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Identifying Precipitating Events Leading to Rehospitalization among the Psychiatrically Disabled: A Levels Model of Social Perception

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IDENTIFYING PRECIPITATING EVENTS LEADING TO REHOSPITALIZATION AMONG THE PSYCHIATRICALLY DISABLED: A LEVELS MODEL OF SOCIAL PERCEPTION

by

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To my parents for their encouragement, belief, and pride,

Shirley Lund Turpin

Howard Armstrong Turpin

and to the memory of Joan Marie Radvak, for her devoted

friendship and joy of life

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VITA

The author, Robin S. Turpin, is the daughter of Howard A. Turpin and Shirley L. Turpin. She was born May 27, 1957 in Chicago, Illinois.

Her elementary and secondary education was obtained in the public schools of Hoffman Estates, Illinois, and she subsequently graduated from James B. Conant High School in 1975.

In June, 1975, she entered William Rainey Harper College majoring in Biology. While at Harper College, she sat on the Student Senate, was a Peer Counselor, a member of Phi Theta Kappa Honor Society, and was elected to Who's Who Among Students at American Junior Colleges. She graduated in May, 1977 with the degree of Associate of Science.

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INTRODUCTION

Objectives

Mass deinstitutionalization and the expansion of community-based treatment has been widely accepted as both a more humane and a more ethical mode of treating the psychiatrically disabled. Community-based treatment additionally has shown itself to be far less costly than hospitalization in the wake of monumental treatment costs and rapidly disappearing funds available for care of the mentally ill (Witheridge, 1978). While the most seriously disturbed individuals still face hospitalizations lasting several years, most individuals seeking psychiatric care require only short emergency rehospitalizations. It is these latter individuals who form the core of the clientele that is seen in halfway houses, community mental health centers, and day treatment programs. And it is these individuals who return to the hospital time and again, becoming increasingly dependent on the mental health system. For such persons, the future becomes less hopeful as chronicity deepens, while each successive rehospitalization increases the possibility of additional future rehospitalizations.

In an extensive review of studies using hospital readmissions as a criterion variable, a 40-50% recidivism rate was found within a one year period following psychiatric discharge (Anthony, Buell, Sharrat & Althoff, 1972). Further studies suggest rehospitalization rates range from 15% at three months to 75% at five years after discharge (Miller, 1967). According to Freeman and Simmons (1963):

> The doors of the hospital are...used by both the sick and the well - and (are) revolving doors at that. If the goal of the hospital is merely the temporary dismissal of patients, then perhaps the problem of hospital treatment has been fairly well solved...fewer beds may be needed, but the patients keep them warm for each other (p 5).

Clearly there is a need to understand what draws the psychiatrically disturbed to the hospital time after time. Yet the data at our disposal that may help us to identify "causes," e.g., case histories and qualitative reports, are difficult to analyze through quantitative procedures. Indeed, because of the difficulty in interpreting these data, they often remain unused. This is the crux of our problem: can we organize these data into a meaningful schema? If so, this organized schema becomes both a useful clinical feedback tool, and a means for understanding and predicting relapse among this population by the use of sophisticated multivariate statistical procedures. Furthermore, an additional hypothesis may be posed. Perhaps it is not merely the presence of events or characteristics that may lead an individual to relapse, but the individual's perceptions of their seriousness. Thus, one further goal may be to determine if this perceived seriousness affects relapse. The reasoning behind the two goals of (a) organization of clinical data, and (b) detecting if perceived seriousness leads to relapse, has been searched for throughout the literature and is expounded below.

Background

While clinicians have historically identified events leading to rehospitalizations in a descriptive way, e.g., suicide attempts, researchers have concentrated on identifying correlations between certain quasi-independent variables, e.g., demographics or the presence of life stressors, and the increased probability of rehospitalizations. Most of these studies were conducted over 10 years ago, and there has been little research focus of late in this problem area. Yet despite these handicaps, these data can be useful in identifying general trends or particular problem issues.

Demographics. Rehospitalizations appear to be strongly associated with psychiatric history, including number and duration of previous hospitalizations especially during the previous three years (Arthur, Ellsworth & Kroeker, 1968), and age at first hospitalization (Rosen, Klein, & Gittleman-Klein, 1971; Zigler & Levine, 1981).

Despite the significant correlations between these demographic variables and probability of rehospitalization, there is a striking disadvantage in using them as a sole criterion for predicting success in remaining out of the hospital. These variables, because of their historical nature, are insensitive to change as the intervention continues. For example, age of first hospitalization remains constant for successful and unsuccessful individuals. Because of this disadvantage, changes leading from an attempted intervention go undetected. It is impossible to change the past. Therefore, while demographics are useful to describe a population, their very nature restricts their usefulness for evaluative purposes. Although it is

conceivable that certain demographic variables may suggest correlated variables that are changeable, e.g., an early first rehospitalization may result in limited educational opportunities due to time lost while in the hospital and this may be changed, it is beyond the scope of this study to explore these possible correlations.

Life Stressors. Ilfeld (1976) conducted 2,299 interviews with normal adults with respect to number and intensity of life stressors. Respondents were each scored according to the Psychiatric Symptoms Index (PSI), identifying such symptoms as depression, anxiety, anger, and cognitive disturbance. Commencement and duration of both stressor and symptoms were determined. The results produced a significant trend for the stressors to be present prior to and during the time the symptoms were present. This suggests that the presence of life stressors among the general population leads in a significant number of cases to the presence of psychiatric symptoms.

A recent research focus has been on the presence of life stressors prior to an actual rehospitalization. It has been repeatedly found that there are differences in both number and type of stressors when comparing a normal population to a schizophrenic population (Fontana, Marcus, Noel, & Rakusin, 1972; Jacobs & Meyers, 1976).

In the Jacobs and Meyers study, 62 hospitalized schizophrenics were compared to 62 unhospitalized normals with respect to stressors. Highly significant results reflect 3.2 stressors the year before hospital admission for schizophrenics, and 2.1 stressors for normals during the same time frame. In total, the hospitalized schizophrenics

identified 50% more life stressors in their lives prior to their hospitalizations.

Not all research in this area has produced similar results. Joe, Miller, and Joe (1979) failed to find significant differences in number of stressors when comparing subjects with high and low levels of psychiatric symptoms. However, they did find that subjects who reported stressors out of their control were more likely to exhibit psychiatric symptoms than those who considered stressors within their control. This finding suggests that perhaps it is not the nature of the event or the number of events preceding a rehospitalization, but how the individual perceives the event that may eventually contribute to a rehospitalization. In short, there may be differences in the individual's perception and reaction to the same event. Individuals exhibiting severe psychiatric symptoms appear to perceive events as externally caused, while individuals experiencing less severe symptoms or without symptomology, appear to perceive these same events as internally caused (Joe, Miller, & Joe, 1979). Thus, individuals with more severe symptoms exhibited less confidence in regard to their control over life stressors, and believed themselves to be "helpless" in regards to them.

Several researchers have found this phenomena of learned helplessness or hopelessness among schizophrenics just prior to relapse (Luborsky & Averbach, 1969; Schmale, 1972). Helplessness is described by a variety of behaviors: giving up quickly, learning slowly, and in general, being less able to improve one's own situation. Individuals are said to learn these behaviors from a

history of perceived failures and/or inability to control life outcomes. Luborsky and Averbach (1969) in examining speech samples of patients in psychoanalysis, found expressions of helplessness more pronounced when taken just before instances of momentary forgetting. Thus, evidence of this type of helplessness has been found directly before a temporary episode of mild symptomology.

A study of hospitalized schizophrenic patients and normal controls (Jacobs & Meyers, 1976), reported that the death of a pet produced the greatest stress for schizophrenics before hospital admission. This event was not rated as particularly stressful for the normal controls. Thus, it appears that the individual perceptions of stressors for hospitalized schizophrenics and non-hospitalized normals are significantly different. Simply put, the event for each group was the same, but the perceptions of the event were strikingly different. This suggests that the number and type of stressors in a schizophrenic's life are not the critical variables to predict rehospitalization.

These results may reflect a methodological problem associated with studying life event stressors. It is uncertain whether both the event or its perceived seriousness and the hospitalization are a product of the same disturbed system. For example, a rehospitalization may directly follow the loss of a job, leading one to identify the job loss as the cause of rehospitalization. But it is entirely possible that both the rehospitalization and the job loss could be the result of the individual's disturbed system. The individual may have neither adequate coping skills needed to (a)

retain a job, nor (b) deal with a job loss. Another individual may have adequate vocational coping skills to be able to deal with job loss effectively, but also may have a tendency to develop symbiotic relationships. Thus, the loss of a pet and the subsequent loss of this important symbiotic relationship may eventually lead to a rehospitalization for this second individual. The concept that it is the perceived stressfulness of a situation that determines relapse has been examined in a number of ways by several theorists.

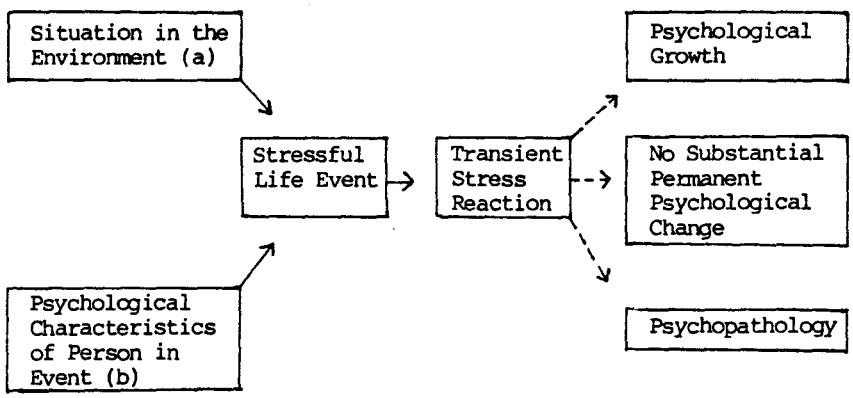
Dohrenwend (1978) has developed a model of the stress process that partitions stressful life events into two distinct concepts, (a) the influence of the environment; and (b) the psychological characteristics of the central person in the event. This relationship is illustrated in Figure 1.

Following the onset of the stressful event, a distinction is made between the stimulus that initiates the response and the reaction to the stimulus. Psychological reactions vary widely, ranging from mood changes to symptoms of psychotic disorders. Dohrenwend stresses that while these reactions are by their very nature of limited duration, they may be perpetuated by secondary gains or rewards. These may include feelings of uniqueness or need for attention.

The individual with strong social supports may face a crisis with a less severe reaction than the "vulnerable" schizophrenic with a lesser ability to utilize existing support systems. The final step in the model illustrates the transient stress reaction interacting with the situational and psychological factors to produce three possible outcomes. First, the best possible result is that the individual may

FIGURE 1

Dohrenwend Stress Model



experience psychological growth. Second, the individual may emerge from the situation without any notable change in capabilities or lifestyle. Last, the individual may develop self-sustaining psychopathology. Consequently, this worse possible outcome may result in relapse.

Dohrenwend does not indicate the likelihood of occurrence of each alternative. However, common sense suggests that both situational mediators (crisis intervention, social support) and psychological mediators (coping abilities) play a key role in the determination of the final outcome.

A similar theory has been suggested by Zubin and Spring (1977). According to their Vulnerability Theory, they

> "(assume) that exogenous and/or endogenous challengers elicit a crisis in all humans, but depending on the intensity of the elicited stress and the threshold for tolerating it, that is, one's vulnerability, the crisis will either be contained homeostatically or lead to an episode of disorder" (p 103).

Thus they suggest that each of us has a degree of vulnerability that under suitable circumstances will elicit a schizophrenic episode. Vulnerability may be the product of several factors, ranging from a genetic predisposition to acquired influences, such as traumas, disease, perinatal complications, family experiences, adolescent peer interactions, and other stressful life events.

The psychiatrically disabled as a highly vulnerable person, finds numerous stresses encountered in daily living the basis of an episode. Others have such a low degree of vulnerability that even a catastrophy would produce only a brief and fleeting episode. According to Zubin

and Spring, predicting relapse involves several variables, (a) the normatively perceived severity of the life event stressor, (b) the individual's perception of the severity of the stressor, (c) the general competence of the individual, (d) the coping efforts expressed by the individual, and (e) the vulnerability of the individual. While the first condition is a reflection of cultural norms, the second, third, and fourth are applications of learned helplessness.

In relation to these models of perceived control, one goal of this study was to provide a test of the assumption of "vulnerability" or perceived control as a factor in relapse. Zubin and Spring believe the vulnerability model may have far-reaching consequences in the mental health community. If staff at mental health centers and agencies see clients/patients as vulnerable individuals rather than "mentally ill," two important benefits may ensue.

First, the "vulnerability" label (as opposed to "mentally ill") is undoubtably the easier one with which to cope. "Vulnerability" implies a time-limited episode granting a lesser degree of abnormality rather than a life-long, and perhaps incurable condition of insanity. Scheff (1966) has argued that the social fact of labeling is the single most important element in establishing an individual in a lifelong career of schizophrenia or any other "social deviance." Once the individual has been labelled "mentally ill," a large number of social contingencies are realized. Each of these factors play an important role in cementing the label to the individual in the eyes of the community, and in those of the individual. The individual may be rewarded for retaining and indeed perfecting his role of

"schizophrenic," and punished for attempts to escape his new role. Most importantly, since the well-known stereotyped behaviors associated with "crazy people" are exhibited by the individual at some point, he or she is more suggestible, and therefore, more willing to accept the new-found role of schizophrenic (Scheff, 1966).

