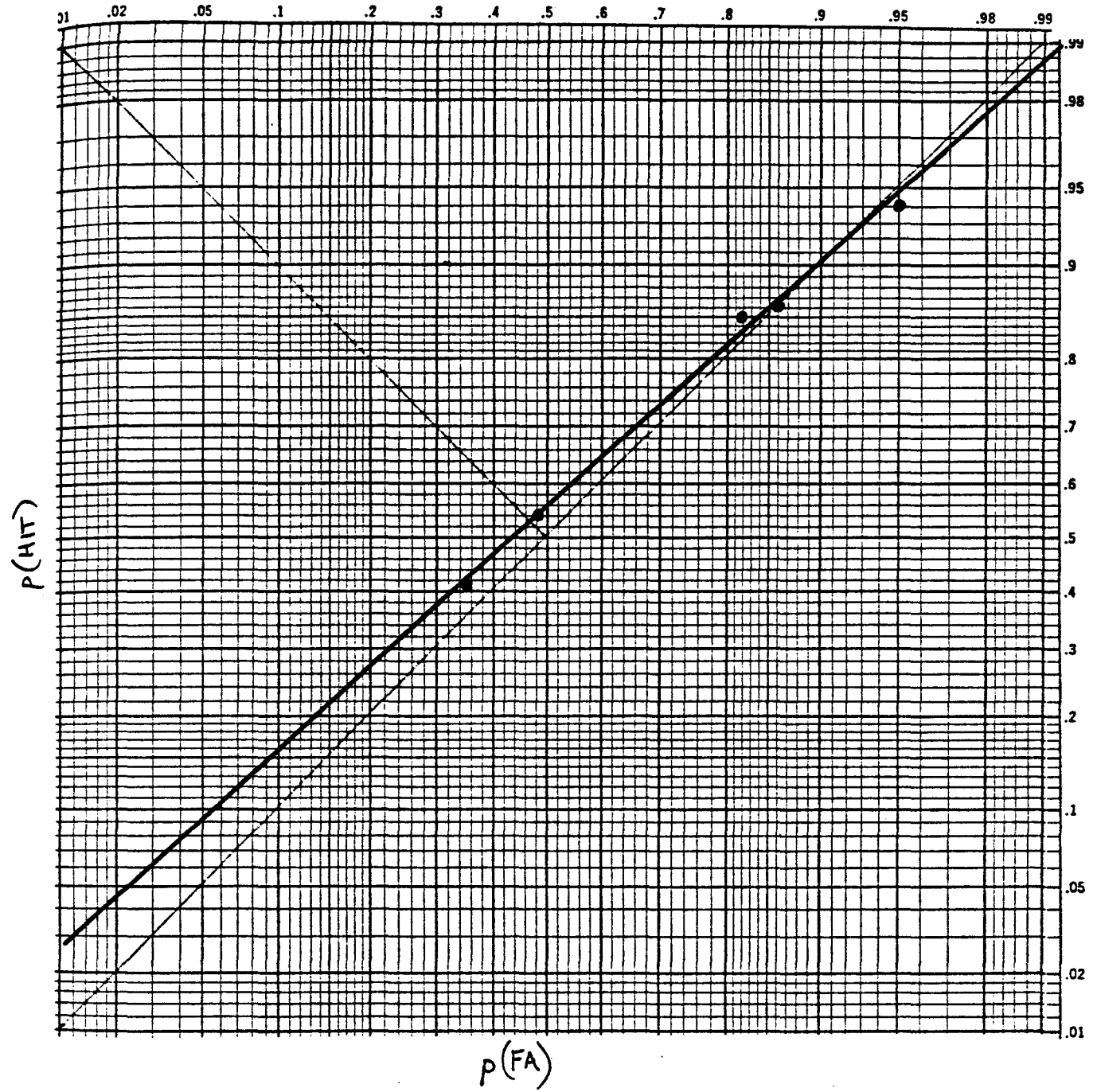


Figure 26. ROC Curves for the Center Staff for Category 6, Mental Health Problems.

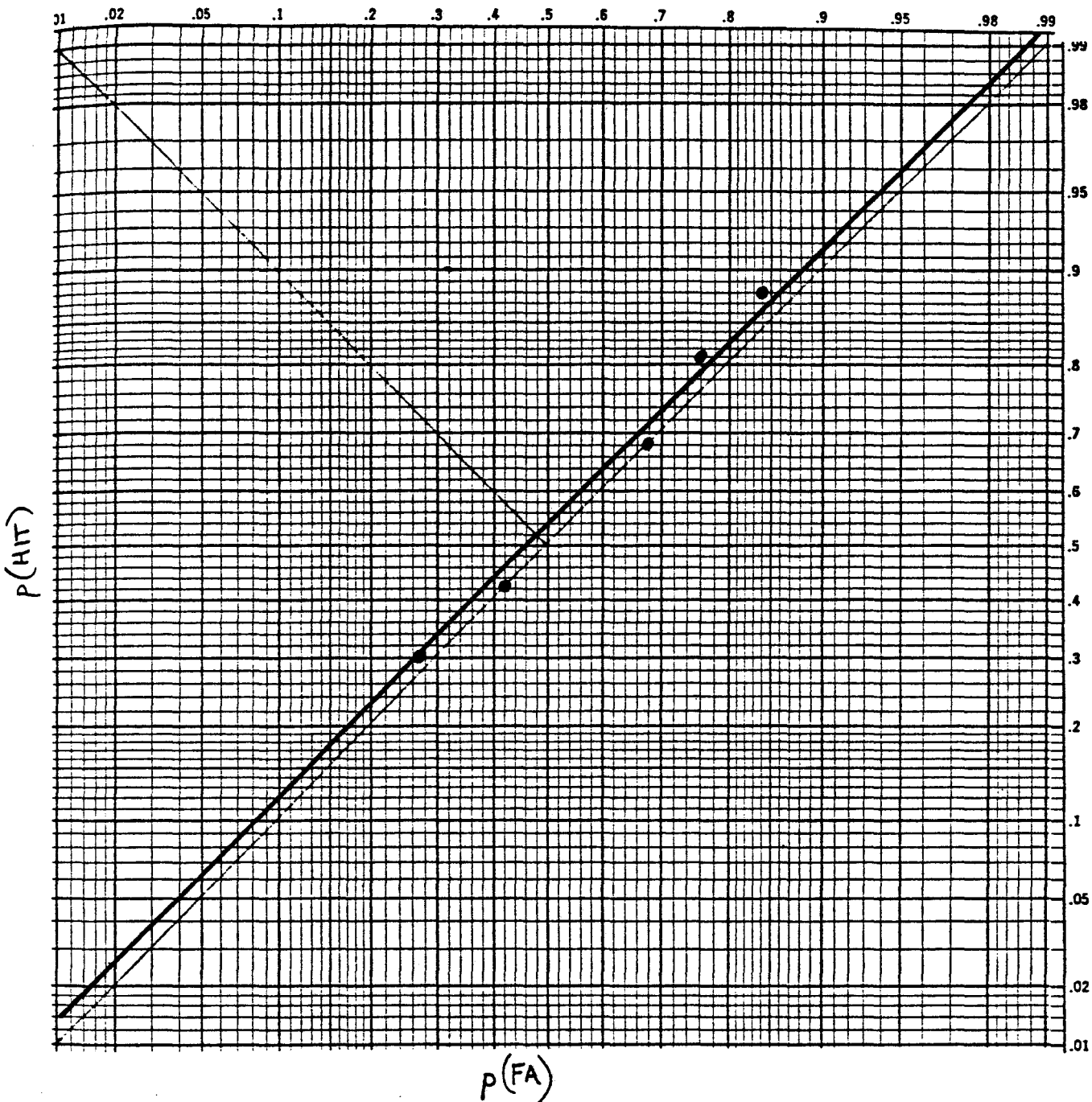


Figure 27. ROC Curves for the Corpsmembers for the Category 6, Mental Health Problems.

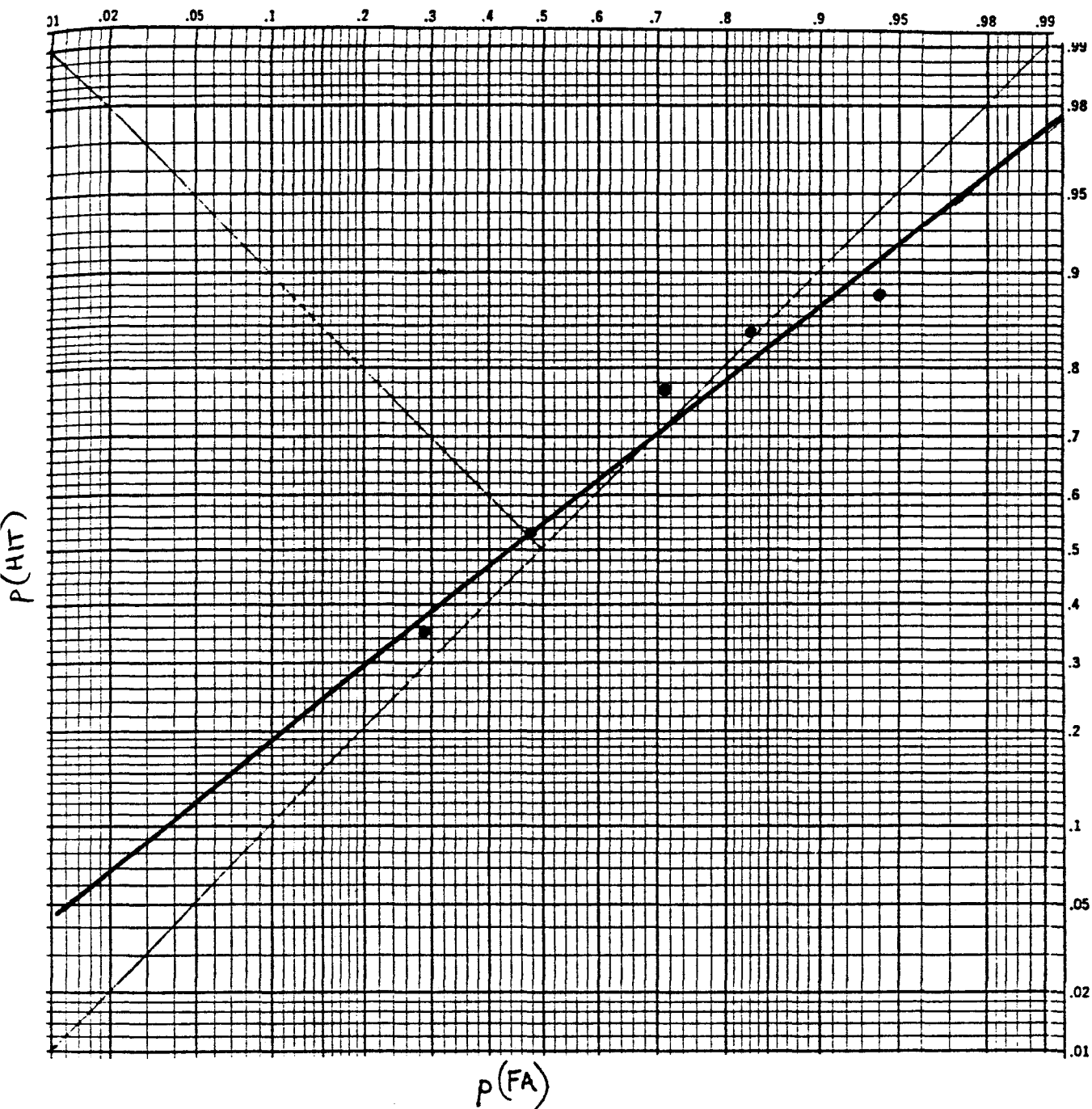


Figure 28. ROC Curves for the Control Group for Category 6,
Mental Health Problems.

Table 28

Analysis of Corpsmembers' Responses to
Staff Determined Signal and Noise Distributions

CORPSMEMBERS' RESPONSES TO STAFF DETERMINED SIGNAL AND NOISE DISTRIBUTIONS (ALL INVENTORY ITEMS)							
	d'	d'_e	HR	FAR	β	Pref	Acc
Corpsmembers	.33	.40	.78	.67	.82	.73	.56

CHAPTER V

ANALYSIS, DISCUSSION, AND CONCLUSIONS

The organization of Chapter V includes summary statements regarding the purpose of the study, the procedures utilized, and the delimitations of the study. Chapter V also includes a discussion of the results of the study, implications of the results for Job Corps as well as implications for the use of a Signal Detection model in questionnaires. Finally, specific conclusions will be presented as well implications for future research.

Purpose of the Study

The purpose of the study is to develop a Needs Analysis Inventory which can identify the mental health needs and problems of students enrolled in the United States' Department of Labor's Job Corps Program. It is assumed that this Inventory can provide more accurate information to Job Corps' National Health Office than the current methods by which this data are presently collected.