A second consequence of the vulnerability model mirrors the objectives of this project and has implications for changing treatment strategies with the mentally ill. If staff regards clients and patients as "vulnerable" in lieu of "disturbed," they may be able to protect them against the stressors that elicit episodes. Furthermore, there may be differences in how clients and social workers perceive the stressors leading to relapse. Professionals may need to change their views of clients, but may also need to change their views of what "causes" relapse. Of course, the client is not necessarily "correct" in identifying the causes of relapse: they react according to how they perceive the causes, and not how the professional perceives the causes. So in order to help clients remain outside the hospital, the professional needs to help the client to change the perceptions of causation.

Furthermore, this model may help clients perceive their episodic breaks as "vulnerabilities" to specific external, unstable, and uncontrollable causes. Weiner and his coworkers have developed a schema (1972, 1979) classifying attributions of causes into eight components. Accordingly, four components of Weiner's Model (mood, ability, typical effort, and immediate effort) are related to qualities of the individual while the remaining four describe properties of the

external environment (bias from others, unusual help from others, task difficulty, and luck). Furthermore, four components are long-term characteristics (ability, bias from others, task difficulties, and typical effort) and four are variable (mood mediators, immediate effort, luck, and unusual help from others). Thus these eight components can be placed in a 2 x 2 x 2 table (see Table 1) consisting of the three dimensions of (a) locus of control (internal versus external), (b) degree of stability (stable versus unstable), and (c) controllability (uncontrollable versus controllable).

The Locus of Control and Stability dimensions have frequently been confounded in the previous literature, i.e., the effects of an internal, stable, controllable attribute compared to those of an external, unstable, and uncontrollable attribute. For example, it has been argued by Weiner (1972) that the belief in luck as an unstable, external, uncontrollable event enables the unsuccessful individual to preserve self-esteem, thus creating a defense system following failure. For example, failure or the occurrence of an unpleasant situation for the "normal" population is frequently attributed to external, unstable conditions, e.g., "my new shoes are ruined due to an unexpected rainstorm." When the normal population experiences a success, an internal, stable and controllable attribution is made, e.g., "I got the job because I am intelligent and personable." Yet the "vulnerable" schizophrenic, void of the usual defense system, regards the causes for the same situations inappropriately as external, unstable, and uncontrollable, e.g, "the devil created a rainstorm to ruin my new shoes because he wishes me to be ridiculed."

TABLE 1

WEINER MODEL OF ATTRIBUTION

	LOCUS OF CONTROL			
	Internal		External	
	Stable	Unstable	Stable	Unstable
CONTROLLABILITY				
Uncontrollable	Ability	Mood	Task Difficulty	Luck
Controllable	Typical Effort	Immediate Effort	Bias From Others	Unusual Help From Others

Successes are likewise attributed to external cause, e.g., "I got the job because my boss knows I will mess it up and then he can have the fun of humiliating me in front of everyone." These inappropriate attributions lead to feelings of helplessness or hopelessness. The end result is often a psychotic break.

Whalen and Henker (1976) contend that when hyperactivity in children is treated with a drug, the belief is conveyed both to the child and the parents that hyperactivity is not within the control of the individual, but occurs because of some physiological dysfunction. Perceiving this cause as uncontrollable minimizes negative evaluations of the child (i.e., the child is spoiled or naughty). However, this also must weaken the perceived possibility of recovery. Depression and feelings of (learned) helplessness may similarily result from a perceived uncontrollable influence. Depressed individuals perceive evidence that their actions cannot affect the outcomes of an uncontrollable situation.

Summary

Thus far, this paper has presented the key studies and models found in the literature developed to identify and organize causes of rehospitalization. Several studies have found that the presence of certain, specific demographic variables or life stressors could predict relapse. However, it was Jacobs and Meyers (1976) who suggested that it is not the stressors, but the individual's perceptions of the stressfulness of the events that determines how severely he or she will be affected. Dohrenwend (1978) further

developed this concept into a model partitioning the environment effects from the psychological characteristics and capabilities of the individual. Thus, we find that the interaction of the individual and the environment may yield greater insight into causation of relapse.

Zubin and Spring (1977), further suggest that each of us are psychiatrically "vulnerable" to certain, specific stressors. The psychiatrically disturbed may then be described as a highly vulnerable person who finds numerous stressors encountered in daily living the basis of a negative episode. Weiner (1979) sees the interaction of the environment and psychological forces as an application of attribution theory. He believes that relapse is a product of three distinct concepts; (a) controllability, (b) stability, and (c) internal/external locus of control. Thus, the disturbed individual is more likely to regard external and internal events in a way that is different and makes less logical sense in our world.

The model this paper proposes to study embodies the key elements of earlier models: (a) the interaction of the physical environment and the psychological self, and (b) the individual's perceptions of seriousness of stressors, with a third concept (c) identifying multiple causations. This later model schematizes not only this interactionary process, but is capable of identifying multiple causations of rehospitalizations and perceptual dimension. Previously, relapses were assumed to occur due to one primary cause, e.g., death of a parent. This model does not rehospitalizations have

single stress origins. Rather, they are seen as the product of an intricate web of interpersonal, psychological, environmental, and/or biological issues and effects.

It is the goal of this study to explore this model as a schema by which to identify all the possible causes of a psychiatric relapse, whether surface or underlying, or perceived as serious or non-serious of a psychiatric relapse. Further, key stressors in the lives of rehospitalied and non-rehospitalized individuals, each of whom experience a stressful situation, will be determined in an attempt to identify stressors most likely to lead to relapse.

AN EXPLANATORY MODEL QUANTIFYING PRECIPITATING EVENTS LEADING TO REHOSPITALIZATIONS

Conception of the Model

This model was conceived and developed as a result of a study funded through the Illinois Department of Mental Health. In this study, clients and social workers were interviewed shortly after rehospitalization of clients to determine cause of the relapse. It became clear that in nearly every instance more than one precipitating event was an important and valid factor in the rehospitalization. For example, many rehospitalizations were the result of a suicide attempt. Yet a suicide attempt did not occur at random; some stressful event or events lead the client to attempt suicide. There was a wide range of variables identified, from the concrete "job loss," to the abstract "inability to cope."

The explanatory model acknowledges that there can be several valid precipitating events leading to rehospitalizations. It provides a method that schematizes causation so that we can better understand the vulnerability of the individual.

Four distinct "levels" of events are identified in the model, distinguished primarily by the time lag between event and rehospitalization. These time lags range from zero time, e.g., immediate rehospitalization following a suicide attempt, to several years, e.g., tendencies toward self-destructive actions. A more specific description of these four levels follows.

Level I, Immediate Precipitating Events, are the most urgent and the most drastic events (a nonexhaustive listing of events is provided in Figure 2). Psychiatric rehospitalization is often preceded by one of these events. Examples are suicide attempts or gestures, drug overdoses, violent behaviors, and sudden onset of symptoms. Note that these are sudden events that lead to direct, immediate rehospitalizations. A suicide attempt for instance, generally leads to an immediate rehospitalization with little or no time lag between realization of the event (by family, self) and admittance to the hospital. However, occasionally an individual who experiences an immediate event will not become rehospitalized. Hospitalization depends upon enviromental influences as well, e.g., availability of a bed in a psychiatric ward or willingness of the family to assume responsibility for the individual. Yet in general, if an individual experiences an immediate precipitating event, that individual will be rehospitalized.

Level II, Short-Term Precipitating Events, are not as immediate as Level I events, but nonetheless are short-term difficulties (see Figure 3.) The time lag between these events may be several hours to several weeks. For example, drug abuse is by its very nature a short-term event. The abuse is neither as sudden as an overdose, nor is it as long-term as actual drug dependency. Thus, this drug abuse may contribute to rehospitalization within a short period of time. Job loss is an event that, while stressful under even the most supportive conditions, does not generally lead to immediate rehospitalizations. If a rehospitalization should occur due to this

FIGURE 2

LEVEL I: IMMEDIATE PRECIPITATING EVENTS

1. Suicide attempt or gesture.
2. Self-injury or self-abuse.
3. Violent behaviors or abusiveness towards others or inanimate objects.
4. Acting out behaviors (e.g., social nuisance or public disturbance).
5. Sudden onset of symptoms (e.g., acute anxiety, or delusions).
6. Drug overdose.
7. Alcohol intoxication.
8. Other (specify _____ _____).

FIGURE 3

LEVEL II: SHORT TERM PRECIPITATING EVENTS

1. Medication noncompliance.
2. Medication adjustment.
3. Alcohol abuse.
4. Drug abuse.
5. Loss of or change in relationship (parent/boy/girlfriend).
6. Worker or therapist change, termination, or vacation.
7. Recent loss of or additional responsibilities.
8. "Broke" or unusual financial difficulties.
9. Intolerable living situation or inadequate housing.
10. Job or placement loss.
11. Unusual or recent pressure to succeed.
12. Suicide ideation.
13. Recent physical ailments.
14. Gradual onset of symptoms (e.g., anxiety or delusions).
15. Other (specify _____
_____).

job loss, it will occur within days or weeks of the loss - not immediately.

Level III, Long-Term Precipitating Events, take place over greater periods of time (see Figure 4). For example, a poor living situation, e.g., unhappiness with accomodations at a halfway house, is a much more long-term issue than the short-term difficulty of an intolerable living situation, e.g., recent incestual advances. Dealing with sexuality is a long-term stressor, while a breakup with a boyfriend or girlfriend is a short-term stressor.

Level IV, Personality Characteristics or Traits, are baseline issues within the personality makeup of the individual (see Figure 5). Self-destructive tendencies is a characteristic possessed by individuals for many years, if not a lifetime. This characteristic may be operationalized by such long-term predisposing experiences as drug addiction or remaining in a poor living situation.

Through extensive pilot testing, we have determined that there may be several stressors at each level with varying importance. Primary stressors are of such vital importance that the resulting relapse would not have occurred without their presence. Secondary stressors are usually connected in some way to the primary stressors, yet are usually not eventful enough to result in a relapse. For example, a primary short-term stressor leading to a suicide attempt may be a job loss, and the secondary short-term stressor may be "broke" - a condition that was the result of the job loss. Tertiary events are additional stressors that occurred without any connection to the more vulnerable primary or secondary stressors. In the above

FIGURE 4

LEVEL III: LONG-TERM PRECIPITATING EVENTS

1. Long-term and subtle medication side-effects.
2. Medication non-compliance.
3. Alcoholic or alcohol dependency.
4. Drug addiction or dependency.
5. Separation anxiety - parents or parental substitute.
6. Separation anxiety - therapist or worker.
7. Dealing with sexuality.
8. Developing friendships.
9. Constant shortage of cash.
10. Employment anxiety.
11. Poor living situation.
12. Responsibility anxiety (over inadequate providing for children, etc.).
13. Longstanding physical ailments.
14. Other (specify _____ _____).

FIGURE 5

LEVEL IV: PERSONALITY CHARACTERISTICS OR TRAITS

1. Unattainable self-expectations or goals.

2. Minimal stress tolerance or does not tolerate stress member surrounds life with.

3. Self-destructive tendencies.

4. Does not accept responsibility (e.g., external locus of control).

5. Does not release or develops symbiotic relationships (e.g., is over dependent).

6. Denies illness.

7. Does not control impulsiveness (e.g., poor coping skills).

8. Other (specify _____
_____).

example, the additional stressor of spraining an ankle may add to the individual's burden, but on its own would probably not directly cause a relapse. The following two case histories illustrate these concepts.

Case History 1

In February 1982, Rachel M. was hospitalized for three and one-half weeks following a near fatal suicide attempt. Although only in her late teens, Rachel had been hospitalized several times for similar attempts. Background information related to her rehospitalizations includes joining a psychosocial rehabilitation agency three months prior to this last episode. Two months later she moved into the agency's group home for young adults. While apparently well-liked, Rachel appeared chronically depressed and unsure of her acceptance at the agency and her new home.

Her father committed suicide several years earlier; the anniversary of his death usually triggered a suicide attempt on Rachel's part. In addition, she had a hostile and unstable relationship with her mother. Yet in spite of this, she was quite dependent on the little support her mother could, or would, give to her. Additionally, during this time she feared the loss of her sister, who was soon to have an operation. Rachel has a history of alcohol dependency and abuse, and was troubled by a constant chortage of cash.

The events leading to her suicide attempt were as follows: Rachel received a phone call from an old friend she met during a

previous rehospitalization. The caller, a client at the same agency, reinforced Rachel's fears - that Rachel was neither accepted or liked at the agency or the group home. Rachel believed this statement. Subsequently, after stealing a two-week supply of thorazine from her roommate and turning in her key to the house staff, she locked her room and swallowed the stolen medication.