The Procedures

The procedures used in the development and analysis of data are based upon a Signal Detection model. Categories of mental health needs and problems were derived from the results of a preliminary questionnaire administered to mental health consultants to Job Corps and the corpsmembers at the Cincinnati Job Corps Center. Three sets of inventory items have then been developed. The first set reflects

the broad categories of mental health needs and problems. Additional inventory items have been developed which did not reflect the categories of needs and problems (blanks) while the third set of items were intentionally ambiguous. The final questionnaire has been administered to mental health consultants, center staff, corpsmembers, and a comparison group of high school students (total N = 116). Hit Rates, False Alarm Rates, d' , d'_e , β , Preference and accuracy were calculated.

The Delimitations

The study does not attempt to resolve the problem of needs definition.

The study does not attempt to diagnose corpsmembers.

The study does not attempt to evaluate Job Corps mental health staffs' abilities to identify mental health problems or needs.

The study does not attempt to predict future mental health needs or problems in Job Corps applicants. Rather the study focuses on more clearly identifying the mental health needs and problems of corpsmembers currently enrolled at centers.

The study is limited to only those corpsmembers who are currently enrolled in the Job Corps program.

The study does not attempt to evaluate administrative or clinical policies and procedures at any given Job Corps Center.

ANALYSIS

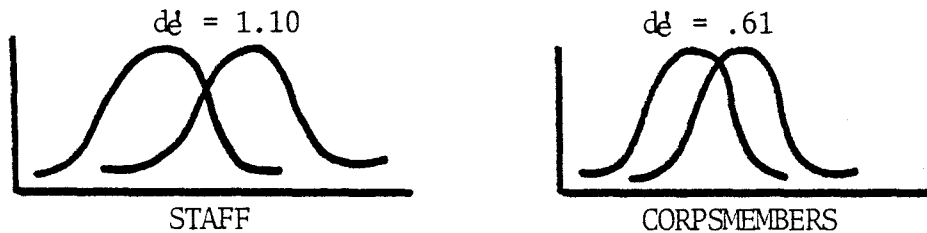
In general, the range of obtained d' and d'_e ,¹ indicates that there seems to be little or no congruence between what the mental health consultants described as important for corpsmembers, on the inventory, and how the center staff and corpsmembers view the same mental health problems and needs as depicted on the inventory. At best there seems to be some agreement between the mental health consultants and center staff in how they view some very basic needs of corpsmembers as measured by the category of personal needs--privacy of corpsmembers, financial concerns, length of stay in Job Corps, etc. In all other categories of the inventory, corpsmembers and staff are in basic disagreement with the mental health consultants and with each other.

Essentially, what exists are three mutually exclusive opinions as to what actually constitutes a mental health need and problem for corpsmembers. Given this finding the analysis will address each category of the inventory separately.

Category 1, Personal Needs. Category 1 items typically were representative of those concerns of corpsmember's privacy, length of stay in Job Corps, and financial obligations. Mental health consultants and staff members are in basic agreement in how they view this category of items as measured by d'_e (Refer to Figure 1). Although there is still a large area of overlap between the two distributions, the staff

¹Typically, d' ranges from zero to +4.64. A d' of +1.00 means that the distributions are one standard deviation apart, $\bar{d}' = +2.00$ means that the distributions are 2 standard deviations apart, etc. A $d' = 0.0$ means the distributions overlap, or stated differently, respondents could not differentiate between the two distributions.

Figure 1. Distributions for Staff Members and Corpsmembers for Category 1, Personal Needs



members virtually duplicated the mental health consultants' responses. Staff members' HR, FAR, preference for "Yes" responses, and accuracy are basically identical to the mental health consultants. Both groups also established the same lax criterion for these items.

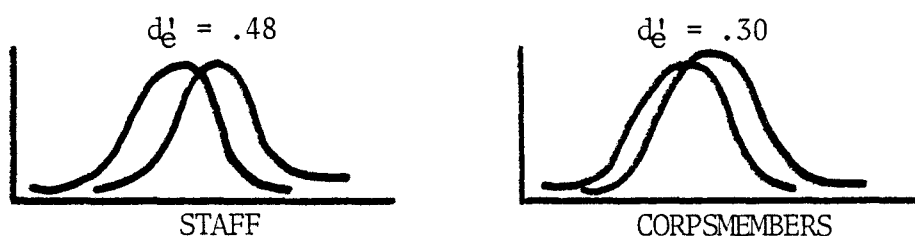
Corpsmembers, however, while replicating the mental health consultants accuracy, preference for "Yes" responses, and similar lax criterion, achieved a much smaller d' and d_e indicating that they could not differentiate between the two items in the same fashion as the staff could. (Refer to Figure 1.) However, corpsmembers and the comparison group of Clemente High School students scored similarly. It can be concluded that the mental health consultants and staff members are in basic agreement that corpsmembers need privacy, that they should feel safe while they are at the center, and that the corpsmembers' finances (wages, etc.) should be explained to them.

It is of interest to note that the items included in this category can be described as being the least abstract and least psychological in nature. Individuals evaluating these items can rely on "common sense" and "intuition" rather than any special knowledge of psychology

or counseling.

Category 2, Mental Health Needs. Category 2 typically involved items representative of training corpsmembers in assertiveness training, problem solving, and adapting to the center regulations. Neither staff nor corpsmembers are in basic agreement with the mental health consultants as measured by d'_e . (Refer to Figure 2.)

Figure 2. Distributions for Staff Members and Corpsmembers for Category 2, Mental Health Needs



Neither the staff nor corpsmembers (and for that matter the comparison group), could differentiate between the two distributions as defined by the mental health consultants. Given the obtained d'_e , the staff and corpsmembers do not agree with the results obtained from the mental health consultants.

It could be argued that items in Category 2 require a fine-grain analysis to determine the noise and signal-noise implying a certain data base or frame of reference. However, the accuracy of staff members and corpsmembers approximated chance responding (.55 and .54 respectively). This random responding tends to suggest several alternative interpretations.

Typically, d 's and accuracy scores of this nature tend to suggest

that the respondents were "guessing" at most of the items. In short, they could not discriminate between a noise item and a signal item. If they were guessing a question arises. Were they guessing because they lack a comparable data base to that of the mental health consultants?

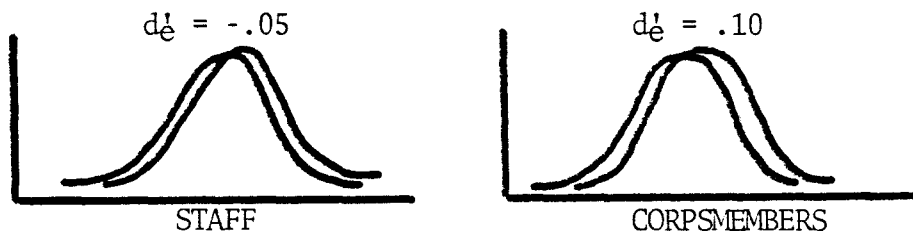
Alternatively, the mental health consultants achieved a d'_e of 1.01 which suggests a fair amount of diversity of opinion within this group. It is also possible that corpsmembers and staff are merely reflecting a broader spectrum of opinions regarding these items.

Finally, it could be assumed that for most of the corpsmembers (and possibly staff) this might be the first time they have been asked to comment about this specific type of information. The nature of the inventory items can be conceptualized as a novel stimulus. A novel stimulus could account for the random responding.

If any of these conditions accurately represent the findings, training of staff and corpsmembers might be suggested. If the results of corpsmembers and staff are due to guessing or novelty, then both groups lack the information required to evaluate and judge whether these items are in fact necessary for corpsmembers. In this case training as to what types of programs could be utilized would be appropriate. If the results indicate a broader spectrum of opinions, then obviously many philosophies are interacting at the same time which probably presents managerial and administrative problems. In this case training of the "official" policies and procedures might be required stressing more the managerial controls necessary for implementing the "official" policy.

Category 3, Support Systems. Category 3 items referred to corpsmembers' need for developing friends and maintaining some type of support system while in Job Corps. Again, the responses of corpsmembers and staff are in basic disagreement with the responses of the mental health consultants. (Refer to Figure 3.) The obtained d' and d'_e of

Figure 3. Distributions for Staff Members and Corpsmembers for Category 3, Support Systems

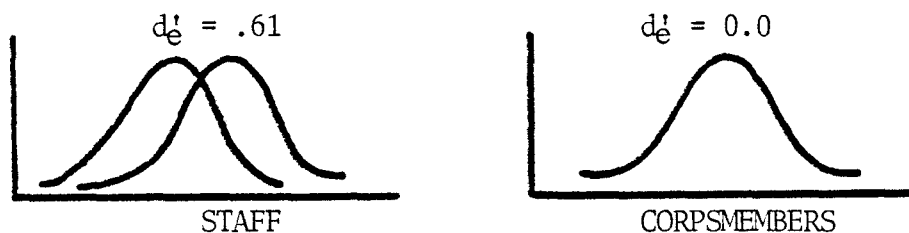


corpsmembers and staff suggest that neither group could differentiate between the noise and signal populations as defined by the mental health consultants. Of interest, however, is the difference in the criterion level established by the various groups. The mental health consultants established an extremely lax (.09) criterion indicative of a strong bias toward "Yes" responses. This was coupled with a strong bias for "Yes" as indicated in their preference score (.60). On the other hand, although corpsmembers and staff had a strong bias for "Yes" answers as measured by preference (.73 and .83 respectively) staff members had established a strict criterion (1.12) for this category of questions which acted as a bias for "No" responses (No, not a problem/need). For this category of items, the mental health consultants were willing to include (say "Yes" to-) any item which remotely resembled or

described a need. This difference in response bias could account for the disparity between the groups.

Category 4, Sexuality. Category 4 items referred to sexual relations of corpsmembers and birth control. Again, the corpsmembers and staff demonstrate very little agreement with the mental health consultants in this category of items as measured by the obtained d'_e . In fact, the corpsmembers' d'_e (0.0) indicates that, to them, there is absolutely no difference between those items the mental health consultants considered to be signal and the items the mental health consultants considered to be noise. Staff members agreement with the mental health consultants was also minimal. (Refer to Figure 4.)

Figure 4. Distributions for Staff and Corpsmembers for Category 4, Sexuality



Although preference for all three groups indicated a strong bias for "Yes" answers, differences existed in the criterion adopted. The response bias for both mental health consultants and staff members indicate that they adopted a lax criterion while corpsmembers had adopted a strict criterion. This could account for some of the discrepancies in the scores. More importantly, the age of the corpsmembers (16-22) probably accounts for their d'_e equal to zero. They are at an

age where sexuality is of the utmost importance. Thus they have established a strict criterion for calling an item about sex as problematic. This can be seen in their accuracy score (.49) which is below the chance level and typical of random responding, i.e., nothing is a need, everything is a need, nothing is a problem, everything is a problem. This also would seem to be corroborated by the negative and low d' (-.10) of the comparison group.

Given the obtained d' and d'_e of the corpsmembers and staff, it is sage to assume that these two groups view the sexual problems and needs of corpsmembers differently from the mental health consultants.

For corpsmembers, it is interesting to note that the FAR (.73) is higher than their HR (.71). This is of special interest since the corpsmembers' HR is fairly consistent across categories. When the items in the noise population are evaluated, 50% of these items involve some type of instructions or information. It would seem that corpsmembers (and probably staff) place more emphasis on the role of sex education than the mental health consultants. Given this information, the data tend to reflect a philosophical difference regarding sex education in Job Corps. Should more sex education be conducted in Job Corps? If so, who should do this? The obvious group to do this would be the mental health consultants. However, by including this in the noise population, the majority of mental health consultants have indicated that formal sex education is not a corpsmember need or problem.

Mental health consultants addressed the problem of pregnancy by including birth control information as signal-noise items in this

category of questions. However, the emphasis on birth control (and not sex education per se) seems to underscore the pathological approach based on elimination of symptoms.

The findings of the inventory for sexuality items tends to suggest that mental health consultants view the sexuality problems and needs different from the way in which the staff and corpsmembers do. The findings suggest that possibly there exists a philosophical difference between the two groups as to what should be presented to corpsmembers and (potentially) who should present the material (sex education). Finally, the age of the corpsmembers is a factor which probably interacted with corpsmembers' results.

Category 5, Substance Abuse. Category 5 inventory items referred specifically to the use of alcohol and marijuana by corpsmembers.

Given the low d' and d_e of the staff and corpsmembers, again it is safe to assume that the staff and corpsmember view substance abuse differently from the mental health consultants. What is of interest is that although all three groups exhibited a bias to "Yes" responses in their preference scores, response bias indicate that all three groups established criterions at close to the "no-bias" level ($\beta = .99, .99, .93$ for mental health consultants, corpsmembers, and staff respectively). This is the only category for which response bias is close to the "no-bias" level. It could be hypothesized that this finding is a result of the Substance Abuse Training program conducted by the National Health Office. A major thrust of the Substance Abuse Training Program is that an objective, non-emotional approach is made to the problem of substance abuse. Although it is questionable whether

the Substance Abuse Program actually curtails corpsmembers' substance use (no evaluation has been performed) the results of the response bias of all three groups would seem to indicate that "something" has happened, at least at one center, in terms of how the issue of substance abuse is viewed by corpsmembers, staff, and mental health consultants.

A potential difference in this category is that the signal and noise distributions established by the mental health consultants (refer to Chapter 4, Table 18) would seem to indicate a permissive and less restrictive attitude toward substance abuse than those which might be established by staff members who would have to deal with the daily problems inherent in substance abuse (intoxication, illegalities, trafficking, etc.). Again, corpsmembers are at an age where experimentation with alcohol and other illegal substances is probably at its greatest which could account for their low scores.

Figure 5. Distributions for Staff and Corpsmembers for Category 5, Substance Abuse



Given the obtained d'_e , it is safe to assume that corpsmembers and staff view the issue of substance abuse differently from the mental health consultants.

Category 6, Mental Health Problems. Category 6 items referred

to those mental health problems experienced by corpsmembers such as stress, depression, psychosis, etc.

Again, given the obtained d'_e values for corpsmembers and staff, it is safe to conclude that their views of mental health problems are different from those of the mental health consultants.

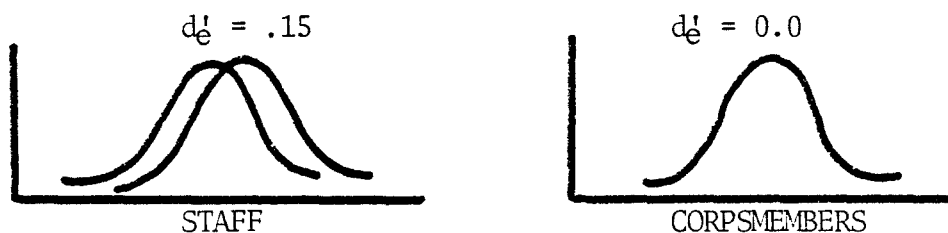
Of interest is that the mental health consultants had established a very lax criterion for calling something a problem ($\beta = .32$) while staff and corpsmembers also established lax criteria ($\beta = .89$ and $.99$ respectively) the criteria established by the latter groups are closer to the point of "no bias." Again, the preference scores of all three groups are indicative of a bias to "Yes" responses.

As in category 4 (sexuality) the corpsmembers d' was 0.0 indicative of a complete overlap between the two distributions. Stated differently, the corpsmembers were unable to differentiate between whether an item represented a problem or not. Their responses are again typical of a chance responding pattern or random responding. It is difficult to imagine that corpsmembers have not come into contact with individuals who are experiencing behavioral or emotional problems and it is also difficult to imagine that corpsmembers do not have some opinion as to what constitutes a behavioral or emotional problem. What is of interest is that of the eleven signal items in this category (refer to Chapter 4, Table 19) only two items are representative of a "preventative" approach; "corpsmembers need information regarding the kinds of stress which they will undergo while at the center," and "corpsmembers should be able to recognize when they are depressed." All of the other signal items relate to some type of pathological behavior. Although it is

logical that statements regarding pathology should be viewed as Signal items in a category nominally entitled "Mental Health Problems", many of the items typical of a preventative approach were considered as Noise items. It is also of interest that during the developmental testing, when there was an opportunity to discuss each item with control subjects, many of the Noise items in this category were singled-out by students as desirable for themselves or their school program. Given this information, it is easy to understand the high FAR achieved by corpsmembers (and staff) which resulted in a low d' and d_e' score.

(Refer to Figure 6.)

Figure 6. Distributions for Staff and Corpsmembers to Category 6, Mental Health Problems



Again, the results of category 6 prompt the same question as the results of category 4, sexuality. Is there a philosophical difference between the manner in which the mental health consultants view mental health problems and the manner in which the staff members and corpsmembers view the same? Or do staff and corpsmembers lack the necessary data base by which to identify mental health problems at the center? If the latter is valid, training programs should be developed at least for center staff in what constitutes a mental health problem

versus what is "normal" adolescent behavior. If the former is valid, managerial and administrative policies and procedures might be required.

DISCUSSION

In general, there seems to be little or no congruence between what the mental health consultants described as important for corpsmembers, on the inventory, and how the center staff and corpsmembers view mental health needs and problems. At best there is some congruence between the staff and mental health consultants in how they view the personal needs of financial concerns, privacy for corpsmembers, and safety of belongings. For all other categories of items neither the staff nor the corpsmembers agree with the mental health consultants as to what is a need/problem and what is not a need/problem as measured by the inventory.

These results prompt several questions:

- (1) Is there something inherent in the way which staff and corpsmembers responded which is intrinsically different from the responses of the mental health consultants?
- (2) Are there any extraneous variables operating which could have influenced the corpsmembers or staff in how they responded?
- (3) Given that the corpsmembers and staff disagreed with the mental health consultants definitions of signal and noise (need/non-need, problem/non-problem) how congruent are the corpsmembers and staff to each other?

(4) Is a Signal Detection model applicable to the questionnaire process?

These questions will be discussed by addressing the strategies and decision rules of each respondent group, staff determined noise and signal-noise distributions, extraneous variables, and the applicability of the Signal Detection model.

Strategies and Decision Rules. For some of the respondents strategies and decision rules regarding how they responded to the inventory are obvious. The mental health consultants are a case in point.

As a group, the mental health consultants adopted extremely lax criteria for answering the inventory. In some instances, the response bias was as low as .09 and .19. In all cases, the response bias was lax and favored a "Yes" response. Again, in all cases, the mental health consultants showed a bias to "Yes" answers in their preference score. Preference ranged from a minimum of .60 to a maximum of .89. The establishment of a lax criterion and the preference for "Yes" responses can be summarized by the decision rule "If in doubt, call the presentation a need or a problem." This could also be seen as the maximum "Better safe than sorry." Given that most, if not all of the consultants, are also clinicians, this decision rule can be viewed as one which minimizes the chance that the traditionally defined Type I Error will occur (rejecting H_0 when H_0 is true) and one which typically minimizes problems in a clinical practice. The trade-off however is an increase in the traditionally defined Type II Error (accepting H_0 when H_0 is false) which is reflected in the FAR of the

mental health consultatns in all categories.

Staff members seemed to be operating under a different strategy. Staff members' response bias varied from a low of .42 to a high of 1.12. Most of the time, the criterion adopted was lax which would bias staff answers to a "Yes" response except in one category, support systems, where the staff exhibited a criterion shift to a strict criterion. However, the HR of the staff remained fairly constant across all categories at +5 points. This type of responding is typical of an attempt to maintain a high HR, no matter what. This could account for the negative d' staff attained in category 3, support systems. It is also of interest to note that the staff maintained a fairly consistent preference rate with a strong bias of "Yes" answers.

The corpsmembers' response strategy is not so obvious. It almost seems as if two different response strategies were utilized, one for those items related to problems and a second for the inventory as a whole. For those categories of items which may typically be thought of as problem-oriented (mental health problems, substance abuse, and sexuality) the corpsmembers HR and FAR were consistent. Of more interest is the difference between the HRs and FARs for these three categories. In each case, the difference between the HRs and FARs was either one or two points resulting in accuracy scores either at or below chance. When accuracy is this low, it typically suggests a certain randomness in the responding. However, as Sidman has suggested, random responding is simply another way of stating that the subjects are responding to a non-experimenter stipulated variable. In this case, it would seem that the corpsmembers' age group might be a factor

interacting with the corpsmembers' perceptions of problems and needs. As stated earlier, corpsmembers are at an age when sexuality and experimentation with substances (especially alcohol and marijuana) are at their greatest. Also, the pathological orientation of the signal items in the mental health problems category could suggest a high FAR. It could be hypothesized that the corpsmembers' "random responding" is more a function of their age and the pathological orientation of the category of mental health problems.

When viewing the pattern of corpsmembers' responses, as a whole, the pattern is similar to that of how the staff responded. Although not as consistent as the staff, corpsmembers' HR were basically the same across all categories. Corpsmembers also exhibited a criterion shift. The pattern, again, is suggestive of that type of responding where the subjects are trying to maintain a high HR. In this sense, it would seem that corpsmembers and staff viewed the inventory as a "test" even though instructions stated that there were no "right and wrong" answers only opinions. This tends to suggest that both groups' histories of test-taking contributed as much to the results as did the instructions given before the administration of the inventory.

Staff Determined Signal/Noise Distributions. Given that neither the staff nor the corpsmembers were in basic agreement with the mental health consultants, the question arises, were the corpsmembers and staff in agreement with each other?

In order to test this question, the signal and noise distributions were re-determined. This time, the responses of the staff were utilized to establish the noise and signal populations. The same

rule was applied to the staff responses as was used for the mental health consultants, i.e., if 5/7 of the staff were in agreement that an item was a signal item, it was so considered. If the 5/7 interrater reliability was not achieved, the item was considered as a noise item. In this case 34 items were determined by staff to be signal items while 66 items were considered as noise. Given this distribution, it was impossible to maintain the same six categories of inventory items as were utilized in the initial analysis. Thus the comparison was made for the corpsmembers on the test as a whole.

Utilizing the staff determined distributions, the corpsmembers achieved a d' of .33 and d_e of .40. This can be compared to the corpsmembers' d' of .20 and d_e of .20 for the entire inventory when the mental health consultant determined distributions were used. Although a higher d' was achieved, it is not a significant improvement.

Corpsmembers' response bias to the new distribution was .82, preference was .73, while accuracy was .56. In short, the corpsmembers' responses to the staff determined signal and noise distributions was basically the same as the results of the corpsmembers' responses to the mental health consultants. Even though the corpsmembers and staff seemed to have the same type of response strategy, they still do not agree on content or issues.

This second distribution tends to suggest that the three groups, mental health consultants, staff, and corpsmembers, do not agree with each other as to what constitutes a mental health need or problem as measured by the inventory. It is as if each group has its own opinion and the opinions are mutually exclusive of one another. It is

reminiscent of the blind men describing the elephant. Each group in its own way, is right while each is also wrong.

It can be hypothesized that the mental health consultants' knowledge of normal and abnormal behavior and of the needs and problems of individuals and groups is based on a philosophy(ies) and orientation(s) which can be thought of as characterized by certain sets of assumptions, principles, and behaviors. Within this theoretical framework, there exists a tendency to assume that the orientation not merely describes but produces the behavior. As long as this orientation is maintained, there is agreement about the meaning of the perceived behaviors in others. Conversely, any deviation in the orientation results in disagreement about the meaning of the perceived behaviors. The staff members, with overriding operational responsibilities view many of the items differently from the mental health consultants. Obviously, they are influenced by impact of day-to-day operations of a center. This can be seen specifically in the low obtained d' and d'_e scores for staff on the mental health consultant determined signal noise distributions and in the number of items which staff considered signal and noise in the second distribution. Category 5, substance abuse items are a specific example. Seemingly, a critical dimension which made an item a noise item for the mental health consultants, was the variable OFF. (Refer to Chapter 4, Table 18.) It could be argued that when a corpsmember is off campus this is free time and the corpsmember should be permitted to what he or she wants, within reasonable limits. Since corpsmembers are adolescents, it is also reasonable that they will experiment with substances. Thus, it is a "normal" activity of an

adolescent. However, what this orientation ignores is the residential aspect of Job Corps and the operational problems of trying to get a "bunch of intoxicated kids to bed," the in loco parentis aspect of staff's role, the potential illegalities of underaged youth buying substance, car accidents, etc. What can be added to this is then the third orientation of the corpsmembers.

This finding of disagreement among the three groups was a finding of the 1972 substance abuse study conducted in Job Corps. In that study, the corpsmembers, staff, and National Health Office all had differing perceptions of the amount, frequency, and type of substance abuse in Job Corps. That same basic disagreement can be seen in the mental health consultants', staffs', and corpsmembers' perceptions of mental health needs and problems.

In summary then, the mental health consultants seemed to view the inventory from a theoretical orientation derived from their clinical experiences. Corpsmembers and staff seemed to view the inventory as a "test", in which both groups tried to get as many "right" answers as possible. Additionally, the corpsmembers' age probably interacted with many of the items in terms of not considering many of the items as problems. Finally, the day-to-day operational concerns of staff members seemed to influence the manner in which the center staff responded to the inventory.

Extraneous Variables. The high FAR of corpsmembers and staff tend to suggest that these groups were responding to something other than the stimuli presented. A variable previously mentioned was the response strategies adopted by the various groups. Corpsmembers and

staff seemed to view the inventory as a "test" with right and wrong answers.