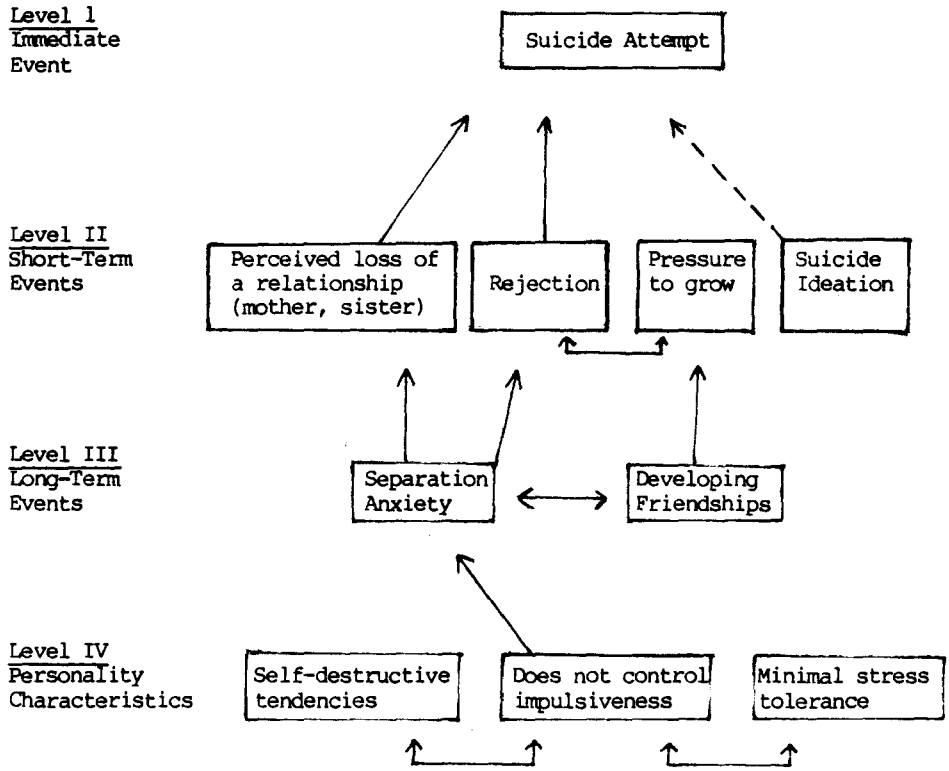
Using the model as a guide, these qualitative events and situations may be quantified, and a diagram of the dynamics may be produced, pinpointing areas of vulnerability. As shown in Figure 6, a suicide attempt was the single immediate precipitating event. This was the direct result of Rachel's increased, indeed overwhelming, feelings of rejection. She was particularly vulnerable to feeling rejected, in part because she has constantly received the same messages from her mother, and in part because she feared she would soon lose her sister. In addition, her recent move into the group home resulted in certain pressures and expectations, and she has often experienced a degree of suicide ideation.

In Level III terms, Rachel was particularly vulnerable to feeling rejected and abandoned, because she never fully separated from either her distant mother or her deceased father. This contributed to her perceived difficulty in developing and maintaining friendships.

For Level IV, Rachel had apparent difficulty in controlling impulsiveness. Her emotional ties to her parents stem from this immature behavior. In addition, self-destructive tendencies and minimal stress tolerance contributes to her lack of impulse control

FIGURE 6

RACHEL M.



From a systems view, it appears that Rachel had not separated from her deceased father or her hostile mother. Their percieved rejection made Rachel quick to perceive rejection from others. Her suicide attempt was a result of a build-up of these feelings that could no longer be tolerated.

Case History 2

Bill L. was a client in his late twenties at the same psycho-social rehabilitation center Rachel attended. The events leading up to his multiple suicide attempts, however, were of a different nature than Rachel's. Bill had always received a great deal of support from his parents, both financially and emotionally. He shared with his parents a number of high aspirations for himself, centering on attainment of a successful "normal" life. Chief among these goals was obtaining and keeping a steady job and a life more independent from his parents.

Since entering the agency, his parents applied increased pressure on him to succeed in the program. Bill accepted these goals. Along with the increased pressure came an intense fear on Bill's part that he would fail.

After Bill had attended the program for several months, the emotional support of his parents began to wear thin. They experienced extreme parental burn-out. His constant suicidal threats were regarded less seriously. Thus, on the day of Bill's rehospitalization, his suicide threats received an uncharacteristic reply from his mother. In desperation, she suggested to Bill various

methods by which to kill himself. Uncharacteristically also, he actually attempted two of these methods. This lead to his immediate rehospitalization.

For Bill, this rehospitalization lead directly from his multiple suicide attempts (see Figure 7). The attempts lead most importantly from two short-term events: (a) the increased pressure to succeed, and (b) change in his relationship with his parents. In addition, fear of failure was a short-term issue.

Dual long-term precipitaing events contributed equally to the short-term events: (a) separation anxiety from his parents, and (b) vocational stress. These events stem from the personality characteristic unattainable expectations.

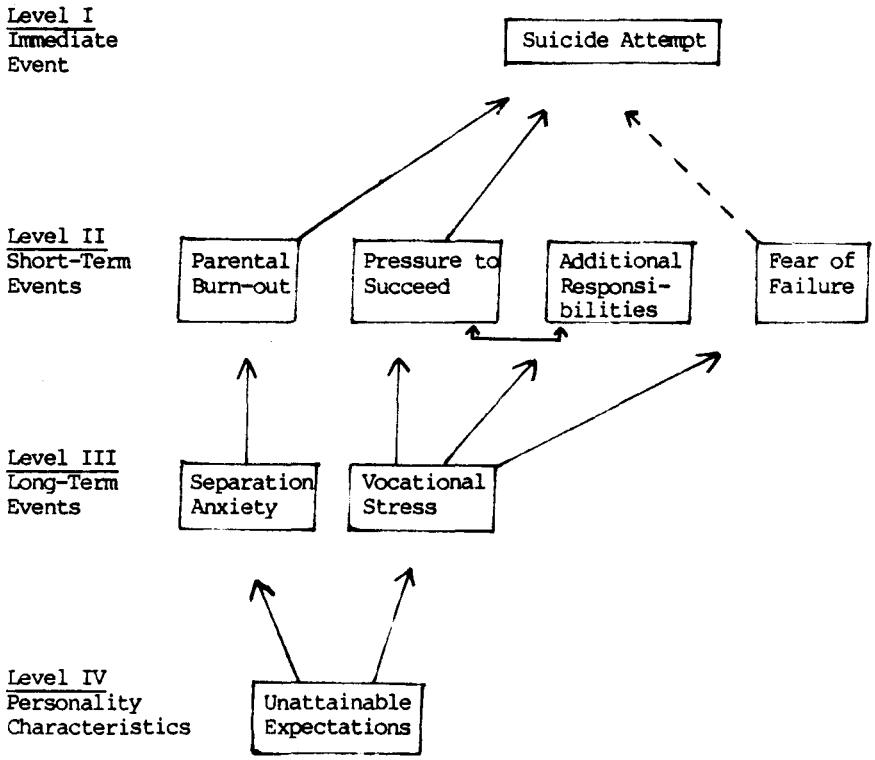
Systematically, Bill's suicide attempts sprang from two sources, both of wich were long-term issues that manifested themselves in short-term situation. These were (1) an intense dependent relationship between Bill and his parents and a subsequent desire to decrease the intensity of this relationship, and (2) a great deal of pressure to succeed in a job. Towards both goals, Bill and his parents moved too quickly, too soon. Their expectations were unattainable at the time. The pressure on Bill was too much to bear, and his suicide attempts led to a rehospitalization.

Implications of the Model

One further question suggested by the model may be posed. Are there common pathways, i.e., will particular Level IV events or Level III events lead to particular Level II events? This would appear to

FIGURE 7

BILL L.



make logical sense, perhaps especially for specific populations. For example, teenagers who are often rebellious regardless of psychiatric history, typically have difficulty separating from their parents and vice versa (a Level IV or Level III problem). This often leads to heated arguments and other interpersonal stressors. This, in turn, may lead to acting out behaviors, or suicide gestures, both of which are typical adolescent reactions. This is probably one of the most common pathways found in the pilot testing. However, with the limited number of cases, it was difficult to accurately predict further specific pathways. Another goal of this study was to explore these possibilities.

METHOD

Subjects

The study was conducted at three mental health agencies on the Near North and Far North Sides of Chicago between September, 1981 and April, 1983. Two types of data were collected: (a) self-report data in which subjects described stressors in their lives, and (b) informant data in which social workers reported stressors in the lives of their clients who had experienced a rehospitalization. One of the agencies used for data collection was a private psychosocial rehabilitation center (PRC); all of the informant data, and approximately half of the self-report data were collected from this agency. The remaining self-report data were collected at two Community Mental Health agencies (CMH). Informant data were not collected at these two CMH agencies for two reasons, (a) the structure of the programs (group support versus individual support provided at the PRC) made it difficult to collect these data without changing daily routines, and (b) the investigator already had an established relationship with the PRC, minimizing burden that the lengthy data collection process imposed. The investigator had no previous relationship with the two CMH organizations, and thus was unwilling to burden these agencies with such extensive and time consuming research commitments.

All three agencies were supported mainly by state, federal, and local funds, and offered both vocational and social rehabilitative services through workshops, group placement, and group and individual counseling. Clients generally attended for 30 to 40 hours each week,

Beginning with the second page were four lists, corresponding to the stressors described in the four levels of the model. Thus, List 1 asked respondents to check off the immediate precipitating events (Level 1) that occurred before the rehospitalization; List 2 asked for short-term events (Level 2) that occurred before events in List 1; List 3 asked for long-term events (Level 3) that occurred before List 2; and List 4 asked for personality characteristics or traits (Level 4) leading to the stressors in List 3. The instructions on page 2 also requested the respondent to identify important stressors for each list with a star (*), and the most important stressor at each level with two stars (**). However, subjects were rarely able to distinguish the importance of stressors, and so very few identified stressors with stars. In addition, at the end of each list subjects were asked to identify the length of the time between the stressors experienced in two consecutive levels e.g., between Level 1 and rehospitalization, or between Level 1 and Level 2. This was to verify the implicit "time" element of the model, e.g., the amount of time in hours or days between Level 1 and rehospitalization. However, once again the subjects rarely responded to these questions.

Beginning on page 5 of the instrument, questions reflecting internal/external locus of control were asked of respondents, e.g., the subjects were asked to identify whether "this situation came about mostly because of bad luck or fate," versus "this situation came about mostly because of me." The continum between the questions, such as between "somewhat because of me" and "mostly because of me," appeared

and supported themselves mainly by workshop earnings, Social Security, Social Security Disability Insurance, and through funds from the Illinois Department of Rehabilitation Services. Clientele of each agency were drawn from the same population, i.e., individuals who had been hospitalized for a psychotic disorder and sought rehabilitation services. The reasons why a client might seek the services of the psychosocial rehabilitation center (PRC) over the community mental health (CMH) agencies may have been due to a number of factors, including referral source, financial situation, location, or philosophical differences. Therefore the demographic variables previously thought to distinguish between sub-types of this population (e.g., age of first hospitalization, or number of previous hospitalizations), were evenly distributed among subjects at the three agencies.

Instruments

The two data collection instruments used in this study were based on the Levels Model. The first questionnaire, Life Stressors Leading to Rehospitalization or LSRQ (Appendix A) was a direct application of the Levels Model. Page one of this instrument listed a series of open-ended questions requiring the respondent to describe the stressful events occurring directly before his or her last rehospitalization, and whether something could have been done, or was done, to make the situation less frustrating. These questions were designed to tap internal and external locus of control, as described in the literature review.

too fine or sophisticated for this population. Of the few subjects who responded, an acquiesence response set prevailed.

Finally, on the seventh and last page, demographic questions (e.g., age, or number of previous hospitalizations) were asked of the respondents. These questions were intended to substantiate the claim that subjects from the three agencies were equivalent on these variables. Unfortunately, few subjects responded to these questions. It may be speculated that this was due to the frustration produced by the questions on page 6, and the subjects therefore gave up on the questionnaire before completing page 7, or perhaps due to a general loss of motivation or span of attention. In any case, the data collected were sparse.

The second instrument, The Life Stressors Questionnaire (LSQ) (Appendix B), consisted of instructions and questions identical to the LSRQ except that "rehospitalization" was changed to "frustrating situation." The instructions for List 1 were changed to "This list deals with the sudden or drastic events that may have occurred during this "frustrating situation."

Study Design

Three groups of approximately 65 persons each were used for this retroactive study. Data from these groups were intended to determine whether: (a) there was a difference in life stressors and perceptions of life stressors for clients who were hospitalized and clients who were not hospitalized, (b) whether there were differences in life stressors reported by clients compared to life stressors reported for

clients by misleading social workers or counselors, and (c) whether the Levels Model was a valid approach in identifying precipitating events prior to relapse.

Two groups were randomly selected from clients currently active in the three agencies. One group was administered the Life Stressors Leading to Rehospitalization (LSRQ). The other group received the Life Stressors Questionnaire (LSQ). Used in combination, these questionnaires were designed to discriminate between rehospitalized and non-rehospitalized clients by identifying stressors and perceptions of locus of control for stressors present when a crisis situation was experienced.

Self-report data may be misleading or inaccurate due to conscious or unconscious motives of the individual. For this reason, data on a third comparison group were collected. The Life Stressors Leading to Rehospitalization Questionnaire was used to collect data by social workers or counselors of rehospitalized clients. In monthly staff meetings the principal investigator of this project and the social workers assessed precipitating events leading to rehospitalizations, based on knowledge and clinical insight. In this way, a further comparison was made possible with respect to stressors; self reports of rehospitalized clients, and social worker reports of rehospitalized clients. It is important to note however, that the informant group was not matched to the self-report rehospitalized group as data from self-report groups were completely anonymous.