A second extraneous variable could possibly be the national unemployment rate. With unemployment for adolescents at 20% (and even higher for minority adolescents) there possibly could have existed an attitude of "what difference does this make?" A corollary to this might be an attitude of indifference by corpsmembers and staff. Staff might have viewed completing the inventory as an intrusion into an already busy and overworked schedule while corpsmembers possibly viewed the task as "something to do instead of going to class." In short, the completion of the inventory could have been viewed as having no immediate and concrete contingencies for them, so why take it seriously.

A final source of extraneous variables could be that some of the items are "poorly" written. However, this is not as glaring a weakness as initially suspected. Undoubtedly, some of the items could be misconstrued. However, what must be remembered is that the Signal detection model assumes that there is always some "overlap" between the noise and signal distributions. It might be recalled that three classes of items were written:

- (1) those items descriptive of a need or problem,
- (2) those items which were not descriptive of a need or problem,
and
- (3) items representing the overlap between (1) and (2) above.

The Signal Detection model assumes that some ambiguous questions are presented. Thus, it was intentional that some of the items be "poorly" written.

As a check on how well the inventory items were written, certain inferential statistics were utilized to determine the validity of the individual items. (Refer to Appendix E for item-by-item statistical analysis.) Since this analysis was not germane to the present investigation, the statistics were not reported in Chapters 3 and 4. Using Pearsons X^2 Test for Independence, the following breakdown of the significance of the respondents can be seen:

- (1) Twenty-nine (29) inventory items achieved statistical independence with $\alpha = .001$ to $.05$.
- (2) Twelve (12) items achieved statistical independence with $\alpha = .06$ to $.10$, and
- (3) Fifty-nine (59) items did not achieve independence (α greater than $.10$).

In short, 41 items achieved independence while 59 did not. This distribution, although not equal to, closely resembles the noise and signal distribution of 48 signal items and 52 noise items. Some of the "poorly" written items can thus be seen as "well" written noise items which force subtle discriminations between noise and signal items. In this sense, the inventory required "poorly written" questions which could be "correctly rejected."

Applicability of Signal Detection Model. The question arises, does the Signal Detection model apply to the questionnaire process, particularly given the accuracy scores and the paucity of agreement?

One must ask what would happen if Job Corps simply relied on the inferential statistical data exhibited in Appendix E. Given these results, programs could be funded and developed and offered to centers

for staff training or consultation. What success would these programs have? Without some measure comparable to a False Alarm Rate, the data is only a measure of a "signal", simply a measure of agreement to any presentation regardless of whether that item corresponds with "reality" or not.

The correspondence issue is of basic concern. Questionnaires are constantly developed and utilized in data collection procedures yet their validity (in a non-statistical sense) is often suspect. The issue reverts to Goldiamond's accuracy and semantic indicators. The inventory items when seen from the perspective of the inferential statistical data are merely semantic indicators. The item can be assumed to exhibit some "stimulus related experiential" factor. The Signal Detection analysis transforms these semantic indicators into accuracy indicators. The noise and signal populations define accuracy, not the statistical agreement.

In this sense, it must be answered that "Yes" the model is highly applicable to the questionnaire process. In fact, it could be argued that the model also fits the interviewing process by extension. Noise items, or "blanks", must be included in the questionnaire and interview process. The Minnesota Multiphasic Personality Inventory (MMPI) Lie (L) Scale begins to approach this. Although not thought of as traditional "noise" presentations, these items are in fact "blanks." A response of "Yes" to these items tends to invalidate the results of the MMPI, regardless of the achieved profile.

It can be concluded that the model does fit the questionnaire process. The low d's are not indicative of a paucity of results, merely

a reflection of lack of agreement of the respondents. The lack of agreement is something Job Corps has already experienced in other studies. It is simply corroborated in the current investigation.

IMPLICATIONS

Implications for Job Corps

It would seem that given the results and analysis of the study, there are at least two major implications for Job Corps.

The first of these is obvious. A disparity exists between the way in which mental health consultants view the mental health needs and problems of corpsmembers when compared to the manner in which center staff and corpsmembers evaluate these same needs. A corollary is that center staff and corpsmembers do not agree with each other either. The obvious concern is how any mental health program can be expected to achieve success when it seems obvious that the different groups do not rely on the same basic definition of terms.

Unfortunately it is difficult to evaluate which of the three groups is "out-of-sync." Is it that each group is partially right and partially wrong? Are the mental health consultants "too theoretical?" Do (especially) staff and corpsmembers lack the psychological sophistication to evaluate what actually constitutes a mental health problem or need? Or rather is the multiplicity of opinions "healthy", merely reflecting an "open" environment?

These questions are beyond the scope of this investigation but are certainly issues raised by the study. However, it is distressing that such a finding has been observed and "mutually exclusive opinions" have

been obtained. The 1972 Drug Study made similar conclusions about staff, corpsmembers, mental health dichotomies. Even if this multiplicity of opinions is "healthy", it must certainly make the administration of any coherent and consistent mental health policy and procedure extremely difficult. What must be questioned is the role which the National Health Office has in fostering, combating, continuing, this multiplicity of opinions within the mental health domain.

The second major implication for Job Corps is the role of the mental health consultant. Again, in reviewing the paucity of agreement in the results of the inventory, one must question how this occurs and what part the mental health consultant has in contributing to this. It seems obvious that the mental health consultants viewed the inventory as clinicians. Their lax criteria and preferences towards inclusion of most items would seem appropriate for clinical situations. What must be questioned is how appropriate is a "clinical" approach when "non-clinical" conditions are present. The approach of the mental health consultants seems to be one of removal of symptoms (birth control versus sex education) instead of assisting in the development of programs which foster mental health. Given that the majority of corpsmembers are typically "normal" adolescents, the use of a "clinical" approach becomes suspect. Even if one assumes that a "clinical" approach is appropriate, one would suspect that at least staff members would be trained in this approach and share some of the ideas and perceptions of the mental health consultants. However, this does not seem to be the case. Again, the role of the mental health consultant is beyond the scope of the present investigation. Given the quality

of the present results, it would seem that clarification and definition of the role of the mental health consultant is warranted.

CONCLUSIONS

The data support several conclusions. They are:

- (1) Mental health consultants, center staff, and corpsmembers are in basic disagreement as to what constitutes a mental health need or problem for corpsmembers;
- (2) That when these three groups do agree, it is only in regards to the corpsmembers' needs for privacy, personal safety, and financial security;
- (3) The use of a Signal Detection model is applicable to the questionnaire process;
- (4) The administration and management of the mental health program in Job Corps is (unnecessarily?) complicated by a lack of common definition of mental health needs and problems; and
- (5) The role of the mental health consultant in Job Corps needs to be expanded beyond one which is primarily clinical in nature to one which (a) fosters healthy development in "normal" adolescents and (b) is more actively involved in training staff and corpsmembers in the recognition and identification of mental health needs and problems.

FUTURE RESEARCH

The most obvious extension of the present study is to administer the inventory at a second Job Corps Center in order to compare the results. Or alternatively, to administer the inventory at most of the

centers in one of the geographic administrative regions of Job Corps. Would corpsmembers still disagree with the mental health consultants? and each other? Would the staff from one center agree with the staff from the second center more than with the mental health consultants?

A second study could investigate whether medical discharges for psychological reasons occur at centers more or less frequently where there is basic disagreement among the mental health consultants, staff, and corpsmembers regarding the nature of mental health problems and needs than at those centers where the three groups are in general agreement.

SUMMARY

The purpose of the study was to develop a Needs Analysis Inventory which could identify the mental health needs and problems of students enrolled in the United States' Department of Labor's Job Corps program. It is assumed that this inventory can provide more accurate information to Job Corp's National Health Office than the current methods by which the data are presently collected.

The procedures used in the development and analysis of data were that of a Signal Detection Model. Categories of needs and problems were derived from the results of a preliminary questionnaire administered to mental health consultants to Job Corps and the corpsmembers at one Job Corps Center. Three sets of inventory items were then developed. The first set reflected the broad categories of mental health needs and problems. Additional inventory items were developed which did not reflect the categories of needs and problems (blanks) while the third

set of items were intentionally ambiguous. The final inventory was administered to mental health consultants, center staff, corpsmembers, and a comparison group of high school students (total N = 116).

Hit Rates, False Alarm Rates, d' , d_e , β , Preference, and Accuracy were calculated for each group of respondents. On five of six categories of mental health needs and problems on the inventory, the mental health consultants, center staff, and corpsmembers did not agree as to what constitutes a mental health need or problem for corpsmembers. The multiplicity of opinions regarding the definition of mental health needs and problems in Job Corps is discussed as well as the administrative issues this raises for the National Health Office. Also, implications for the use of Signal Detection models in questionnaires (any by extension) the interview process are presented.

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APPENDIX A

535 North Ridgeland Avenue
Oak Park, Illinois 60302
April 11, 1980

Dr. Don DuBois
Job Corps, Health Staff
Room 6206
601 - D Street, N.W.
Washington, D.C. 20213

Dear Don,

Enclosed is the proposed schedule and budget for the Needs-Analysis/Problem Identification Inventory for Job Corps.

I would like to reiterate the importance and utility of such an inventory. Job Corps has traditionally relied on "casualty figures" as determined by medical and disciplinary discharges as a means of identifying problems and subsequently inferring needs of corpsmembers. The inadequacies of this approach are typified by the results of the Kleemeier and Moffat study (1980) of the learning disabled in Job Corps. That learning disabled corpsmembers exist is not surprising but that the average reading level for the population tested was the equivalent of a third-grade reading level was.

Third-grade reading levels of corpsmembers (at least at one center) underscores the deficiencies of relying upon the medical/pathological model for problem identification and needs analysis. The medical/pathological model chiefly relies on the removal (medical/disciplinary discharges) of problems. Given the population of adolescents serviced by Job Corps, the utility of this model becomes suspect.

Signal Detection Theory provides an alternative model to the traditional, pathological model currently utilized in Job Corps. Although initially and primarily still a laboratory procedure, Signal Detection models are increasingly being used in natural environments. Swets, et al (1979) use of a Signal Detection paradigm in a hospital setting is representative of the growing acceptance of this procedure.

- (c.) Potentially, a group of black, high school drop-outs living in a foster home as wards of the State of Illinois, and
 - (d.) a small (10-15) group of corpsmembers at the Cincinnati Job Corps Center.
5. Administer the inventory to approximately 50-75 corpsmembers and 25-40 staff members at the Cincinnati Job Corps Center during July, 1980.
 6. (Ideally), administer the completed inventory at one additional Job Corps Center in August, 1980.
 7. Final report filed in late September, early October 1980.

Points 4d., 5., and 6., will require that a consent form is signed by an individual acting in loco parentis for the corpsmembers. A suggested copy of the consent form is enclosed.

The pretesting of corpsmembers at the Cincinnati center (point 4d.) could be performed by a member of the counseling staff or the residential living staff. It is not important that I personally perform this.

Finally, testing the inventory at a second center (point 6.) could be performed in conjunction with a substance abuse training session.

I hope this addresses the major administrative concerns and I expect to hear from you soon. Thanks again,

Sincerely,

Edward J. Wygonik

APPENDIX B

NEEDS ANALYSIS QUESTIONNAIRE

The following items refer to the successful Job Corps graduate. The results will be used to formulate items for a needs analysis inventory for Job Corps.

Please indicate which items you feel best describe the successful, competent Job Corps graduate.

Use:

M if the item refers only to the male corpsmembers;

F if the item refers only to the female corpsmembers;

B if the item refers to both male and female corpsmembers.

Check as many items as you think apply.