These three groups can be diagrammed simply (see Figure 8). It was hypothesized that significant differences between groups A and B

FIGURE 8

STUDY DESIGN

HOSPITALIZATION STATUS	TYPE OF REPORT	
	Self-Report	Informant Report
Rehospitalized	Group A n=61	Group C n=71
Non-Rehospitalized	Group B n=65	- - - -

would indicate that life stressors differ between clients who were rehospitalized and clients who were not rehospitalized. Any significant differences between A and C would be subject to alternative interpretations, e.g., there were differences in the instrument or in the procedure to collect data, or differences in the perceptions of clients and their social workers.

It must be understood that while this design was retrospective in nature, it was beyond the limited scope of this exploratory study to produce an elegant prospective design. As reported by Campbell and Stanley (1963), while retrospective data are subject to certain memory biases, until rigidly controlled experimental designs are executed, such data are "precious contributions" (p. 66).

Procedures

Informant data were collected on 71 rehospitalized clients at staff meetings occurring between September 1981 and September 1982. At these monthly meetings, rehospitalizations of clients that occurred since the last meeting were discussed. During the data collection period, the discussion was altered to conform to the questions on the LSRQ. It was reported by the social workers taking part in the study that the instrument became a useful clinical tool by structuring these reports that were previously casual and unstandardized in nature.

Data from the self-report LSRQ and LSQ were collected between January 1983 and April 1983. Each of the three agencies regularly held "community" meetings, where clients met to discuss further directions for the agency, and discuss problems with daily living.

This was not group therapy, but merely a group support and decision making session.

At these meetings the project was explained as an attempt to identify stressors in the lives of the agency clients. The two questionnaires were distributed to clients. Whether an individual received one or the other questionnaire was random. While the social workers did not help in the administration of the instrument, they remained present in order to assuage any nervousness on the part of the subjects if necessary. Response time varied between 15 minutes and one hour. Clients were told that they were not required to respond. Approximately 5-10% blank forms were returned from clients who refused to participate.

RESULTS

For the data analysis of an exploratory study such as this, exceptional planning is required to insure that analyses are logical and rational. The basic plan of the analyses, common in exploratory studies, was to show both divergence and convergence for each research question or issue by analyzing the data by several methods. If the results of each analytic method show similar trends among the data, there is evidence that the pattern of results is valid, consistent, and reasonably accurate. However, the reader should be reminded that individuals are "vulnerable" to stressors in an idiosyncratic way, and this is especially true for the psychiatrically disabled. While ideally this study would identify general trends among this population, this may not necessarily result. Instead, the data may not support any type of general trend. In this study, the stressors of the two similar rehospitalized groups were measured by the self-report and informant report methods, and therefore would be expected to converge toward similar results. The stressors of the dissimilar rehospitalized and non-rehospitalized groups were measured using the same instrument and would be expected to diverge and be dissimilar. Below are outlined the three research questions explored in this study, and the methods used for data analysis for each question.

Organization of Results

Are there differences in the types of stressors reported by rehospitalized and non-hospitalized clients? The first analysis method employs tables of crosstabulations that present percentages of individuals for whom the stressor was present for each of the two groups. Based on those percentages, Chi square analyses identify significant differences between groups for each variable. Certain trends can be identified through this series of crosstabulations. For the second method, discriminant analysis is used to identify the variables that differentiate between these two groups, and to reveal how successfully these variables can predict a rehospitalization. Finally, qualitative analysis is employed to identify differences between the two groups in terms of subjects' perceived control over life stressors (e.g, locus of control). Subjects' qualitative reasonings for causes of their rehospitalizations are identified as either primarily external or internal locus of control. Chi Square analyses indicate whether significant differences are found between the perceptions of the two groups.

Are there differences in the stressors reported by rehospitalized clients and those reported by social worker informants of rehospitalized clients? As in the first question, crosstabulations and discriminant analyses were performed on these two rehospitalized groups. However, because the informant data obviously contains no self-report qualitative data, qualitative comparisons are not possible.

Is the Levels Model a a reasonable approach to schematizing precipitating events? There are at least two ways of testing this question with the data available. Clearly a factor analysis may provide reasonable factors that indicate some sort of trend or pattern across levels (e.g., alcoholism leads to alcohol abuse). Second, a path analysis allows one to diagram the relationships or "paths" between individual variables by determining correlations between each variable and every other. The Levels Model postulates that there are certain general "paths" among variables (e.g., the "suicidal" path) and thus this analysis is an ideal way to test the validity of this assumption.

Preliminary Analysis

Before the results of the above analyses are discussed, it is necessary to describe an additional analytic step of importance. As noted, all possible precipitating events found in previous studies that could cause stress were included in the questionnaire to render it a complete research and clinical tool. However, the investigator felt that some of these variables chosen through prior research may be idiosyncratic and not useful in describing the population as a whole. A factor analysis would likely indicate those variables that were less important in the population. This preliminary factor analysis was performed using all three groups combined due to the large number of variables relative to the number of subjects. Factors with Eigenvalues equal or greater than 1.0 were subjected to varimax

rotation. Eighteen factors resulted. Within each factor, variables that obtained loadings closest to -1.0 or +1.0 relative to other variables within the factor were retained in subsequent analyses. Eight variables of the total 45 did not clearly fall in any factor and consequently were discarded. This elimination process increases the chances of finding results with less "noise" in the analyses. One should note that although these discarded variables may not be important to most subjects, they may be very important stressors to a limited number of subjects. The following is presented as a detailed description of the results of these varied analyses, and their relationship to the research questions.

Are there differences in the types of stressors reported by rehospitalized and non-rehospitalized clients?

It is reasonable to assume that divergence would be enhanced if these two dissimilar groups reported dissimilar stressors. After all, the two groups are dissimilar in that they are reporting stressors leading to two different events: a rehospitalization or a problem situation. If the answer to the above questions is yes, the relative importance of these stressors is different for rehospitalized and non-rehospitalized subjects. The first analytic step in answering this question was to compare the percentages of subjects in each group reporting the various stressors. These results are presented in Table 2. Accordingly, it is readily evident that the stressor most likely to be present for rehospitalized subjects is Immediate Onset of Symptoms (50.8%), followed by Being Broke (44.6%), Job Anxiety

TABLE 2

Percentage of Individuals for Whom Stressor is Present
Self-Report Rehospitalized and Non-Rehospitalized Subjects

VARIABLE	Rehosp. (n=61)	Non-Rehosp. (n=65)
IMMEDIATE PRECIPITATING EVENTS		
Onset of Symptoms	50.8%	75.4%
Abusive Actions	10.8	11.5
Public Disturbance	10.8	13.1
Drug Overdose	18.5	4.9
Intoxication	24.6	6.6
Abuse Self	6.2	8.2
Attempt Suicide	27.7	9.8
Other Immediate	21.5	24.8
SHORT-TERM EVENTS		
Job loss	26.2	27.9
Change Responsibilities	33.8	27.9
Broke	44.6	41.0
Change in Relationship	29.9	26.2
Change in Therapist	15.4	16.4
Change in Living Situation	33.8	21.3
Physical Problems	15.4	16.4
Pressure to Succeed	27.7	29.5
Gradual Symptoms	38.5	44.3
Drug Abuse	13.8	6.6
Alcohol Abuse	10.8	8.2
Medication Non-Compliance	13.8	16.4
Medication Adjustment	16.9	19.7
Suicide Ideation	26.2	23.0
Other Short-Term	15.4	23.0

TABLE 2 (Continued)

Percentage of Individuals for Whom Stressor is Present
Self-Report Rehospitalized and Non-Rehospitalized Subjects

VARIABLE	Rehosp. (n=61)	Non-Rehosp. (n=65)
LONG-TERM EVENTS		
Separation Anxiety/ Parents	20.0	26.3
Separation Anxiety/ Therapist	6.2	18.0
Sexuality	27.7	26.2
Develop Friendships	32.3	29.5
Cash Shortage	40.0	37.7
Job Anxiety	44.6	42.6
Poor Living Situation	35.4	25.9
Responsibility Anxiety	26.2	23.0
Physical Ailments	10.8	9.8
Drug Addiction	6.2	6.6
Alchoholism	9.2	8.2
Medication Non-Compliance	16.9	8.2
Medication Side Effects	10.8	14.8
Other Long-Term Problems	15.4	9.8
PERSONALITY CHARACTERISTICS		
No Impulse Control	29.2	31.1
Not Accept Responsibility	29.2	39.3
Can't Tolerate Pressure	42.6	35.4
Deny Illness	27.8	31.1
Unattainable Self-Expectations	23.1	21.3
Self-Destructive Behavior	20.0	26.2
Develop Dependency	24.6	26.2
Other Personality Characteristics	7.7	14.8

(44.6%), Can't Tolerate Pressure (42.6%), and Constant Cash Shortage (40.0%). The remainder of the variables are reported as present by less than 40% of subjects. It is also noteworthy to report the stressors occurring relatively rarely for rehospitalized subjects. Troubles with prescription medications, for instance (e.g., short-term Medication Non-Compliance or Medication Side Effects) only appear to be a stressor for 10.8%-16.9% of subjects.

In reference to Table 2 and non-rehospitalized clients, it appears that nearly the identical variables are reported as important stressors. Immediate Onset of Symptoms (75.4%), Gradual Onset of Symptoms (44.3%), Job Anxiety (42.6%), and Being Broke (41.0%) all are reported by over 40% of subjects. Once again, troubles with medication are consistently low in percentages relative to other stressors. It is also interesting to note a trend for the percentages to be higher for the rehospitalized clients than for the non-rehospitalized clients for Levels 1, 2, and 3, but lower for Level 4 personality traits.

Chi square analyses were used to compare the two groups with respect to individual variables. Of the 46 analyses, three were significant; Rapid Onset of Symptoms ($\underline{X}^2 = 9.1$, $\underline{p} < .01$) occurred more frequently for the self-report non-rehospitalized subjects, while Intoxication ($\underline{X}^2 = 8.3$, $\underline{p} < .01$), and Attempt Suicide ($\underline{X}^2 = 7.4$, $\underline{p} < .01$) occurred more frequently for self-report rehospitalized subjects. All three of these significant Chi Square analyses refer to immediate events: there were no short-term, long-term, or personality variables that produced significant differences between the two groups. The

reader should note that only those chi square analyses with a significance level of .01 are reported. Less stringent levels of significance would more likely result in the reporting of chi square analyses that were significant due to chance. In total, the two groups do not appear to be different based on crosstabulations and chi squares alone. After all, only three chi squares were significant to the .01 level. At this point, the data do not support the model.

This study was designed in light of the restrictions and benefits of discriminant analysis, a multiple regression technique which contrasts groups (in this case, rehospitalized and nonrehospitalized patients) on the basis of certain variables (in this case, stressors). Using the Wilks method, variables able to discriminate between groups were identified according to the overall difference between the centroids of each group, and the homogeneity within groups. Thus, this method tests for maximum differences between groups, and minimum differences within groups. Using this criterion, one or more functions can be produced that identify the relative importance of predictor variables in determining group membership (rehospitalized versus non-rehospitalized). For each function an F ratio is produced in order to determine statistical significance of this function in identifying differences between groups. Discriminant analysis also yields a classification table which applies the function to individual cases. Thus one can determine how well the function(s) correctly reproduce group membership.

The 45 closed-ended items on the check list were treated as discriminating variables in the analysis to produce the combination of

TABLE 3

STANDARDIZED CANONICAL DISCRIMINANT FUNCTION COEFFICIENT: VARIABLES DISCRIMINATING BETWEEN REHOSPITALIZED AND NON-REHOSPITALIZED CLIENTS

Variable	Coefficient
IMMEDIATE PRECIPITATING EVENTS	
Onset of Sudden Symptoms	-.45
Abusive Actions	-.23
Drug Overdose	.52
Intoxication	.41
Abuse Self	-.21
Suicide Attempt	.57
Other Immediate Event	.49
SHORT-TERM EVENTS	
Frustrating Living Situation	.33
Physical Problems	-.29
Other Short-Term Event	-.46
LONG-TERM EVENTS	
Separation Anxiety/Therapist	-.43
Responsibility Anxiety	-.19
Drug Addiction	-.56
Medication Non-Compliance	.41
Other Long-Term Problem	.34

variables most often identified by either the self-report rehospitalized or the self-report non-rehospitalized subjects. The *F* ratio for self-report rehospitalized and non-rehospitalized groups is 3.42 ($p < .01$). Thus, according to the discriminant analysis there is an overall difference between these two groups. Further, this significant function accounted for 32% of the variance. As shown in Table 3, the variables most able to discriminate between rehospitalized and non-rehospitalized groups are: Sudden Onset of Symptoms (-), Abusive Actions (-), Drug Overdose (+), Intoxication(+), Self Abuse (-), Suicide Attempt (+), Other Immediate Event (+), Frustrating Living Situation (+), Physical Problems (-), Other Short-Term Events (-), Separation Anxiety/Therapist (-), Responsibility Anxiety (-), Drug Addiction (-), Medication Non-Compliance(+), and Other Long-Term Problems (+). A positive sign indicates that the rehospitalized sample was more likely to check this item, while a negative sign indicates the non-rehospitalized group was more likely to check this item. The greater the absolute value of the coefficient, the greater the influence of the variable in the discriminant function.

In many instances with discriminant analysis an indication of how well the variables predict group membership lies in the classification tables. Based on an individual's "score" in terms of the variables in the discriminant function, "predictions" are made to each group to which he or she "belongs." Thus one can determine if the analysis discriminates between groups in a clinically helpful way. For example, when a client responds to the LSRQ, the clinician can judge

whether the client's stressors are more similar to those associated with rehospitalized subjects or to non-rehospitalized subjects. In this way, the clinician can predict relapse based on these stressors typically associated with rehospitalization. For this analysis, group membership was "predicted" correctly in 78.6% of cases ($\underline{X}^2$=6.87, $\underline{p}$ < .01).

The final analysis associated with differences between the self-report groups was qualitative. First, responses to the open-ended questions were copied onto index cards. Each card was then rated independently by two research personnel with regards to internal or external locus of control. Raters were not aware of the rehospitalization status of the individual. The inter-rater reliability coefficient of .87 illustrates excellent agreement. An example of an internal response is "I got into an argument with my Dad. I could have been less defensive and listened instead." An external response might be "Being in grade school my classmates didn't like me at all, they ignored me. My classmates could have treated me with love. They could have visited me." Because these responses were deemed informative and stimulating, they are included in their entirety in Appendix D.

Rehospitalized clients gave 78% of external responses compared to non-rehospitalized clients who gave 54% external responses. A chi square of 5.82 df=1 ($\underline{p}$ < .05) resulted from the comparison of internal/external locus of control and rehospitalization versus non-rehospitalization. This indicates that subjects who were rehospitalized were more likely to view the stressful condition as out

of their control, while individuals who were not rehospitalized viewed stressors as in their control.

How well do these analyses answer the original research question? At this point the two quantitative analyses do not reflect complete agreement. However this is not entirely surprising; variables found to discriminate best between groups are not necessarily the variables that are identified most often by subjects. Often the variable very few subjects identify is able to discriminate best because it only occurs for one group, or for a select number of subjects.

In addition, shared variance may account for some of the differences found between the two analyses. Discriminant analysis identifies variables as discriminating only to the extent that they contribute non-redundant or unique variance. For example, Suicide Attempt (27.7%) and Suicide Ideation (26.2%) are equally important stressors according to Table 2 crosstabulations. However, according to Table 3 discriminant function coefficients, Suicide Attempt (.57) is an important variable in discriminating between groups. Suicide ideation was not found to discriminate between groups. This is probably due to the shared variance of these two variables: individuals who idealize suicide also attempt suicide. Therefore, there is nothing to be gained by using both these variables to predict rehospitalization. Despite these drawbacks in comparing the two types of analyses, in the end the discriminant function is able to to predict rehospitalization for 78.6% of subjects, signifying good predictive qualities. In addition, the qualitative analysis indicates that there are significant differences in how rehospitalized and non-

rehospitalized subjects view causality of their problems. In sum, one can conclude that there are some real differences between the rehospitalized and the non-rehospitalized self-report groups, both in stressors and most importantly, in perception of causality of these stressors.

Are there differences in the types of stressors reported by rehospitalized clients and those reported by informants of rehospitalzed clients?

In turning our interest to comparing self-report versus informant report data of the two "rehospitalized" groups, one can again find some interesting and significant differences in the crosstabulations. In this instance, we might expect to find no differences; the measures are different, but each group is reporting stressors involved in a rehospitalization. However, if there are differences in outcome, there must be differences in the knowledge or perspectives of the two groups, or measurement error, or all three. Looking at Table 4, Change in an Important Relationship (60.6%), Other Short-Term Stressor (49.3%), Separation Anxiety/ Parents (47.9%), and Developing Dependent Relationships (42.3%) each are identified by over 40% of informants as important stressors. This differs greatly from the self-report rehospitalized clients. The most frequently mentioned stressors reported by clients were Being Broke (44.6%), Having a Constant Cash Shortage (40.0%), Job Anxiety (44.6%), and Can't Tolerate Pressure (42.6%). Based on crosstabulations, one can find a trend for social worker informants to identify interpersonal and dependency issues as

TABLE 4(Continued)

Percentage of Individuals for Whom Stressor is Present
Rehospitalized Clients/Informant Group and Self-Report Group

VARIABLE	Self-Report (n=61)	Informant (n=65)
LONG-TERM EVENTS		
Separation Anxiety/ Parents	20.0	47.9*
Separation Anxiety/ Therapist	6.2	14.1
Sexuality	27.7	14.1
Develop Friendships	32.3	25.4
Cash Shortage	40.0	18.3*
Job Anxiety	44.6	19.7*
Poor Living Situation	35.4	21.1
Responsibility Anxiety	26.2	15.5
Physical Ailments	10.8	4.2
Drug Addiction	6.2	14.1
Alchoholism	9.2	11.3
Medication Non-Compliance	16.9	22.5
Medication Side Effects	10.8	2.8
Other Long-Term Problems	15.4	12.7
PERSONALITY CHARACTERISTICS		
No Impulse Control	29.2	36.6
Not Accept Responsibility	29.2	31.0
Can't Tolerate Pressure	42.6	36.6
Deny Illness	27.8	31.0
Unattainable Self-Expectations	23.1	81.0
Self-Destructive Behavior	20.0	28.2
Develop Dependency	24.6	42.3
Other Personality Characteristics	7.7	11.3

* $p < .01$

TABLE 4

Percentage of Individuals for Whom Stressor is Present
Rehospitalized Clients/Informant Group and Self-Report Group

VARIABLE	Self-Report (n=61)	Informant (n=71)
IMMEDIATE PRECIPITATING EVENTS		
Onset of Symptoms	50.8%	21.1*
Abusive Actions	10.8	11.3
Public Disturbance	10.8	13.1
Drug Overdose	18.5	7.0
Intoxication	24.6	1.4*
Abuse Self	6.2	7.0
Attempt Suicide	27.7	28.2
Other Immediate	21.5	14.1
SHORT-TERM EVENTS		
Job loss	26.2	1.4*
Change Responsibilities	33.8	27.9
Broke	44.6	14.1*
Change in Relationship	29.9	60.0*
SHORT-TERM EVENTS (Continued)		
Change in Therapist	15.4	12.7
Change in Living Situation	33.8	14.1*
Physical Problems	15.4	4.2*
Pressure to Succeed	27.7	25.9
Gradual Symptoms	38.5	22.5
Drug Abuse	13.8	15.5
Alcohol Abuse	10.8	21.1
Medication Non-Compliance	13.8	32.4
Medication Adjustment	16.9	16.9
Suicide Ideation	26.2	11.3
Other Short-Term	15.4	49.3*

* $p < 0.1$

stressors important to their clients rehospitalizations, while the clients themselves view problems as either self oriented (e.g., Job Anxiety) or other/environmental directed (e.g., Constant Shortage of Cash).

The chi square analyses that statistically compare those stressors reported by subjects and those reported by the social worker informants were performed. For 15 of the 45 variables there are significant differences between the two groups. Onset of symptoms ($\underline{X}^2$ = 13.5, $\underline{p} < .01$), Intoxication ($\underline{X}^2$ = 16.5, $\underline{p} < .01$), Job Loss ($\underline{X}^2$ = 17.8, $\underline{p} < .01$), Being Broke ($\underline{X}^2$ = 14.7, $\underline{p} < .01$), ($\underline{X}^2$ = 7.5, $\underline{p} < .01$), Physical Problems ($\underline{X}^2$ = 8.1, $\underline{p} < .01$), Cash Shortage ($\underline{X}^2$ = 7.2, $\underline{p} < .01$), and Job Anxiety ($\underline{X}^2$ = 8.9, $\underline{p} < .01$), were mentioned more frequently by the Self-Report Rehospitalized group as important stressors, and Change in an Important Relationship ($\underline{X}^2$ = 12.7, $\underline{p} < .01$), Other Short-Term Problems ($\underline{X}^2$ = 15.7, $\underline{p} < .01$), and Separation Anxiety/Therapist ($\underline{X}^2$ = 11.7, $\underline{p} < .01$), were identified more often by social worker informants than clients as important events or issues.

It should be noted that nine of the 15 variables with significant differences are short-term problems, while the other three levels have three or fewer significant variables in each. There is also a slight trend for more variables to be identified in Levels 1, 2, and 3 than for Level 4 personality variables. Finally, it is note worthy that in general, clients were also more likely to identify events than were informants.

The discriminant analysis for this question was intended to determine whether the method of data collection (self-report versus

Table 5

STANDARDIZED CANONICAL DISCRIMINANT FUNCTION COEFFICIENTS: VARIABLES DISCRIMINATING BETWEEN SELF-REPORT REHOSPITALIZED AND SOCIAL WORKER REPORT DATA FOR REHOSPITALIZED CLIENTS

Variable	Coefficient
IMMEDIATE PRECIPITATING EVENTS	
Sudden Onset of Symptoms	-.18
Create a Public Disturbance	.27
Intoxication	-.27
Attempt Suicide	.33
Other Immediate Event	.24
SHORT TERM EVENTS	
Job Loss	-.27
Being Broke	-.23
Change in and Important Relationship	.72
Physical Problems	-.32
Gradual Symptoms	.20
Alcohol Abuse	.16
Medication Non-Compliance	.45
Medication Adjustment	.31
Suicide Ideation	-.28
Other Short-Term Event	.32

Table 5(Continued)

Variable	Coefficient
LONG TERM EVENTS	
Separation Anxiety/Parents	.18
Separation Anxiety/Therapist	.24
Dealing with Sexuality	-.34
Developing Friendships	-.26
Cash Shortage	-.18
Poor Living Situation	-.23
Drug Addiction	.20
PERSONALITY CHARACTERISTCS	
No Impulse Control	.19
Can't Tolerate Pressure	.37
Unattainable Self-Expectations	.18
Other Personality Characteristics	-.15

informant report) on the same type of individuals resulted in different data. This analysis yielded an F of 3.10 df=1 ($p < .01$). Thus, there is a difference between these two "rehospitalized" groups. Further, the one discriminant function identified accounted for 67% of variance. The variables that discriminate between groups in combination are reported in Table 5. Self-report group "membership" is predicted by more frequent mention of: Sudden Onset of Symptoms, Intoxication, Job Loss, Being Broke, Physical Problems, Suicide Ideation, Dealing with Sexuality, Developing Friendships, Cash Shortage, Poor Living Situation, and Other Personality Characteristics. Informant report group "membership" is predicted by more frequent mention of: Creating a Public Disturbance, Attempting Suicide, Other Immediate Events, Change in a Relationship, Gradual Symptoms, Alcohol Abuse, Medication Noncompliance, Medication Adjustment, Other Short-Term Difficulties, Separation Anxiety (Parents), Separation Anxiety (Therapist), Drug Addiction, No Impulse Control, Can't Tolerate Pressure, Unattainable Self-Expectations, and Other Personality Characteristics.

What can be made of such information? Again, the only definitive statement to be made is that the discriminant analysis confirms the results of the crosstabulations; the two groups are obviously dissimilar. As mentioned previously, the most important information gleaned from the discriminant analysis may be the list of discriminating variables and the function's subsequent ability to predict group membership. For these two groups, the combination of variables in Table 9 is able to predict group membership in 94.0% of cases. The

associated chi square is 7.93 df=1 ($p < .01$). It appears that there is a difference depending on data collection method. However, we are still left in the uncomfortable position of not knowing the method which produces the best predictive data. While the various differences in the two data collection procedures or differences in perspectives of the two groups may be the reason for this, it may be helpful to realize that in a clinical sense changing the social workers' perceptions of their client's stressors will not necessarily help the client. Yet, perhaps relapse may be prevented by changing the clients' perceptions of stressors. Thus, the client data may be more useful than social worker informant data in actually helping clients remain out of the hospital.

Is the Levels Model a reasonable approach to schematize precipitating events?

If the answer to the above question is "yes", one would expect that each level four variable (e.g., No Impulse Control) leads to a level three variable (e.g., Alcoholism), which in turn leads to a level two variable (e.g., Alcohol Abuse), which finally ends in a level one variable (e.g., Intoxication). Thus we should ideally be able to trace rehospitalizations back through all four levels. This is the assumption upon which the Levels Model rests. However, this is a difficult question to answer, and two analyses in particular, Factor Analysis and Path Analysis, may help to determine if the levels model is reasonable. According to the model, variables should be followed across levels (e.g., alcoholism to alcohol abuse) and not within

levels (alcohol abuse to drug abuse), and the factors should reflect some sort of trend for this cross-levels hypothesis. If this is true, it follows that the model is a reasonable approach to schematize variables that are associated with each other.