1. What is the average age of the successful Job Corps graduate?

<input type="checkbox"/> under 17	<input type="checkbox"/> 20
<input type="checkbox"/> 17	<input type="checkbox"/> 21
<input type="checkbox"/> 18	<input type="checkbox"/> 22
<input type="checkbox"/> 19	<input type="checkbox"/> over 22

2. What is the average length of stay of the successful Job Corps graduate at the Job Corps Center?

<input type="checkbox"/> 0-3 months	<input type="checkbox"/> 9-12 months
<input type="checkbox"/> 3-6 months	<input type="checkbox"/> 12-15 months
<input type="checkbox"/> 6-9 months	<input type="checkbox"/> 15-18 months
	<input type="checkbox"/> over 18 months

3. Which of the following best describe the successful Job Corps graduate at your center?

<input type="checkbox"/> adaptive	<input type="checkbox"/> assertive
<input type="checkbox"/> relaxed	<input type="checkbox"/> self-confident
<input type="checkbox"/> calm	<input type="checkbox"/> capable
<input type="checkbox"/> good sense of humor	<input type="checkbox"/> sensible
<input type="checkbox"/> insightful	<input type="checkbox"/> integrated

7. The number of dependents which the successful corpsmember had to support at the time of graduation from Job Corps was:

<input type="checkbox"/> none	<input type="checkbox"/> spouse and two children
<input type="checkbox"/> spouse only	<input type="checkbox"/> spouse and more than two children
<input type="checkbox"/> spouse and one child	<input type="checkbox"/> parents
	<input type="checkbox"/> others

8. The relationships within the corpsmembers' family of origin seemed to be:

<input type="checkbox"/> warm and caring	<input type="checkbox"/> stable
<input type="checkbox"/> supportive	<input type="checkbox"/> disharmonious but functional
<input type="checkbox"/> conflicted	<input type="checkbox"/> dependable in crises
<input type="checkbox"/> destructive	<input type="checkbox"/> unable to assist corpsmember
<input type="checkbox"/> nonsupportive	<input type="checkbox"/> other _____

9. While at the Job Corps Center, the corpsmember's pattern of communication with others tended to be:

<input type="checkbox"/> minimal	<input type="checkbox"/> free and open
<input type="checkbox"/> superficial	<input type="checkbox"/> empathic and supportive
<input type="checkbox"/> circumstantial	<input type="checkbox"/> hostile
<input type="checkbox"/> indirect	<input type="checkbox"/> other _____

10. The successful corpsmember's attitude toward work was:

<input type="checkbox"/> apprehensive	<input type="checkbox"/> source of gratification
<input type="checkbox"/> excited	<input type="checkbox"/> no job gratification
<input type="checkbox"/> workaholic	<input type="checkbox"/> normally satisfying
<input type="checkbox"/> other _____	

11. Overall, the successful corpsmember's reaction to Job Corps was:

- | | |
|---|--|
| <input type="checkbox"/> a good adjustment | <input type="checkbox"/> culture shock |
| <input type="checkbox"/> has benefited | <input type="checkbox"/> conflicts with staff |
| <input type="checkbox"/> satisfying | <input type="checkbox"/> Job Corps was "last resort" |
| <input type="checkbox"/> realistic | <input type="checkbox"/> positive appreciation |
| <input type="checkbox"/> separation anxiety | <input type="checkbox"/> negative about termination |
| <input type="checkbox"/> conflicts with other
corpsmembers | <input type="checkbox"/> overdependence on staff |
| <input type="checkbox"/> other _____ | |

12. The successful Job Corps graduate's scholastic achievement was:

- | | |
|---------------------------------------|---|
| <input type="checkbox"/> excellent | <input type="checkbox"/> unsatisfactory |
| <input type="checkbox"/> satisfactory | <input type="checkbox"/> failing |

13. The successful corpsmember's emotional reactions to Job Corps included:

- | | |
|--------------------------------------|---|
| <input type="checkbox"/> anger | <input type="checkbox"/> undue anxiety |
| <input type="checkbox"/> guilt | <input type="checkbox"/> proud of accomplishments |
| <input type="checkbox"/> depression | <input type="checkbox"/> immobilized |
| <input type="checkbox"/> challenging | <input type="checkbox"/> pleased with self |
| <input type="checkbox"/> grateful | <input type="checkbox"/> realistic hopefulness |
| <input type="checkbox"/> grief | <input type="checkbox"/> appropriate anxiety |
| <input type="checkbox"/> apathetic | <input type="checkbox"/> other _____ |

14. The coping behaviors used by the successful corpsmember indicated that the corpsmember was:

- | |
|--|
| <input type="checkbox"/> was effectively handling stress |
| <input type="checkbox"/> resourceful |
| <input type="checkbox"/> adaptive |
| <input type="checkbox"/> had some interpersonal problems |

ineffectively handling stress

possessed adequate socialization skills

other _____

15. The successful corpsmember's understanding of his/her reason for being in Job Corps was:

adequate poor

partial needed time to comprehend

distorted unable to comprehend

well-formulated other _____

16. The successful Job Corps graduate was:

a group leader actively withdrew from groups

did not join groups a group member

passively withdrew from groups

17. The corpsmember's employment status at graduation was:

full-time

part-time

unemployed

other _____

18. The corpsmember's communication pattern seemed to indicate that the corpsmember was:

self-assured clarified issues or problems

inquisitive expressed needs

expressed feelings acceptable comprehension

heard accurately other _____

19. The corpsmember's relationships with others appeared to be:

- | | |
|---|---|
| <input type="checkbox"/> warm and caring | <input type="checkbox"/> mutually supportive |
| <input type="checkbox"/> independent | <input type="checkbox"/> disharmonious but functional |
| <input type="checkbox"/> nonsupportive | <input type="checkbox"/> distant and detached |
| <input type="checkbox"/> self-sustaining | <input type="checkbox"/> dependable |
| <input type="checkbox"/> dependable in crises | <input type="checkbox"/> able to meet others' needs |
| <input type="checkbox"/> other _____ | |
| <input type="checkbox"/> other _____ | |

20. The successful Job Corps graduate's ability to solve problems was:

- | |
|---|
| <input type="checkbox"/> immobilized |
| <input type="checkbox"/> needed time |
| <input type="checkbox"/> solved routine problems |
| <input type="checkbox"/> planned and functioned well even in crises |
| <input type="checkbox"/> solved problems with help from others |
| <input type="checkbox"/> planned unrealistically |
| <input type="checkbox"/> unable to accept help from others |
| <input type="checkbox"/> other _____ |
| <input type="checkbox"/> other _____ |

APPENDIX C

1. AT GRADUATION FROM JOB CORPS, CORPSMEMBERS SHOULD BE SINGLE OR NEVER MARRIED.
- DEFINITELY A NEED
 PROBABLY A NEED
 COULD BE A NEED
 POSSIBLY NOT A NEED
 PROBABLY NOT A NEED
 DEFINITELY NOT A NEED
2. SOME CORPSMEMBERS WILL OCCASIONALLY DRINK BEER OR WINE OFF CAMPUS (ONCE OR TWICE A MONTH OR LESS).
- DEFINITELY A PROBLEM
 PROBABLY A PROBLEM
 COULD BE A PROBLEM
 POSSIBLY NOT A PROBLEM
 PROBABLY NOT A PROBLEM
 DEFINITELY NOT A PROBLEM
3. CORPSMEMBERS NEED EXPLICIT INFORMATION IN BIRTH CONTROL PROCEDURES.
- PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 DEFINITELY A NEED
 COULD BE A NEED
 DEFINITELY NOT A NEED
 PROBABLY A NEED
4. SOMETIMES CORPSMEMBERS THINK THEY SHOULD BE ALLOWED TO SMOKE MARIJUANA BECAUSE THERE IS NO DOCUMENTED PROOF THAT IT IS DANGEROUS.
- PROBABLY NOT A PROBLEM
 POSSIBLY NOT A PROBLEM
 DEFINITELY A PROBLEM
 COULD BE A PROBLEM
 DEFINITELY NOT A PROBLEM
 PROBABLY A PROBLEM
5. CORPSMEMBERS SHOULD BE AWARE OF THREE DIFFERENT MEANS OF BIRTH CONTROL AND THE RELATIVE EFFECTIVENESS OF EACH.
- DEFINITELY NOT A NEED
 PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 COULD BE A NEED
 PROBABLY A NEED
 DEFINITELY A NEED
6. CORPSMEMBERS WHO CAN "HANDLE THEIR LIQUOR" (DRINK WITHOUT GETTING DRUNK) SHOULD BE ALLOWED TO DRINK OFF CAMPUS.
- PROBABLY A PROBLEM
 POSSIBLY NOT A PROBLEM
 DEFINITELY NOT A PROBLEM
 DEFINITELY A PROBLEM
 PROBABLY NOT A PROBLEM
 COULD BE A PROBLEM
7. SOME CORPSMEMBERS SMOKE MARIJUANA ONLY BECAUSE THEIR FRIENDS DO.
- DEFINITELY NOT A PROBLEM
 PROBABLY NOT A PROBLEM
 POSSIBLY NOT A PROBLEM
 COULD BE A PROBLEM
 PROBABLY A PROBLEM
 DEFINITELY A PROBLEM
8. CORPSMEMBERS NEED TO DEVELOP A RELATIONSHIP WITH AN ADULT STAFF MEMBER IN ORDER TO HAVE A SOURCE OF ADULT SUPPORT WHILE THEY ARE AT THE CENTER.
- PROBABLY A NEED
 POSSIBLY NOT A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 COULD BE A NEED
9. SOME CORPSMEMBERS WILL BRING BEER OR WINE ON CAMPUS EVEN THOUGH THEY KNOW IT IS AGAINST THE RULES.
- COULD BE A PROBLEM
 PROBABLY A PROBLEM
 DEFINITELY NOT A PROBLEM
 DEFINITELY A PROBLEM
 PROBABLY NOT A PROBLEM
 POSSIBLY NOT A PROBLEM
10. AT GRADUATION FROM JOB CORPS, IT IS IMPORTANT THAT A CORPS MEMBER BE REQUIRED TO FINANCIALLY SUPPORT HIMSELF OR HERSELF.
- COULD BE A NEED
 PROBABLY A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 POSSIBLY NOT A NEED

11. CORPSMEMBERS SHOULD BE ABLE TO DEFINE STRESS INCLUDING THE PHYSIOLOGICAL AND PSYCHOLOGICAL ASPECTS OF STRESS.
- DEFINITELY A NEED
 PROBABLY A NEED
 COULD BE A NEED
 POSSIBLY NOT A NEED
 PROBABLY NOT A NEED
 DEFINITELY NOT A NEED
12. SOMETIMES, THREE OR FOUR CORPSMEMBERS WILL BRING A SIX PACK OF BEER OR BOTTLE OF WINE INTO THE DORM ON A SATURDAY AFTERNOON AND DRINK ALL OF IT.
- DEFINITELY A PROBLEM
 PROBABLY A PROBLEM
 COULD BE A PROBLEM
 POSSIBLY NOT A PROBLEM
 PROBABLY NOT A PROBLEM
 DEFINITELY NOT A PROBLEM
13. OFTEN, CORPSMEMBERS WILL DRINK BEER OR WINE EVERY FRIDAY AND SATURDAY NIGHT, OFF CAMPUS.
- PROBABLY NOT A PROBLEM
 POSSIBLY NOT A PROBLEM
 DEFINITELY A PROBLEM
 COULD BE A PROBLEM
 DEFINITELY NOT A PROBLEM
 PROBABLY A PROBLEM
14. FREQUENTLY A CORPSMEMBER WILL BEGIN TO USE MARIJUANA DAILY.
- PROBABLY A PROBLEM
 POSSIBLY NOT A PROBLEM
 DEFINITELY NOT A PROBLEM
 DEFINITELY A PROBLEM
 PROBABLY NOT A PROBLEM
 COULD BE A PROBLEM
15. INFORMATION REGARDING THE MEANS OF OBTAINING AT LEAST TWO DIFFERENT TYPES OF BIRTH CONTROL SHOULD ROUTINELY BE MADE AVAILABLE TO ALL CORPSMEMBERS.
- PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 DEFINITELY A NEED
 COULD BE A NEED
 DEFINITELY NOT A NEED
 PROBABLY A NEED
16. SINCE MOST RULES ARE "MADE TO BE BROKEN" IT IS NOT IMPORTANT THAT CORPSMEMBERS FOLLOW THEM.
- PROBABLY A NEED
 POSSIBLY NOT A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 COULD BE A NEED
17. CORPSMEMBERS SHOULD LIKE THEIR SCHOOL WORK.
- COULD BE A NEED
 PROBABLY A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
18. ONCE IN AWHILE A CORPSMEMBER WILL SELL MARIJUANA TO HIS FRIENDS IN ORDER TO MAKE MONEY.
- COULD BE A PROBLEM
 PROBABLY A PROBLEM
 DEFINITELY NOT A PROBLEM
 DEFINITELY A PROBLEM
 PROBABLY NOT A PROBLEM
 POSSIBLY NOT A PROBLEM
19. SOME CORPSMEMBERS WILL DRINK HARD LIQUOR (BOURBON, GIN, VODKA, ETC.) EVERY FRIDAY AND SATURDAY NIGHT, OFF CAMPUS.
- DEFINITELY NOT A PROBLEM
 PROBABLY NOT A PROBLEM
 POSSIBLY NOT A PROBLEM
 COULD BE A PROBLEM
 PROBABLY A PROBLEM
 DEFINITELY A PROBLEM
20. ONCE OR TWICE A MONTH A CORPSMEMBER MIGHT SMOKE MARIJUANA.
- DEFINITELY A PROBLEM
 PROBABLY A PROBLEM
 COULD BE A PROBLEM
 POSSIBLY NOT A PROBLEM
 PROBABLY NOT A PROBLEM
 DEFINITELY NOT A PROBLEM