Since there were simply not enough subjects per group to create stable factor structures, all three were combined for the factor analysis. This produced 18 factors (accounting for 68.9% of the variance), 15 of which are logical and easily identifiable "stressor-sets." The remaining three appear "confused" and are not easily identifiable. Many of these 15 "stressor-sets" are logically predictable (e.g., alcoholism leads to alcohol abuse which leads to intoxication), and are shown in Table 6. The first factor bears out the interpersonal stressors pathway. There are relatively strong links between Change in an Important Relationship (.71), Separation Anxiety (Parents) (.79), and Developing Dependent Relationships (.60). Factor 2, named the Alcohol Factor, bears out the earlier evidence in the crosstabulations for a link between Alcoholism and Alcohol Abuse. Factor 5 may be named the Symptomology Factor. Again, this factor substantiates the earlier prediction and evidence from the crosstabulations that Sudden Onset of Symptoms and Gradual Onset of Symptoms form some sort of pathway. Factor 11, Drug Overdose, shows that Drug Addiction and Drug Abuse are linked as suggested by the earlier crosstabulations. Factor 4 links Suicide Attempt with Suicide Ideation, reflecting the earlier crosstabulations. In Factor 3, Medication Non-compliance, there are again strong links in both the factor analysis and correlations that connect Short-Term Medication

Table 6
Significant Correlations of the Factor Matrix

Factor #	Level 4/Personality Variables	Level 3/Long-Term Events	Level 2/Short-Term Events	Level 1/Immediate Events
1	Develop Dependent Relationships	Separation Anxiety Parents (.79)	Change in an Important Relationship (.71)	
2		Alcoholism (.82)	Alcohol Abuse (.69)	
3	Deny Illness	Medication Noncompliance (.79)	Medication Noncompliance (.55)	
4			Suicide Ideation (.74)	Suicide Attempt (.56)
5			Gradual Onset of Symptoms (.52)	Sudden Onset of Symptoms (.53)
6		Drug Addiction (.72)	Drug Abuse (.68)	
8		Constant Shortage of Cash (.72)	Broke (.60)	
10	Unattainable Self-Expectations (.58)	Job anxiety (.60)		
11	Can't Tolerate Pressure (.53)	Develop Friendships (Trouble with) (.53)	Drug Overdose (.70)	
12	Not Accepting of Responsibilities (.56)	Responsibility Anxiety (.56)		
13	Other Personality Characteristics (.54)	Other Short-Term Events (.46)	Other Immediate Events (.42)	
14		Separation Anxiety Therapist (.78)	Change in Therapist (.50)	
15		Medication Side Effects (.52)	Medication Adjustment (.43)	

Noncompliance, Long-Term Medication Noncompliance and the personality characteristic of Denying Illness. The links between these three variables make intuitive sense; one would naturally not be motivated to take psychotropic medications as prescribed if one denied any illness. However, it should be evident that these variables cannot be traced over all four levels, but only two or three levels per factor. Thus the factor analysis cannot help us in making definitive statements about the validity of the model, but it can readily show trends in support of the model.

The second method that was used to determine whether the Levels Model is a reasonable approach in schematizing precipitating events was Path Analysis. This analysis allows one to diagram the relationships or "paths" between individual variables by determining correlations between each variable and every other. The Levels Model postulates that there are "paths" among variables, thus this analysis is an ideal way to test the validity of this assumption. However, the reader should be reminded that the data may contain mostly idiosyncratic paths, instead of a very few general paths, as members of this population are unique in terms of "vulnerability" to stressors.

In actuality, the path analysis is a series of multiple regressions. The first step in this study was to take each Level 1 Immediate variable and regress it individually onto the variables in Level 2 (Short-Term Events). Each variable in Level 2 that was significantly correlated with the original Level 1 variable was then regressed individually onto the Level 3 Long-Term Events.

Each Level 3 variable significantly correlated with the Level 2 variables (that were correlated with the original Level 1 variable) was regressed onto the Level 4 (Personality Characteristics) variables. Thus beginning with each original Level 1 variable the diagram had the potential to "branch out" to more than one variable at each subsequent level. These analyses were performed with each of the three subject groups for each of the eight immediate variables. This resulted in 124 separate analyses. Path diagrams of each immediate variable with significant paths for each of the three groups are found in Appendix C.

As an example of how complicated Path Analysis Diagrams can be, observe the number of stressors involved in the first immediate event Rapid Onset of Symptoms for each group. For self-report non-rehospitalized subjects only, one readily finds that only one correlation is significant, that of sudden onset of symptoms with gradual onset of symptoms. Self-report rehospitalized subjects reported a greater number of stressors. Not only do Sudden Symptoms stem from Gradual Symptoms (.50), but also from Change in an Important Relationship (.24). Gradual Symptoms follow Problems with Sexuality (.31) and Dependent Relationships (.26). Problems with Sexuality are associated with Not Accepting Responsibility (.37) and Deny Illness (.31). Job Anxiety is associated with Not Being Able to Tolerate Pressure (.44). One can readily see that these correlations are predictable according to logical assumptions only to a limited extent.

Finally, social worker informants again report Sudden Onset as a result of Gradual Onset of Symptoms (.32), though the correlation of

Sudden Onset of Symptoms and Job Loss is less predictable (.25). Gradual Symptoms are the result of a lack of Separation Anxiety with Parents (-.31), which is predicted by Development of Dependent Relationships (.32). Job Loss is associated with Cash Shortage (.25) and/or Drug Addiction (.29). Finally, Drug Addiction and Cash Shortage stems from Not Accepting Responsibility (.29 and .26). Once again, some of these correlations might have been expected, but for the most part they are not highly predictable. Viewing this path analysis as typical, it is understandable why it is so difficult to interpret these diagrams in any other but descriptive terms.

The reader can readily determine that these paths are not a clear validation of the Levels Model. However, they are not unsupportive of the Model itself, but perhaps only unsupportive of general or popular paths.

Before turning to the discussion, one additional analysis needs to be described. If the Model is valid, it would follow that correlations between "neighboring" Levels (e.g., Level 1 and Level 2) should be greater than correlations between Levels that are not "neighbors" (e.g., Level 1 and Level 3). Thus a sign test was utilized. Using the correlation matrix, each time a variable had a greater correlation with neighboring variables than with non-neighboring variables, it received a "plus" (i.e., it substantiated the model). When a variable had a correlation that was greater for non-neighboring variables than for neighboring variables,

it received a "minus" (i.e., it disproved the model). Pluses and minuses were counted. The Levels Model suggested that more pluses than minuses should be formed.

Despite the logic of this analysis it proved impossible to carry out; there were too many zero order correlations. Thus it would not be as supportive of the model as much as it would be supportive of a high level of measurement error. Consequently, this analysis was dropped from the study.

In conclusion, one can make some general statements about whether the Levels Model is a reasonable approach. Factor analysis does seem to indicate that the Levels are reasonable - if not for all four Levels, at least for two or three. Path Analysis also indicates that the Levels approach may be reasonable. Therefore some evidence was presented that can substantiate the model.

DISCUSSION

Due to the exploratory nature of this study, the limitations of the research should be considered before discussion of the results. It is realistic to present the findings of this study in light of these limitations in lieu of the customary discussion of limitations in light of the discussion.

Limitations

Biases of the Respondents. Respondents were volunteers and may be a different population from non-volunteers. In this study, a great number of respondents displayed paranoid tendencies, and to elicit volunteers among a paranoid population is a difficult feat. Therefore this sample of volunteers would tend to be even more biased or atypical (e.g., more paranoid), resulting in selection bias.

Biases of the Informant. It is likewise naive to consider the social worker informants as unbiased. Discussions held with the social workers were on a formal information gathering level, and they also have their own theories as to why their clients relapse. In addition, the rehospitalized clients described occasionally were relatively new to the agency. Thus, differing amounts of information concerning the lives of the clients were known by the informants at the time of their rehospitalization. Again, this may have introduced a subtle bias in the research.

Biases of the Self-Report Questionnaire. Although the self-report questionnaires were revised by psychiatric social workers and piloted

with several preliminary subjects before data collection, there still may have been built-in biases or confusing directions or statements. Each of the five pilot subjects were questioned at length about the instrument, including: (a) were the directions easily understood, (b) do you think people would mind filling out this questionnaire, (c) did filling out the questionnaire cause you distress, (d) do you think this questionnaire "makes sense," and (e) do you think filling out this questionnaire has helped you. Based on responses to these questions, the questionnaire was revised. However, it would be naive to consider the instrument perfected at this point. Indeed, one purpose of this exploratory study was to revise the instrument on the basis of more extensive data collection.

Biases in the Methodology. There is a threat to valididty that was not controlled for in this study, and may have produced an additional bias. The informant data was collected over a one year period from September 1981 to September 1982. The self-report data collection began in January of 1983 and continued until April 1983. This may have introduced history effects into the data. Changes in the psychiatrically disabled population from September 1981 to April 1983 may have resulted in a different subject population from the beginning of the study to the end. This is a plausible threat; changes in criterion for a psychiatric disability claim for Social Security began in early 1981. Social Security Disability payments were threatened for a large number of the subjects in this study. However this situation remained only a threat; members of this population were rarely disallowed SSDI. Fortunately for this study,

most of the threat had diminished by September of 1981, although remnants of this may have affected the behavior or perceptions of the study subjects. The potential bias of this uncontrollable situation may have been further minimized by collecting all self-report and informant data at one time. However, the informant data could not be collected in less than one year, and the self-report data was collected at the only possible time due to previous committments by the cooperating agencies and the investigator. Therefore, history must be regarded as a plausible threat to internal validity.

Biases in the Levels Model. Perhaps the most important bias is that which is built into the Levels Model itself. The Model assumes that there are four levels of stressors which affect individuals. The design of the clinical/research instrument reflects these assumptions. Thus, there is the possibility that subjects identified stressors in levels because that is the way they were presented. For example, if a relapse was believed by a subject to be caused by alcohol, the subject was likely to find Intoxication on list 1 (see Appendix A) and identify that stressor as the primary cause. He or she then proceeded to list 2 and found Alcohol Abuse. Again, since the cause of the relapse was alcohol, this item is checked also. On list 3 Alcoholism was found and subsequently checked off. These may be the valid causes, but they may have been checked off merely because they are all alcohol-related. Of course, the model was designed with this type of "path" in mind. It was assumed, again through intuition and knowledge of research and past cases, that alcoholism often is correlated to short-term alcohol abuse which is subsequently linked to intoxication.

The subjects might have "cooperated" with the model because it was the "correct" way to respond.

An additional related bias built in to the model reflects the variables identified in the research instrument. As previously mentioned, all possible causes leading to relapse were identified in order to produce a useful research and clinical tool. However, because a choice is "there," the likelihood of that stressor being chosen is greater than if it were absent. For example, medication side effects, a long-term problem, do occur for a number of people who take psychotropic medications over many years. Some of these side effects include twitching, glassy eyes, and dry mouths. In addition, nearly all psychotropic medication produces drowsiness, even with short-term usage. The typical subject on medication will likely be affected in some negative way. However, it is such an everyday occurrence with most individuals that they hardly notice the side effects as a product of the medications or as a problem anymore. However, if they are reminded by the item "side effects" on the instrument, these individuals are much more likely to recognize this as a problem than if they needed to recall these stressors on their own. Of course, there are individuals whose side effects are so troublesome or blatant that they would identify them as a problem whether or not they are reminded of their existence. But it is not these individuals who cause the potential biases, it is the former subjects who need to be "reminded" of their problem. However unfortunate this may be, obviously in order to create a useful instrument for the exploratory phase some biases will be present.

Another methodological bias possible with this study is measurement error, especially with respect to predicting group "paths." The two research instruments supplied four checklists totaling 45 possible stressors. Such a wide and varied choice would tend to encourage idiosyncratic responses. Therefore, the inability of this study to identify general paths may be the result of the nature of the model.

Differences in the types of stressors reported by rehospitalized and non-rehospitalized clients. The results of the crosstabs, discriminant analysis, and qualitative analysis will be discussed in this section, in light of the aforementioned limitations. The Levels Model is based upon the assumption that there are relationships among certain variables across the four levels. For example, a significant relationship was expected between intoxication, alcohol abuse, and alcoholism. The discussion of the crosstabulations may be less confusing if this assumption is kept in mind.

Regarding Table 2, one can readily ascertain that the reason subjects give for their own frustrating situation oftentimes is Sudden Onset of Symptoms. Across both groups, Suddent Onset of Symptoms is present in at least 50% of cases. If one looks to the Level 2 stressors, one finds that Gradual Onset of Symptoms is the second most identified stressor for rehospitalized groups and is the most frequently identified stressor for non-rehospitalized groups. Clearly symptomology is a problem of great difficulty among this psychiatrically disabled population. As another example, both groups

identify the short-term Being Broke and the Long-Term Constant Cash Shortage as a frequently mentioned problem. Thus, there are a few predictable trends which support the levels of the model, although in some cases there do not appear to be distinct differences between groups.

Regarding the three significant Chi Square analyses indicating differences between the two groups, we may note that rehospitalized subjects identify distinct "events" as stressors (i.e., Suicide Attempt and Intoxication), while non-rehospitalized subjects identify the vague Sudden Onset of Symptoms as an important stressor. One hypothesis as to these differences between the groups may be that rehospitalized clients are better able to pinpoint specific events leading to their relapse, while non-rehospitalized clients may be more likely to experience generalized or vague stressors.

To determine if there are differences between the two self-report groups, discriminant analysis was used. The one function produced accounted for 32% of the variance identifying 15 variables able to differentiate between the two groups. Because very similar instruments were used for each group, it can be assumed that the groups actually experienced different stressor variables. One of the most important goals of this research was to determine if it is possible to predict future rehospitalizations based on stressors. The underlying assumption is if we can predict relapse, we may be able to intercede in this relapse. However, an important point must be kept in mind. The differences between these two groups on the fifteen variables are statistically significant, but are they clinically significant? That

is, if one knows that drug overdose is an indicator of a possible rehospitalization, would this change clinicians' behavior toward these clients? There just is not a great enough clinical difference for any one variable to change the expectations or behaviors of the clinicians. However, if the clinician determined how a client "scored" in terms of the absence or presence of all 15 variables in Table 8, rehospitalization could be fairly accurately predicted. That is, if the stressors experienced by a client began to resemble those most typically associated with relapse, the clinician can be alerted to the increased probability of rehospitalization. In the end, it is frequently the Discriminant Classification that is a true indication of how successfully these variables are able to predict relapse. According to the classification of subjects for self-report rehospitalized and non-rehospitalized groups, 78.6% of individuals were correctly classified.

Yet identifying variables associated with relapse is not the only knowledge needed to predict relapse. According to Dohrenwend, Weiner and others, one also needs to determine the perceptions of these stressors. To discover if perceptions do make a difference in whether or not a client will be rehospitalized, we turn to qualitative analysis.

For this study, subjects in the two self-report groups answered two questions in particular that were important qualitatively. The first question for rehospitalized subjects was, "What was the frustrating situation that lead to your last hospitalization?" (see Appendix D). For the non-rehospitalized subjects the first question

was, "What was the last frustrating situation that occurred in your life?". The second question for both groups was, "what could have been done, either by yourself or someone else, to make this problem less frustrating?"

For data analysis, responses from individual subjects were copied onto cards. Responses were then classified into one of the three topic areas: (a) indicative of internal locus of control toward the situation, (b) indicative of external locus of control toward the situation, (c) not classifiable as internal or external locus of control.

Comparing locus of control (internal/external) and the type of subject (rehospitalized/non-rehospitalized) yielded a chi-square of 5.82 df=1 ($p < .05$). These results pose an interesting point for discussion. It appears that rehospitalized subjects are twice as likely to perceive their "frustrating situations" as out of their control than within their control, while non-rehospitalized subjects are as likely to attribute the situation to internal as to external factors.

What are the implications of this finding? From this analysis alone, it would appear that rehospitalized individuals perceive events as externally controlled, although non-rehospitalized clients do not necessarily view these events in this way. But what if the events are different for each group? Prior quantitative analyses have indicated this to be the case. For example, drug overdose is more likely to have occurred for rehospitalized clients than for non-rehospitalized clients. While one might validly say that the two groups differed in

stressors and in perceptions to these stressors, it is impossible to propose what stressors are perceptually different for the two groups. In other words, is drug overdose really more likely to occur for rehospitalized clients, or do these clients perceive a certain action (i.e., taking drugs) as an overdose, while non-rehospitalized clients perceive this same action as a suicide attempt or as a consequence of gradual onset of symptoms. It was beyond the scope of this exploratory research to study perceptions of these individual stressors. Despite these ambiguities, the present study does leave us with a direction for further research with the Levels Model. In subsequent studies it should be possible to zero in on perceptions of each individual stressor in order to make more definitive conclusions.

In sum, we have found that the perceptions of rehospitalized and non-rehospitalized subjects do differ: rehospitalized clients are twice as likely as non-rehospitalized clients to find the cause of their problems due to the external world. Non-rehospitalized subjects do not have this tendency. However, the two groups do differ in terms of some of the stressors identified.

Differences in the types of stressors reported by rehospitalized clients and those reported by informants of rehospitalized clients. As previously discussed, crosstabulations illustrate several differences between these two groups. For example, Being Broke (44.6%) is an important issue for self-report respondents, but is relatively unimportant according to informants (14.1%). Important issues according to informants, such as Develop Dependency (42.3%) or Separation

Anxiety/Parents (47.9%) are much less important for self-report respondents (24.6% and 20.0% respectfully). Thus while these crosstabulations are quite helpful in predicting possible important factors, it is rather difficult to come to any conclusions regarding the validity of the model or the validity of these particular variables as discriminating between groups. It is difficult to isolate trends or paths from crosstabulations. However, trends from chi squares indicate that rehospitalized clients are more likely to identify events as stressors (e.g., change in living situation, intoxication), while social worker informants identify interpersonal stressors (e.g., change in a relationship) as precipitants in a rehospitalization. In addition, it can be stated that crosstabulations do illustrate differences between these two groups. But are these groups as a whole statistically different? We turn to discriminant analysis for the answer.

By selecting only the two rehospitalized groups, self and informant report, the researcher found that twenty-eight variables produced one function in the discriminant analysis that accounted for 67% of the variance between the two groups. The equation generated by these variables predicted group membership correctly for 94% of cases. The implications of this analysis are complex. Due to the differences introduced using informant versus self-report data collection, or the differences introduced by using an imperfect data collection instrument, or differing perceptions of social workers and clients, information from these two groups are radically different.

What caused these differences? In comparing the two self report

groups, one could possibly believe that the informants were simply "misinformed." That is, since one could not possibly know another as well as one knows oneself, perhaps the social workers simply did not have the "extra" knowledge that the subjects had about themselves. Then too, the social workers have their own theoretical frame of reference from which they perceive the stressors of their clients. In addition, some clients were relatively new to the agency when they were rehospitalized, and therefore the knowledge of the social worker may have been more superficial or mere conjecture.

Yet neither can one assume that the subjects were aware of the stressors in their lives. Schizophrenics are generally thought of as relatively lacking in self-insight. Yet, whatever the reason for this discrepancy, it is obvious that the social worker informants believed that their clients have very different problems from what the clients themselves believed. In the end, it is perhaps the beliefs and perceptions of the clients that are most important. These beliefs and perceptions may be able to be changed and thus a relapse is less likely to occur. The beliefs and perceptions of the social worker informant, on the contrary, are much less important to the client and less related directly to rehospitalization.

Based on these two analyses, and keeping the above in mind, it is evident that the two rehospitalized groups are significantly different. Thus, differences have been found depending on the data collection method or perceptions of the informants and clients. Or is the basis of this difference to be found in the model itself? To answer this we turn to the next series of analyses.

The Levels Model as a reasonable approach to schematizing precipitating events. A series of analyses was produced to determine if there is support for the "levels" of the model by substantiating the predicted paths. All groups were combined in this analysis as the number of subjects per group (n = 65) was not large enough proportionate to the number of variables (45) to allow for separate analyses by group.

Using the standard eigenvalue set at less than 1, 18 factors resulted. These factors did show a strong tendency to support the Levels Model by producing many factors reflecting predicted paths (e.g., alcoholism leads to alcohol abuse). Please again refer to Table 6 for a description of fifteen of these supportive factors.

It is evident that the differing methods illustrated thus far have begin to produce similar results. Taken by themselves, each method has not produced conclusive evidence for the model. However, taken together we can readily see tendencies in the data to support the model, at least on the exploratory level.

Yet the question remains, do these analyses really support the "levels" of the model? Or are these correlated levels just rephrasings of the same variable? This is difficult to assess. As previously mentioned, the model itself may encourage this bias by its very nature; subjects may have "cooperated" with the model by identifying alcohol related stressors at each level, etc. At this point, it is impossible to partition out the effects of these "across level" variables that were obvious in the instrument. However, this

would be an important question to deal with in subsequent studies testing the model.

One further mention of the factor analysis should be made before the discussion moves on to path analysis. There may be a question as to whether setting eigenvalues at less than 1 for producing the optimal number of the factors is legitimate in all cases. There is some dispute over whether accounting for a certain degree of variance, and cutting off the number of factors at this point, is a valid way of producing a more stable factor structure accounting for more total variance with fewer factors.

For this purpose, a second factor analysis was performed, limiting factors to 11. These factors accounted for 50.9% of the total variance in the first analysis. By setting factors at n=11, a slight increase in total variance (51.7%) was accounted for. Unfortunately, these 11 factors did not produce any logical or predictable paths as found in the first analysis. For example, factor 5 linked suicide attempt (.39) with alcoholism (.49). The other 10 factors were similarily "confused." Thus it was determined that the best analysis for the purpose of this study was that of the first, 18 factor analysis.

The second analysis concerned with answering this question was path analysis. The reader should remember that while the Levels Model was designed to identify certain stressor sets associated with rehospitalization, one additional goal of this study was to identify general or popular paths among this population. This goal proved to be impossible to attain. According to the vulnerability model, all

human beings are vulnerable with respect to certain, idiosyncratic stressors; this is especially true for the psychiatrically disabled. Path analysis is a method used to identify these stressors as they are schematized in the Levels Model. Perhaps the presence of so many varied idiosyncratic vulnerabilities is what makes interpretation of the path analyses difficult. Appendix C with the verbatim lists of stressors for self-report rehospitalized and self-report non-rehospitalized subjects is an excellent illustration of the variety of stressors experienced by this population.

It is possible that these individual paths reflecting "vulnerabilities" may not be analyzable. For example, the quality of the rehospitalizations may vary greatly from person to person. For some, rehospitalization is a frequent, non-significant event. For others, it is a rare occurrence of great significance. The amount of dependence on the hospital that individuals feel and the number of rehospitalizations they experience varies greatly. For these reasons, it is advisable to trace subjects through several hospitalizations in order to determine the individual's true "vulnerabilities" over time, instead of comparing the unique responses to a complex phenomena by differing individuals. A prospective within individual design is a tactic that would further explore this issue and will be discussed later.

In general, the path diagrams include a large number of variables that had statistically significant correlations. Some of the correlations between variables are predictable, others are not. Despite the apparent confusion this entails, there sometimes are common paths.

For example, using Rapid Onset of Symptoms as the outcome, self-report non-rehospitalized clients identify Gradual Onset of Symptoms as the only stressor leading to Rapid Onset. Self-report rehospitalized subjects found Gradual Onset of Symptoms and Change in an Important Relationship important stressors leading to Rapid Onset of Symptoms. Furthermore, Troubles with Sexuality, Developing Friends, Cash Shortage, Job Anxiety, Not Accepting Responsibilities, Can't Tolerate Pressure, Deny Illness, Unattainable Self-Expectations, and Develop Dependent Relationships were all seen as important precipitants for the rehospitalized clients. Informants reported not only Gradual Symptoms, but Job Loss, Separation Anxiety/Parents, Cash Shortage, Drug Addiction, Not Accepting Responsibilities, and Developing Dependent Relationships as important correlates. Presently there is no way in which to compare these paths statistically. It suffices to say that these paths are a useful way to illustrate the difference between the groups and the idiosyncracy among individuals. Note again that self-report rehospitalized individuals are more likely to identify events as precipitants, while social worker informants identify interpersonal stressors as precipitants. This difference in perception, when identified and understood by clinicians, can have an influence on professional-client interaction.

In the future, there are several directions that the path analyses may take. When large numbers of subjects can be obtained, perhaps we may see more of a tendency for several paths to be identified, such as Alcoholism leading to Alcohol Abuse which leads to Intoxication, or Developing Dependent Relationships leading to Separation Anxiety which

leads to interpersonal difficulties. Further, the diagrams may be divided on other ways, e.g., according to diagnosis types, or seriousness of crisis. Thus future replications may be able to test the assumptions of the Levels Model further. At this point, we can only deal with the data on hand, and illustrate some practicality of the Levels Model.

Clinical Significance

The research objectives were geared not only toward the needs and perspectives of the researcher, but also towards those of the clinicians who will also utilize the data. Clinicians can use the standardized canonical discriminant function coefficients (Table 8) to determine the variables that best predict rehospitalization and Table 9 coefficients can indicate the differences in perspectives of social workers and their clients. Thus mental health professionals may be able to predict rehospitalization among their clients before it occurs, increasing the probability of intercepting a relapse.

Clinicians may also find the qualitative analyses (as presented in Appendix B) helpful. Armed with the knowledge of the differences in perspective between those likely and unlikely to relapse, the mental health professional may help clients to change their perceptions of life stressors when it is impossible to change the actual stressors. Thus the "learned helplessness" that chronic rehospitalized clients fall into can be broken. In addition to the qualitative responses,

some clients included suggestions for improvement in the programs they attend. Clinicians will find this helpful in revising old programs or developing new programs.

Conclusions

As is often the case with exploratory studies, definitive statements are difficult if not impossible to make. It is true that the research instruments were exploratory and may have introduced a bias, the clients and social worker informants may have created their own biases based on differing perspectives, and the theoretical assumptions built into the Levels Model may have perpetuated certain biases indicating to the subject the expected response. Nonetheless, the data appear to reflect a number of important findings.

In general, there does not appear to be conclusive evidence that the Level Model is valid across the four levels. However, there is evidence that several variables are associated with certain "paths" across more than one level. For example, Alcoholism and Alcohol Abuse have repeatedly been shown to covary. Suicide Attempt and Suicide Ideation; Sudden Onset of Symptoms with Gradual Onset of Symptoms; Change in Relationship with Separation Anxiety; and Short- and Long-Term Medication Noncompliance with Denying Illness have all been shown to be related. Therefore, a more "limited" Levels Model, perhaps tracing variable paths over only two or three levels has been indicated.

The following conclusions have been drawn:

(a) There are significant differences between the two self-report

groups (rehospitalized versus non-rehospitalized) using Chi Square analyses, discriminant analysis, and qualitative analysis of the clients' perceptions of locus of control for stressors. This is an excellent indication that the two groups do experience (a) different stressors and (b) different perspectives of the causes for their stress.

(b) There are significant differences between the two rehospitalized groups (self-report and informant report). This indicates that the psychiatrically disabled subjects and the social worker informants perceive the stressors involved in rehospitalization differently. Whether this is due to Social Worker lack concerning knowledge of their clients, the clients' lack of insight, a difference of frame of reference between the two groups, or differences in data collection procedures is unknown.

(c) Evidence for the four levels of the model appears limited, though suggestive for two or three levels. In addition, some variables appear to be related, e.g., suicide attempt with suicide ideation. The Path Diagrams are an excellent method by which to illustrate the model, although not necessarily useful statistically.