21. A CORPSMEMBER SHOULD BE TAUGHT TO VIEW OTHER CORPSMEMBERS AS A PRIMARY SOURCE OF SUPPORT WHILE THEY ARE AT THE CENTER.
- DEFINITELY NOT A NEED
 PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 COULD BE A NEED
 PROBABLY A NEED
 DEFINITELY A NEED
22. CORPSMEMBERS WILL OFTEN SMOKE MARIJUANA OFF CAMPUS AND ONLY ON WEEKENDS.
- PROBABLY NOT A PROBLEM
 POSSIBLY NOT A PROBLEM
 DEFINITELY A PROBLEM
 COULD BE A PROBLEM
 DEFINITELY NOT A PROBLEM
 PROBABLY A PROBLEM
23. IT IS NOT NECESSARY FOR CORPSMEMBERS TO DEMONSTRATE COMPETENCY IN THEIR SCHOOL WORK.
- DEFINITELY A NEED
 PROBABLY A NEED
 COULD BE A NEED
 POSSIBLY NOT A NEED
 PROBABLY NOT A NEED
 DEFINITELY NOT A NEED
24. IF A RULE "GOES AGAINST" A CORPSMEMBER'S PRINCIPLES, THAT CORPSMEMBER SHOULD NOT BE MADE TO FOLLOW THAT RULE.
- PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 DEFINITELY A NEED
 COULD BE A NEED
 DEFINITELY NOT A NEED
 PROBABLY A NEED
25. THREE OR FOUR CORPSMEMBERS BRING A FIFTH OF "HARD LIQUOR" (BOURBON, GIN, VODKA, ETC.) INTO THE DORM ON A SATURDAY AFTERNOON AND PROCEED TO DRINK THE ENTIRE BOTTLE.
- PROBABLY A PROBLEM
 POSSIBLY NOT A PROBLEM
 DEFINITELY NOT A PROBLEM
 DEFINITELY A PROBLEM
 PROBABLY NOT A PROBLEM
 COULD BE A PROBLEM
26. IN ORDER FOR A CORPSMEMBER TO GET THE MOST OUT OF JOB CORPS, IT IS IMPORTANT THAT THE CORPSMEMBER FOLLOW ALL THE RULES OF THE CENTER.
- PROBABLY A NEED
 POSSIBLY NOT A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 COULD BE A NEED
27. SOME CORPSMEMBERS WILL GIVE MARIJUANA TO OTHER CORPSMEMBERS.
- COULD BE A PROBLEM
 PROBABLY A PROBLEM
 DEFINITELY NOT A PROBLEM
 DEFINITELY A PROBLEM
 PROBABLY NOT A PROBLEM
 POSSIBLY NOT A PROBLEM
28. CORPSMEMBERS WHO ARE OF "LEGAL AGE" SHOULD BE ALLOWED TO DRINK OFF CAMPUS.
- DEFINITELY NOT A PROBLEM
 PROBABLY NOT A PROBLEM
 POSSIBLY NOT A PROBLEM
 COULD BE A PROBLEM
 PROBABLY A PROBLEM
 DEFINITELY A PROBLEM
29. SOME CORPSMEMBERS WILL OCCASIONALLY DRINK "HARD LIQUOR" (BOURBON, GIN, VODKA, ETC.) OFF CAMPUS, ONCE OR TWICE A MONTH OR LESS.
- DEFINITELY A PROBLEM
 PROBABLY A PROBLEM
 COULD BE A PROBLEM
 POSSIBLY NOT A PROBLEM
 PROBABLY NOT A PROBLEM
 DEFINITELY NOT A PROBLEM
30. CORPSMEMBERS NEED INFORMATION REGARDING THE KINDS OF STRESS WHICH THEY WILL UNDERGO WHILE AT THE CENTER.
- COULD BE A NEED
 PROBABLY A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 POSSIBLY NOT A NEED

31. IT IS IMPORTANT THAT CORPSMEMBERS ARE ABLE TO DETECT PROGRESS IN THEIR VOCATIONAL INTERESTS.
- DEFINITELY NOT A NEED
 PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 COULD BE A NEED
 PROBABLY A NEED
 DEFINITELY A NEED
32. CORPSMEMBERS SHOULD BE ABLE TO OUTLINE THE BASIC STEPS WHICH THEY USE IN ORDER TO ACHIEVE THE MAJOR GOALS WHICH THEY HAVE SET FOR THEMSELVES.
- DEFINITELY A NEED
 PROBABLY A NEED
 COULD BE A NEED
 POSSIBLY NOT A NEED
 PROBABLY NOT A NEED
 DEFINITELY NOT A NEED
33. CORPSMEMBERS SHOULD BE ABLE TO IDENTIFY HOW THEY ACT WHEN THEY ARE UNDER STRESS.
- PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 DEFINITELY A NEED
 COULD BE A NEED
 DEFINITELY NOT A NEED
 PROBABLY A NEED
34. CORPSMEMBERS MUST LEARN WHICH RULES OF THE CENTER CAN BE IGNORED AND WHICH RULES MUST ALWAYS BE FOLLOWED.
- PROBABLY A NEED
 POSSIBLY NOT A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 COULD BE A NEED
35. CORPSMEMBERS SHOULD BE ABLE TO STATE AT LEAST TWO DIFFERENT WAYS OF DEALING WITH STRESSFUL SITUATIONS.
- COULD BE A NEED
 PROBABLY A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
36. IF A CORPSMEMBER IS DOING WELL ACADEMICALLY AND VOCATIONALLY, IT IS NOT IMPORTANT THAT HE OR SHE FOLLOW THE RULES OF THE CENTER.
- DEFINITELY NOT A NEED
 PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 COULD BE A NEED
 PROBABLY A NEED
 DEFINITELY A NEED
37. CORPSMEMBERS MUST LEARN TO COOPERATE WITH PEOPLE WHOSE IDEAS ARE GREATLY DIFFERENT FROM THEIR OWN.
- DEFINITELY A NEED
 PROBABLY A NEED
 COULD BE A NEED
 POSSIBLY NOT A NEED
 PROBABLY NOT A NEED
 DEFINITELY NOT A NEED
38. CORPSMEMBERS SHOULD BE GIVEN THE OPPORTUNITY TO LEAD OTHERS DURING SOME PART OF THEIR CENTER LIFE.
- PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 DEFINITELY A NEED
 COULD BE A NEED
 DEFINITELY NOT A NEED
 PROBABLY A NEED
39. IT IS PARTICULARLY IMPORTANT THAT NEW CORPSMEMBERS COMPLETELY FOLLOW ALL THE CENTER RULES AND REGULATIONS.
- PROBABLY A NEED
 POSSIBLY NOT A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 COULD BE A NEED
40. CORPSMEMBERS SHOULD BE ABLE TO IDENTIFY A JOB OR SKILL WHICH THEY WILL FIND AS PERSONALLY SATISFYING.
- COULD BE A NEED
 PROBABLY A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 POSSIBLY NOT A NEED

41. SOMETIMES A CORPSMEMBER WILL SELL MARIJUANA TO ANOTHER CORPSMEMBER IN ORDER TO "COVER THE COST" OF BUYING IT.
- _____ PROBABLY NOT A PROBLEM
 _____ POSSIBLY NOT A PROBLEM
 _____ DEFINITELY A PROBLEM
 _____ COULD BE A PROBLEM
 _____ DEFINITELY NOT A PROBLEM
 _____ PROBABLY A PROBLEM
42. CORPSMEMBERS SHOULD BE ABLE TO STATE THE THINGS AND SITUATIONS WHICH THEY FIND AS STRESSFUL.
- _____ DEFINITELY NOT A NEED
 _____ PROBABLY NOT A NEED
 _____ POSSIBLE NOT A NEED
 _____ COULD BE A NEED
 _____ PROBABLY A NEED
 _____ DEFINITELY A NEED
43. CORPSMEMBERS SHOULD BE ABLE TO STATE AT LEAST TWO DIFFERENT PROCEDURES FOR IDENTIFYING PROBLEMS.
- _____ DEFINITELY A NEED
 _____ PROBABLY A NEED
 _____ COULD BE A NEED
 _____ POSSIBLY NOT A NEED
 _____ PROBABLY NOT A NEED
 _____ DEFINITELY NOT A NEED
44. WEEKLY SESSIONS WITH MEMBERS OF THE COUNSELING STAFF ARE NECESSARY FOR NEW CORPSMEMBERS DURING THEIR FIRST THREE MONTHS AT THE CENTER.
- _____ PROBABLY NOT A NEED
 _____ POSSIBLY NOT A NEED
 _____ DEFINITELY A NEED
 _____ COULD BE A NEED
 _____ DEFINITELY NOT A NEED
 _____ PROBABLY A NEED
45. TURNOVER OF CENTER STAFF HELPS CORPSMEMBERS TO LEARN TO LIVE IN THE "REAL WORLD."
- _____ DEFINITELY NOT A PROBLEM
 _____ PROBABLY NOT A PROBLEM
 _____ POSSIBLY NOT A PROBLEM
 _____ COULD BE A PROBLEM
 _____ PROBABLY A PROBLEM
 _____ DEFINITELY A PROBLEM
46. CORPSMEMBERS DISAPPOINTMENTS WITH CENTER LIFE USUALLY TAKES CARE OF ITSELF IN TIME.
- _____ COULD BE A PROBLEM
 _____ PROBABLY A PROBLEM
 _____ DEFINITELY NOT A PROBLEM
 _____ DEFINITELY A PROBLEM
 _____ PROBABLY NOT A PROBLEM
 _____ POSSIBLY NOT A PROBLEM
47. SOMETIMES CORPSMEMBERS WILL PURPOSELY DESTROY CENTER PROPERTY "FOR THE FUN OF IT."
- _____ PROBABLY A PROBLEM
 _____ POSSIBLY NOT A PROBLEM
 _____ DEFINITELY NOT A PROBLEM
 _____ DEFINITELY A PROBLEM
 _____ PROBABLY NOT A PROBLEM
 _____ COULD BE A PROBLEM
48. CORPSMEMBERS NEED ASSERTIVENESS TRAINING.
- _____ PROBABLY A NEED
 _____ POSSIBLY NOT A NEED
 _____ DEFINITELY NOT A NEED
 _____ DEFINITELY A NEED
 _____ PROBABLY NOT A NEED
 _____ COULD BE A NEED
49. CORPSMEMBERS SHOULD KNOW AT LEAST TWO DIFFERENT WAYS OF IDENTIFYING PROBLEMS.
- _____ COULD BE A NEED
 _____ PROBABLY A NEED
 _____ DEFINITELY NOT A NEED
 _____ DEFINITELY A NEED
 _____ PROBABLY NOT A NEED
 _____ POSSIBLY NOT A NEED
50. CORPSMEMBERS NEED TIME TO BE ALONE.
- _____ DEFINITELY NOT A NEED
 _____ PROBABLY NOT A NEED
 _____ POSSIBLE NOT A NEED
 _____ COULD BE A NEED
 _____ PROBABLY A NEED
 _____ DEFINITELY A NEED

51. ALTHOUGH OFTEN SEXUALLY ACTIVE, MANY CORPSMEMBERS STILL HAVE A LOT TO LEARN ABOUT PERSONAL RELATIONSHIPS.
- DEFINITELY A NEED
 PROBABLY A NEED
 COULD BE A NEED
 POSSIBLY NOT A NEED
 PROBABLY NOT A NEED
 DEFINITELY NOT A NEED
52. CORPSMEMBERS SHOULD BE TAUGHT HOW-TO-MEMORIZE IN ORDER TO IMPROVE THEIR STUDY HABITS.
- PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 DEFINITELY A NEED
 COULD BE A NEED
 DEFINITELY NOT A NEED
 PROBABLY A NEED
53. SOMETIMES A CORPSMEMBER WILL JUST FEEL WORTHLESS.
- COULD BE A PROBLEM
 PROBABLY A PROBLEM
 DEFINITELY NOT A PROBLEM
 DEFINITELY A PROBLEM
 PROBABLY NOT A PROBLEM
 POSSIBLY NOT A PROBLEM
54. FREQUENTLY A CORPSMEMBER FEELS THAT OTHER CORPSMEMBERS ARE OUT-TO-GET-HIM OR HER.
- DEFINITELY NOT A PROBLEM
 PROBABLY NOT A PROBLEM
 POSSIBLY NOT A PROBLEM
 COULD BE A PROBLEM
 PROBABLY A PROBLEM
 DEFINITELY A PROBLEM
55. CORPSMEMBERS SHOULD BE ABLE TO SPECIFY SPECIFIC GOALS WHICH THEY HOPE TO ACHIEVE WHILE THEY ARE AT THE JOB CORPS CENTER.
- PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 DEFINITELY A NEED
 COULD BE A NEED
 DEFINITELY NOT A NEED
 PROBABLY A NEED
56. IF A CORPSMEMBER IS DOING WELL IN A CLASS, THEN HE OR SHE SHOULD NOT HAVE TO GO TO THAT CLASS REGULARLY.
- PROBABLY A NEED
 POSSIBLY NOT A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 COULD BE A NEED
57. CORPSMEMBERS' EXPECTATIONS OF CENTER LIFE SHOULD CONFORM WITH THE ACTUAL CONDITIONS OF CENTER LIFE.
- DEFINITELY NOT A NEED
 PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 COULD BE A NEED
 PROBABLY A NEED
 DEFINITELY A NEED
58. CENTER STAFF TURNOVER EFFECTS CORPSMEMBERS.
- PROBABLY NOT A PROBLEM
 POSSIBLY NOT A PROBLEM
 DEFINITELY A PROBLEM
 COULD BE A PROBLEM
 DEFINITELY NOT A PROBLEM
 PROBABLY A PROBLEM
59. IT IS PARTICULARLY IMPORTANT FOR NEW CORPSMEMBERS TO COMPLETELY FOLLOW ALL THE CENTER RULES AND REGULATIONS.
- DEFINITELY A NEED
 PROBABLY A NEED
 COULD BE A NEED
 POSSIBLY NOT A NEED
 PROBABLY NOT A NEED
 DEFINITELY NOT A NEED
60. SOMETIMES WHEN CORPSMEMBERS ARE "HORSEING AROUND" THEY WILL DAMAGE OR BREAK CENTER PROPERTY.
- PROBABLY A PROBLEM
 POSSIBLY NOT A PROBLEM
 DEFINITELY NOT A PROBLEM
 DEFINITELY A PROBLEM
 PROBABLY NOT A PROBLEM
 COULD BE A PROBLEM

61. FREQUENTLY CORPSMEMBERS ARE AFRAID TO "SAY NO" TO A FRIEND BECAUSE THEY DO NOT WANT TO LOSE THAT FRIENDSHIP.
- DEFINITELY A PROBLEM
 PROBABLY A PROBLEM
 COULD BE A PROBLEM
 POSSIBLY NOT A PROBLEM
 PROBABLY NOT A PROBLEM
 DEFINITELY NOT A PROBLEM
62. CORPSMEMBERS SHOULD NOT HAVE TO WORRY ABOUT THE SAFETY OF THEIR PERSONAL BELONGINGS.
- PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 DEFINITELY A NEED
 COULD BE A NEED
 DEFINITELY NOT A NEED
 PROBABLY A NEED
63. IF TWO CORPSMEMBERS WANT, THEY SHOULD BE ALLOWED TO ENGAGE IN SEXUAL RELATIONS.
- PROBABLY A NEED
 POSSIBLY NOT A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 COULD BE A NEED
64. IT IS IMPORTANT THAT CORPSMEMBERS ARE PROUD OF THEIR SCHOLASTIC ABILITIES.
- COULD BE A NEED
 PROBABLY A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
65. CORPSMEMBERS SHOULD BE ABLE TO RECOGNIZE WHEN THEY ARE DEPRESSED.
- PROBABLY A NEED
 POSSIBLY NOT A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 COULD BE A NEED
66. SOME CORPSMEMBERS "HEAR VOICES" WHEN NO ONE IS TALKING.
- DEFINITELY NOT A PROBLEM
 PROBABLY NOT A PROBLEM
 POSSIBLY NOT A PROBLEM
 COULD BE A PROBLEM
 PROBABLY A PROBLEM
 DEFINITELY A PROBLEM
67. IT IS IMPORTANT THAT CORPSMEMBERS ARE PROUD OF THEIR WORK.
- COULD BE A NEED
 PROBABLY A NEED
 DEFINITELY NOT A NEED
 DEFINITELY A NEED
 PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
68. CORPSMEMBERS SHOULD BE TAUGHT HOW TO MAKE FRIENDS.
- DEFINITELY A NEED
 PROBABLY A NEED
 COULD BE A NEED
 POSSIBLY NOT A NEED
 PROBABLY NOT A NEED
 DEFINITELY NOT A NEED
69. IN ORDER TO GET THE MOST OUT OF THEIR TRAINING, CORPSMEMBERS SHOULD STAY AT THE CENTER FOR AT LEAST SIX MONTHS.
- PROBABLY NOT A NEED
 POSSIBLY NOT A NEED
 DEFINITELY A NEED
 COULD BE A NEED
 DEFINITELY NOT A NEED
 PROBABLY A NEED
70. CORPSMEMBERS SHOULD BE TAUGHT HOW TO END FRIENDSHIPS WITH PEOPLE WHOM THEY NO LONGER WANT TO BE FRIENDS.
- DEFINITELY A NEED
 PROBABLY A NEED
 COULD BE A NEED
 POSSIBLY NOT A NEED
 PROBABLY NOT A NEED
 DEFINITELY NOT A NEED

71. CORPSMEMBERS SHOULD BE TAUGHT TO EXPECT PERIODS OF DEPRESSION WHILE THEY ARE AT THE CENTER.
- DEFINITELY A NEED
 - PROBABLY A NEED
 - COULD BE A NEED
 - POSSIBLY NOT A NEED
 - PROBABLY NOT A NEED
 - DEFINITELY NOT A NEED
72. CORPSMEMBERS SHOULD BE ABLE TO DEMONSTRATE AT LEAST TWO DIFFERENT WAYS OF DEALING WITH STRESSFUL SITUATIONS.
- PROBABLY NOT A NEED
 - POSSIBLY NOT A NEED
 - DEFINITELY A NEED
 - COULD BE A NEED
 - DEFINITELY NOT A NEED
 - PROBABLY A NEED
73. CORPSMEMBERS OFTEN HAVE DIFFICULTY KNOWING WHAT THEY SHOULD STUDY, FOR A TEST.
- PROBABLY A PROBLEM
 - POSSIBLY NOT A PROBLEM
 - DEFINITELY NOT A PROBLEM
 - DEFINITELY A PROBLEM
 - PROBABLY NOT A PROBLEM
 - COULD BE A PROBLEM
74. CORPSMEMBERS NEED EXPLICIT INFORMATION AND INSTRUCTIONS IN THE CULTURAL NORMS OF HUMAN SEXUALITY.
- COULD BE A NEED
 - PROBABLY A NEED
 - DEFINITELY NOT A NEED
 - DEFINITELY A NEED
 - PROBABLY NOT A NEED
 - POSSIBLY NOT A NEED
75. CORPSMEMBERS PERSONAL BELONGINGS SHOULD BE KEPT IN A LOCKED CABINET.
- PROBABLY A NEED
 - POSSIBLY NOT A NEED
 - DEFINITELY NOT A NEED
 - DEFINITELY A NEED
 - PROBABLY NOT A NEED
 - COULD BE A NEED
76. OFTEN CORPSMEMBERS AGREE TO DO SOMETHING BECAUSE ALL THEIR FRIENDS ARE DOING IT.
- COULD BE A PROBLEM
 - PROBABLY A PROBLEM
 - DEFINITELY NOT A PROBLEM
 - DEFINITELY A PROBLEM
 - PROBABLY NOT A PROBLEM
 - POSSIBLY NOT A PROBLEM
77. IF A CORPSMEMBER IS WRONGLY ACCUSED OF SOMETHING, HE OR SHE CAN FEEL JUSTIFIED IN DESTROYING CENTER PROPERTY.
- DEFINITELY NOT A PROBLEM
 - PROBABLY NOT A PROBLEM
 - POSSIBLY NOT A PROBLEM
 - COULD BE A PROBLEM
 - PROBABLY A PROBLEM
 - DEFINITELY A PROBLEM
78. THE QUALITY OF THE CENTER STAFF IS OFTEN NOT APPRECIATED OR NOTICED BY THE CORPSMEMBERS.
- DEFINITELY A PROBLEM
 - PROBABLY A PROBLEM
 - COULD BE A PROBLEM
 - POSSIBLY NOT A PROBLEM
 - PROBABLY NOT A PROBLEM
 - DEFINITELY NOT A PROBLEM
79. CORPSMEMBERS' EXPECTATIONS OF THE CENTER'S EQUIPMENT AND FACILITIES SHOULD CONFORM WITH THE ACTUAL EQUIPMENT AND FACILITIES AT THE CENTER.
- DEFINITELY NOT A NEED
 - PROBABLY NOT A NEED
 - POSSIBLY NOT A NEED
 - COULD BE A NEED
 - PROBABLY A NEED
 - DEFINITELY A NEED
80. OFTEN CORPSMEMBERS WRITE GRAFFITI ON CENTER WALLS.
- PROBABLY NOT A PROBLEM
 - POSSIBLY NOT A PROBLEM
 - DEFINITELY A PROBLEM
 - COULD BE A PROBLEM
 - DEFINITELY NOT A PROBLEM
 - PROBABLY A PROBLEM

81. CORPSMEMBERS SHOULD BE ABLE TO STATE THE DIFFERENCE BETWEEN BEING ASSERTIVE AND BEING AGGRESSIVE.
- ___ PROBABLY A NEED
 ___ POSSIBLY NOT A NEED
 ___ DEFINITELY NOT A NEED
 ___ DEFINITELY A NEED
 ___ PROBABLY NOT A NEED
 ___ COULD BE A NEED
82. CORPSMEMBERS NEED A PLACE WHICH THEY CAN CONSIDER AS THEIR OWN.
- ___ PROBABLY NOT A NEED
 ___ POSSIBLY NOT A NEED
 ___ DEFINITELY A NEED
 ___ COULD BE A NEED
 ___ DEFINITELY NOT A NEED
 ___ PROBABLY A NEED
83. CORPSMEMBERS NEED EXPLICIT INSTRUCTIONS IN THE BIOLOGY OF HUMAN SEXUALITY.
- ___ DEFINITELY A NEED
 ___ PROBABLY A NEED
 ___ COULD BE A NEED
 ___ POSSIBLY NOT A NEED
 ___ PROBABLY NOT A NEED
 ___ DEFINITELY NOT A NEED
84. DURING THE FIRST MONTH AT A CENTER, CORPSMEMBERS OFTEN QUESTION IF THEY HAVE MADE A CORRECT DECISION BY JOINING JOBS CORPS.
- ___ COULD BE A PROBLEM
 ___ PROBABLY A PROBLEM
 ___ DEFINITELY NOT A PROBLEM
 ___ DEFINITELY A PROBLEM
 ___ PROBABLY NOT A PROBLEM
 ___ POSSIBLY NOT A PROBLEM
85. SOME CORPSMEMBERS "SEE PEOPLE" WHEN THERE IS NO ONE THERE.
- ___ PROBABLY NOT A PROBLEM
 ___ POSSIBLY NOT A PROBLEM
 ___ DEFINITELY A PROBLEM
 ___ COULD BE A PROBLEM
 ___ DEFINITELY NOT A PROBLEM
 ___ PROBABLY A PROBLEM
86. WHEN A CORPSMEMBER "ACTS CRAZY" (HEARS VOICES, ETC.) IT IS OFTEN UPSETTING TO HIS FRIENDS.
- ___ PROBABLY A PROBLEM
 ___ POSSIBLY NOT A PROBLEM
 ___ DEFINITELY NOT A PROBLEM
 ___ DEFINITELY A PROBLEM
 ___ PROBABLY NOT A PROBLEM
 ___ COULD BE A PROBLEM
87. A CORPSMEMBER SHOULD KNOW HOW TO SAY "NO" TO A FRIEND WITHOUT LOSING THAT PERSON'S FRIENDSHIP.
- ___ DEFINITELY NOT A NEED
 ___ PROBABLY NOT A NEED
 ___ POSSIBLY NOT A NEED
 ___ COULD BE A NEED
 ___ PROBABLY A NEED
 ___ DEFINITELY A NEED
88. IN ORDER TO GET THE MOST FROM THEIR TRAINING, CORPSMEMBERS SHOULD STAY AT A CENTER FOR AT LEAST ONE YEAR.
- ___ COULD BE A NEED
 ___ PROBABLY A NEED
 ___ DEFINITELY NOT A NEED
 ___ DEFINITELY A NEED
 ___ PROBABLY NOT A NEED
 ___ POSSIBLY NOT A NEED
89. CORPSMEMBERS NEED TO ATTEND ALL CLASSES.
- ___ PROBABLY A NEED
 ___ POSSIBLY NOT A NEED
 ___ DEFINITELY NOT A NEED
 ___ DEFINITELY A NEED
 ___ PROBABLY NOT A NEED
 ___ COULD BE A NEED
90. CORPSMEMBERS NEED TO KNOW WHY SOME OF THEIR FRIENDS "HEAR VOICES" OR "SEE THINGS" WHICH ARE NOT THERE.
- ___ PROBABLY NOT A NEED
 ___ POSSIBLY NOT A NEED
 ___ DEFINITELY A NEED
 ___ COULD BE A NEED
 ___ DEFINITELY NOT A NEED
 ___ PROBABLY A NEED

91. A CORPSMEMBER WILL SOMETIMES GET DEPRESSED AND NOT KNOW WHY.
- DEFINITELY A PROBLEM
- PROBABLY A PROBLEM
- COULD BE A PROBLEM
- POSSIBLY NOT A PROBLEM
- PROBABLY NOT A PROBLEM
- DEFINITELY NOT A PROBLEM
92. PRIVATE AREAS SHOULD BE PROVIDED FOR CORPSMEMBERS TO TALK WITH CENTER STAFF ABOUT PERSONAL PROBLEMS.
- DEFINITELY A NEED
- PROBABLY A NEED
- COULD BE A NEED
- POSSIBLY NOT A NEED
- PROBABLY NOT A NEED
- DEFINITELY NOT A NEED
93. A CORPSMEMBER WILL OFTEN NOT KNOW HOW TO STAND-UP FOR HIMSELF.
- DEFINITELY NOT A NEED
- PROBABLY NOT A NEED
- POSSIBLE NOT A NEED
- COULD BE A NEED
- PROBABLY A NEED
- DEFINITELY A NEED
94. BEFORE THEY ARRIVE AT THE CENTER, CORPSMEMBERS SHOULD BE TOLD HOW MUCH THEY WILL BE ACTUALLY PAID WHILE THEY ARE AT THE CENTER.
- DEFINITELY NOT A NEED
- PROBABLY NOT A NEED
- POSSIBLE NOT A NEED
- COULD BE A NEED
- PROBABLY A NEED
- DEFINITELY A NEED
95. SOME CORPSMEMBERS TAKE A NAP DAILY BEFORE SUPPER.
- DEFINITELY NOT A PROBLEM
- PROBABLY NOT A PROBLEM
- POSSIBLY NOT A PROBLEM
- COULD BE A PROBLEM
- PROBABLY A PROBLEM
- DEFINITELY A PROBLEM
96. IF A CORPSMEMBER "ACTS CRAZY" (HEARS VOICES, ETC.) HIS/HER FRIENDS AND OTHER CORPSMEMBERS FROM THE DORM SHOULD BE GIVEN THE OPPORTUNITY TO TALK ABOUT IT.
- COULD BE A NEED
- PROBABLY A NEED
- DEFINITELY NOT A NEED
- DEFINITELY A NEED
- PROBABLY NOT A NEED
- POSSIBLY NOT A NEED
97. EVEN THOUGH IT IS DIFFICULT, CORPSMEMBERS MUST LEARN HOW TO "SAY NO" TO THEIR FRIENDS.
- PROBABLY A NEED
- POSSIBLY NOT A NEED
- DEFINITELY NOT A NEED
- DEFINITELY A NEED
- PROBABLY NOT A NEED
- COULD BE A NEED
98. SOME CORPSMEMBERS SEXUAL ORIENTATION IS HOMOSEXUALITY.
- PROBABLY A PROBLEM
- POSSIBLY NOT A PROBLEM
- DEFINITELY NOT A PROBLEM
- DEFINITELY A PROBLEM
- PROBABLY NOT A PROBLEM
- COULD BE A PROBLEM
99. INFORMATION REGARDING HOW TO OBTAIN ABORTIONS SHOULD BE PROVIDED TO ANY CORPSMEMBER.
- COULD BE A NEED
- PROBABLY A NEED
- DEFINITELY NOT A NEED
- DEFINITELY A NEED
- PROBABLY NOT A NEED
- POSSIBLY NOT A NEED
100. A CORPSMEMBER MIGHT THINK THAT THE ONLY WAY TO GET WHAT HE WANTS IS BY YELLING AND FIGHTING.
- COULD BE A PROBLEM
- PROBABLY A PROBLEM
- DEFINITELY NOT A PROBLEM
- DEFINITELY A PROBLEM
- PROBABLY NOT A PROBLEM
- POSSIBLY NOT A PROBLEM

APPENDIX D

APPENDIX

Responses to the inventory were analyzed using a traditional, inferential statistical model. Statistics included in this model were:

- (1) Pearson Chi-Square for Independence
- (2) Contingency Coefficient
- (3) Lambda Asymmetrical
- (4) Lambda Symmetrical
- (5) Kendall's Tau B
- (6) Pearson's R

The Statistical Package for the Social Sciences Sub-routine Crosstabs was utilized in the analysis. The analysis utilized the responses to each inventory item by status of the respondent (Mental Health Consultant, Corpsmembers, Staff, Control). Total N was 116.

Inventory Item Number	Pearson's χ^2		Contingency Coefficient	Lambda		Kendall's Tau		Pearsons R		
	15df	sig.		Asymmetrical Status Depend	Symmetrical Item# Depend	B	Sig	R	Sig.	
1	22.49	.09	.40	.10	.03	.06	.15	.03	.16	.04
2	23.16	.08	.41	.05	.04	.04	.07	.17	.06	.27
3	36.25	.01	.49	.09	.00	.04	.08	.14	.05	.30
4	31.05	.01	.45	.07	.04	.05	.15	.03	.12	.11
5	23.08	.08	.41	.00	.00	.00	.15	.03	.06	.23
6	24.80	.05	.42	.09	.09	.09	.18	.01	.13	.07
7	28.31	.02	.44	.09	.09	.09	.26	.01	.28	.01
8	28.66	.02	.45	.05	.12	.10	.15	.03	.16	.04
9	21.15	.13	.39	.07	.00	.04	.25	.01	.18	.02
10	17.71	.28	.36	.07	.06	.02	.03	.35	.02	.40
11	13.81	.54	.32	.00	.04	.02	.03	.35	.02	.40
12	8.76	.88	.27	.02	.05	.04	.07	.18	.03	.37
13	27.42	.03	.43	.04	.00	.02	.08	.16	.03	.37
14	16.28	.36	.35	.02	.00	.01	.19	.01	.15	.05
15	24.91	.05	.42	.00	.06	.03	.01	.44	.05	.28
16	22.33	.09	.40	.00	.02	.01	.07	.19	.03	.38
17	18.30	.25	.37	.02	.00	.01	.19	.01	.25	.01
18	19.78	.18	.38	.00	.02	.01	.07	.19	.01	.48
19	14.40	.49	.33	.05	.06	.06	.11	.07	.07	.20
20	24.21	.06	.42	.09	.07	.08	.01	.45	.02	.44
21	27.74	.02	.43	.09	.05	.06	.17	.02	.19	.02
22	36.41	.01	.48	.16	.07	.11	.16	.03	.06	.27
23	39.98	.01	.50	.20	.00	.09	.13	.06	.03	.36
24	15.57	.41	.34	.02	.06	.04	.08	.16	.06	.25
25	25.74	.04	.43	.11	.00	.05	.22	.01	.15	.05

Inventory Item Number	Pearson's χ^2		Contingency Coefficient	Lambda		Kendall's Tau		Pearsons R		
	15df	sig		Assymetrical Status Depend	Symmetrical Item # Depend	B	sig	R	sig	
26	20.52	.15	.39	.00	.02	.01	.17	.02	.17	.03
27	24.19	.06	.42	.05	.00	.02	.18	.01	.13	.07
28	26.86	.03	.43	.02	.10	.06	.16	.02	.17	.04
29	18.98	.21	.37	.00	.08	.05	.05	.23	.12	.09
30	15.62	.40	.35	.00	.00	.00	.17	.02	.14	.07
31	37.86	.01	.50	.05	.08	.06	.13	.06	.09	.17
32	26.65	.03	.43	.00	.04	.02	.04	.32	.04	.34
33.	21.95	.11	.40	.02	.03	.03	.06	.24	.01	.48
34	21.31	.13	.39	.05	.00	.02	.01	.44	.05	.27
35	26.86	.03	.43	.00	.08	.05	.04	.30	.01	.48
36	18.28	.25	.37	.04	.01	.02	.04	.33	.03	.36
37	25.40	.05	.42	.00	.05	.03	.02	.38	.09	.15
38	24.49	.06	.42	.13	.17	.15	.17	.02	.13	.09
39	20.94	.14	.39	.05	.02	.03	.15	.04	.09	.16
40	12.45	.65	.31	.00	.00	.00	.07	.21	.01	.46
41	18.38	.24	.37	.00	.04	.03	.11	.08	.09	.15
42	21.36	.13	.39	.05	.01	.03	.13	.05	.09	.18
43	18.03	.26	.37	.00	.04	.03	.07	.19	.03	.36
44	21.13	.13	.39	.00	.05	.03	.10	.10	.09	.18
45	34.16	.01	.48	.14	.05	.09	.27	.01	.20	.02
46	29.74	.02	.45	.05	.05	.05	.03	.33	.01	.45
47	19.27	.20	.38	.02	.00	.01	.18	.01	.19	.03
48	13.41	.57	.32	.00	.00	.00	.01	.46	.01	.45
49	16.58	.34	.35	.04	.00	.02	.10	.10	.07	.22
50	14.21	.51	.33	.00	.03	.02	.05	.28	.06	.25

Inventory Item Number	Pearson's x ²		Contingency Coefficient	Lambda		Kendall's Tau		Pearson's R	
	15df	sig.		Assymmetrical Status Depend	Symmetrical Item # Depend	B	sig	R	sig.
51	16.36	.36	.35	.00	.00	.14	.04	.07	.24
52	14.25	.51	.33	.00	.05	.08	.17	.07	.23
53	19.91	.18	.38	.04	.00	.08	.17	.12	.09
54	43.34	.01	.52	.00	.10	.19	.01	.15	.05
55	21.68	.12	.40	.00	.00	.11	.09	.10	.12
56	17.05	.31	.36	.07	.08	.02	.41	.01	.43
57	26.99	.03	.43	.07	.06	.08	.15	.06	.27
58	18.13	.26	.37	.00	.03	.07	.18	.01	.49
59	25.20	.05	.42	.00	.00	.11	.09	.08	.19
60	29.76	.01	.45	.02	.07	.06	.24	.04	.34
61	20.33	.16	.39	.00	.09	.04	.30	.07	.20
62	12.09	.67	.31	.00	.00	.06	.24	.09	.16
63	31.05	.01	.46	.05	.11	.08	.16	.01	.47
64	29.78	.01	.45	.03	.07	.03	.34	.10	.12
65	13.75	.54	.32	.00	.00	.09	.12	.15	.05
66	22.18	.10	.40	.00	.07	.12	.06	.10	.14
67	23.91	.07	.41	.00	.00	.14	.04	.06	.25
68	9.43	.85	.27	.00	.00	.05	.26	.03	.36
69	31.26	.01	.46	.04	.11	.06	.20	.01	.46
70	10.95	.76	.29	.00	.05	.01	.47	.01	.42
71	15.18	.43	.34	.04	.06	.03	.34	.10	.13
72	11.25	.73	.28	.00	.01	.01	.42	.02	.42
73	25.77	.04	.43	.11	.09	.10	.08	.06	.24
74	16.70	.33	.35	.02	.09	.07	.19	.03	.37
75	12.01	.67	.31	.00	.00	.07	.19	.09	.15

Inventory Item Number	Pearson's χ^2 15df sig	Contingency Coefficient	Lambda Asymmetrical Status Depend	Lambda Symmetrical Item # Depend	Kendall's Tau B sig	Pearson's R R sig
76	17.31 .30	.36	.00	.03	.12 .07	.13 .08
77	24.18 .06	.41	.04	.13	.21 .01	.20 .01
78	8.84 .89	.27	.00	.01	.05 .27	.07 .23
79	21.56 .12	.40	.00	.01	.05 .25	.05 .28
80	17.14 .31	.36	.04	.07	.06 .21	.14 .16
81	14.23 .51	.33	.00	.03	.01 .47	.02 .43
82	12.57 .64	.31	.00	.00	.11 .09	.12 .10
83	14.23 .51	.33	.00	.03	.04 .30	.01 .45
84	9.94 .82	.28	.00	.00	.03 .36	.04 .33
85	20.05 .17	.38	.02	.05	.10 .10	.10 .14
86	13.13 .59	.22	.00	.00	.08 .15	.09 .17
87	16.12 .37	.35	.00	.00	.16 .02	.10 .16
88	25.08 .05	.42	.07	.08	.10 .10	.17 .04
89	26.73 .03	.43	.00	.06	.01 .43	.01 .45
90	16.29 .36	.35	.00	.03	.17 .02	.18 .02
91	34.94 .01	.48	.04	.10	.18 .01	.24 .01
92	16.00 .38	.35	.02	.00	.04 .31	.01 .50
93	19.99 .17	.38	.02	.07	.10 .11	.08 .20
94	19.26 .20	.38	.00	.00	.09 .14	.03 .37
95	16.39 .36	.35	.00	.11	.02 .38	.06 .25
96	14.21 .51	.33	.04	.04	.14 .04	.14 .06
97	19.96 .17	.38	.00	.02	.14 .04	.16 .04
98	21.80 .11	.40	.02	.09	.01 .43	.07 .22
99	12.65 .63	.31	.00	.08	.06 .22	.05 .29
100	17.31 .31	.36	.00	.02	.05 .29	.03 .38

APPROVAL SHEET

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Date

April 23, 1981

Director's Signature

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