Most of these data are not surprising, such investigators as Weiner (1972, 1979), Dohrenwend (1978), Brown, (1974), and Zubin and

Spring (1977) have suggested that there are differences in stressors and attributions of these stressors between individuals experiencing psychotic episodes, and individuals not experiencing such episodes. Dohrenwend (1978) found that it is the interaction of the environmental forces or stressors and the individual's characteristics (e.g., ability to use social supports or attributions of control) that determine whether a psychotic experience will occur. Zubin and Spring (1977) further suggest that each of us are psychiatrically "vulnerable" to certain specific stressors. Weiner (1979) sees the interaction of the environment and psychological forces as an application of attribution theory. Accordingly, the disturbed individual is more likely to regard stressors as uncontrollable, unstable and external, whether or not this is appropriate. This study has provided additional information in this regard; the link between environmental stressors and the personal attribution of control possessed by the individual has been strengthened.

Implications of the findings. To sum these findings and produce recommendations for clincians is a difficult matter. While we can make statements about the differences in the stressors social workers and subjects identify with rehospitalization, we are not particularly sure about who may be right in this regard. But we can point out to clinicians that this difference does exist. The ramifications for clinical practice could be very useful. It would be useful for the clinician to understand the differences in perceptions of stressors between professionals and clients. But it would be most clinically significant if the social workers can help clients change their

perspectives on the cause of their relapses, e.g., to help them realize that they can exert some control over the stressors in their lives.

Certainly there are differences between the two self-report groups. Assuming the data are valid, we can make statements about those variables that appear to differentiate between the two. However, another matter complicates any simplistic statement about these variables. This is the matter of the perceptions of the subjects. We know that in general the rehospitalized group sees stressors as externally caused, while the non-rehospitalized groups sees stressors as internally caused, and this must be taken into account when one tries to predict relapse. However, we do not know how individual stressors are viewed with respect to locus of control, e.g., each group may view the same event differently. The rehospitalized group may blame another individual, while the non-rehospitalized group may blame themselves. Of course, we may not know which perceptions are the most accurate. This leads us to suggest further research that may partition these perceptions.

There are several other issues that may be addressed in further research. It should be evident that the subjects had some difficulty in completing the forms, especially the last two sections in attribution and demographics. It did not appear that subjects had difficulty completing the qualitative questions or identifying the stressors on the four lists provided. Perhaps to collect data on the more difficult or sophisticated data (i.e., attribution) another methodology could be utilized. For example, in lieu of a question-

naire, perhaps one-to-one interviews would enable subjects to better understand and communicate information.

Revising the data collection instruments (e.g., removing variables with little use, or clarifying instructions) would also enable subjects to provide better information. As for the qualitative data, by refining questions and including additional questions, several issues other than locus of control can be addressed to cope with the diversity of responses. As an example, it may be possible to gauge the seriousness of stressors. After all, it seems apparent that self-abuse is more serious than having a therapist leave on vacation. However, this is not necessarily the case. An individual may regularly abuse his or her self by slashing the arms with a knife or other sharp object, and not necessarily think that this is a serious event. However, this individual may perceive a therapist going on vacation as a very serious event. Therefore, perhaps it would not be appropriate for the rater to impose some "seriousness" rating on stressful events.

Another rating system that may be used in subsequent research is to categorize stressors into "types," e.g., interpersonal or physical. For the current study, the questions were not phrased in such a way as to encourage this type of response. Referring to Appendix D, it should be evident that there are many such responses as: "Wearing glasses every day. Talk to someone," or "Doing the dishes, this caused stress. Have someone else do them," that could be classified in two categories. In subsequent research, an open-ended question may be developed to tap this type of categorization, but this was impossible with the data obtained from the current study.

As mentioned previously, a future tactic for testing the Levels Model is a prospective "within individual" design. In this type of design the stressors in the individual's life, and the individual's responses to these stressors can be measured in a time-series manner across time. One such design would include the collection of stressor data monthly. The high recidivism rate of this population insures that many subjects would become rehospitalized during the study. Measuring stressors and perceptions of stressors on a monthly basis would enable the investigator to determine if the stressors, or perceptions of stressors, change directly before a rehospitalization occurs. Depending on the length of the study, individuals may even be followed for several rehospitalizations. This would enable the investigator to determine more stable paths for individuals (i.e., determine the individual's "vulnerabilities" to certain stressors that occur time and again).

There are several methods that could be used to collect this data, each with benefits and drawbacks. The problems with the current study, e.g., subjects misinterpreting instructions, and being "reminded" of stressors, could be minimized by the use of a face-to-face interview, or an open-ended questionnaire. However, demand characteristics would be a potential problem using interviews, and interpretation would be a problem with open-ended questionnaires. Another strategy would be to revise the two questionnaires based on improvements suggested by the current study, e.g., less complex directions, making the "Levels" less obvious, and giving fewer stressors as choices. Any design would involve trade-offs of course, but a repli-

cation would further refine this theory of complex, idiosyncratic behaviors and situations.

In sum, it should be noted that although this present study is exploratory in nature, it resulted in a number of important findings and a solid new direction for further research. Though the study was subjected to several potential biases, and dealt with an area of research that is difficult and often produces uninterpretable results, it overcame many of these difficulties, and produced solid implications for clinical practice with the psychiatrically disabled.

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APPENDIX A

LIFE STRESSORS LEADING TO REHOSPITALIZATION QUESTIONNAIRE

LIFE STRESSORS LEADING TO REHOSPITALIZATIONS

Think back for a moment about the last problem or stressful event that was especially frustrating. This should be something that lead to your last rehospitalization.

What was this problem or stressful event ? _____

_____

_____

What lead up to this problem or stressful event ? Did it begin suddenly or slowly ? For how long were you frustrated or stressed because of this e

_____

_____

_____

Why was this problem or stressful event particularily frustrating ? _____

_____

_____

_____

What could have been done, either by yourself or someone else, to make this problem less frustrating ? _____

_____

_____

What was done to make this problem less frustrating ? _____

_____

_____

How did you feel about this problem while it was occurring ? _____

_____

_____

***** When you've throughly explored this stressful event, turn the page ***

Following are 4 lists of causes or precipitating events that may have occurred during this frustrating experience. Some of these events were very important in making this problem or stressful event so frustrating that you were hospitalized, while some of them occurred, but were not especially important.

For example, you may be very depressed because you lost your job, and this can, of course, be very frustrating. However, at the same time you may have sprained your wrist. This is very stressful too, and adds to your frustration, but your job loss is really the source of your depression.

If there is more than one cause that you can identify in each list (remember, there are 4 lists) mark the most important causes with a star (*) and the number 1 cause with 2 stars (**).

LIST 1

This list deals with the sudden or drastic events that may have occurred immediately prior to your rehospitalization. This list may not apply to everyone; if it does not apply in your situation, please write the most drastic event that occurred during this frustrating time in the "other" category.

Immediately before your rehospitalization, did you :

(please check)

___ have an onset of anxiety, depression or symptoms ?

___ act violently or abusive towards others or towards objects (such as slap someone or break a window) ?

___ act out in public so as to cause a public disturbance (such as arguing or fighting in the streets) ?

___ overdose on drugs ?

___ become intoxicated from alcohol ?

___ deliberately injure or abuse yourself (such as driving dangerously or making yourself vomit) ?

___ attempt suicide or make a deliberate suicidal gesture ?

___ other (specify) _____

_____

How long was it between the most important event in list 1 and your rehospitalization ? _____ (for example, you overdosed on drugs and you were hospitalized immediately)

LIST 2

This list deals with short-term problems or events that may have been the cause of the drastic event on the first list. For example, a job loss you check off in this list may have been the cause of depression you identified on the first list.

During this frustrating experience, did you :

(please check)

___ lose your job

___ receive new responsibilities or lose responsibilities you like and can handle (at work or at home) ?

___ experience "broke" or unusual financial difficulties ?

___ have a change in an important relationship (such as you lost your boy/girlfriend or your parents moved) ?

___ have a change in a therapist or counselor, or your therapist/counselor went away on vacation ?

___ experience an inadequate or frustrating living situatio: (you were kicked out of home, etc.) ?

___ have any physical problems (broke your leg, etc.) ?

___ receive unusual pressure to succeed vocationally (such as others or yourself feel you should find a job) ?

___ feel yourself gradually becoming depressed, anxious or feel symptoms begin ?

___ use non-prescription drugs more than you are accustomed

___ use more alcohol than you are accustomed ?

___ take your prescription drugs other than prescribed (take too much or too little) ?

___ begin, with your doctor's approval, to adjust your prescription medications ?

___ begin to think about suicide ?

___ other (specify) _____

_____

About how long was it between the most important event in list 1 and the most important event in list 2 ? _____ (for example, 3 days after you were laid off from your job you became depressed)

LIST 3

This list deals with the long-term problems or stressful events that made this situation frustrating.

These problems are :

(please check)

___ anxiety about losing your parents or parental substitute.

___ anxiety about losing your therapist/counselor.

___ dealing with sexuality (such as you feel you don't handle sexual matters appropriately) .

___ developing friendships (such as you feel that no one likes you, or you're afraid to make friends, etc.).

___ a constant shortage of cash.

___ anxiety about getting or/and keeping a job.

___ poor living situation (unhappiness about a living situation, crowded living situation, etc.).

___ anxiety about your responsibilities (such as not being able to provide adequately for your children, not being able to pay your bills, etc.).

___ longstanding physical ailments (arthritis or ulcers, etc.

___ drug addiction or dependency.

___ alcoholism or alcohol dependency.

___ taking medication other than prescribed by your doctor (too much or too little).

___ long-term and subtle side effects of your prescribed medication.

___ other (specify) _____

_____

About how long was it between the most important event in list 2 and the most important event in list 3 ? _____ (for example, its been 6 months since you've become anxious about keeping your job, and then you lost your job)

LIST 4

This last list deals with long-term problems or parts of your personality that make what has happened in previous lists especially frustrating.

These are :

(please check)

___ not being able to control impulsiveness (such as quitting your job if you begin to feel tense or unhappy, without really thinking out the consequences).

___ not being able to accept responsibility (such as feeling that others are to blame for most of your troubles, or believing that nothing can be done about your troubles.

___ not being able to tolerate pressure (such as leaving your job if you feel you can't handle pressure).

___ denying that you have any problems (when you do).

___ having unattainable self-expectations (believing you will be successful doing a job that makes you feel stressed, and that you're not good at, and being unhappy thay you are not able to succeed at it).

___ having self-destructive tendencies (just when things are going right, you lose your temper, or do something to ruin what you've accomplished).

___ developing symbiotic or highly dependent relationships with someone else.

___ other (specify) _____

_____

About how long was it between the most important event in list 3 and the most important event in list 4 ? _____ (for example, you have not been able to tolerate pressure on the job for the past 10 years, and then six months ago you became especially anxious about keeping your job, three days ago you lost your job, and now you're feeling depressed.

Finally, in thinking about this frustrating situation in general, please check AGREE or DISAGREE for each of the following :

	AGREE	DISAGREE	
1.	_____	_____	This situation came about mostly because of me.
2.	_____	_____	This situation came about somewhat because of me.
3.	_____	_____	This situation came about mostly because of someone else.
4.	_____	_____	This situation came about somewhat because of someone else.
5.	_____	_____	This situation came about mostly because of bad luck or fate.
6.	_____	_____	This situation came about somewhat because of bad luck or fate.
7.	_____	_____	This situation was caused mostly because of constant, stable, or permanent reasons.
8.	_____	_____	This situation was caused somewhat because of constant, stable, or permanent reasons.
9.	_____	_____	This situation was caused mostly because of temporary or changing reasons.
10.	_____	_____	This situation was caused somewhat because of temporary or changing reasons.
11.	_____	_____	It would be easy for me to avoid this situation in the future.
12.	_____	_____	It would be moderately easy for me to avoid this situation in the future.
13.	_____	_____	It would be moderately difficult for me to avoid this situation in the future.
14.	_____	_____	It would be difficult for me to avoid this situation in the future.
15.	_____	_____	This situation was mostly controlled by me.
16.	_____	_____	This situation was somewhat controlled by me.
17.	_____	_____	This situation was mostly controlled by someone or something else
18.	_____	_____	This situation was somewhat controlled by someone or something else.

19. How much control do you feel you had of the situation ? _____

_____

20. Did anyone else have control of this situation ? _____

If so, who had control of this situation ? _____

In what way did they have control of the situation ? _____

_____

21. What could you have done to take control of the situation ? _____

1. Are you :

   (please check) ____ male ____ female

2. What is your age ? _____

3. What team are you on ? _____

4. How long have you been at The Thresholds ? _____

5. What is the highest grade level you have completed in school ? _____

6. How many times have you been hospitalized ? _____

7. How many times in the past year have you been hospitalized ? _____

8. At what age were you first hospitalized ? _____

9. What is the date of your last hospitalization ? _____

10. How long did this hospitalization last ? _____

Thank you for your responses. Your time and help are greatly appreciated.

APPENDIX B

LIFE STRESSORS QUESTIONNAIRE

LIFE STRESSORS QUESTIONNAIRE

Think back for a moment about the last problem or stressful event that was especially frustrating. This should be something that did not lead to a rehospitalization.

What was this problem or stressful event ? _____

_____

_____

What lead up to this problem or stressful event ? Did it begin suddenly or slowly ? For how long were you frustrated or stressed because of this event ?

_____

_____

_____

Why was this problem or stressful event particularily frustrating ? ____

_____

_____

_____

What could have been done, either by yourself or someone else, to make this problem less frustrating ? _____

_____

_____

What was done to make this problem less frustrating ? _____

_____

_____

How did you feel about this problem while it was occurring ? _____

_____

_____

***** When you've throughly explored this stressful event, turn the page *****

Following are 4 lists of causes or precipitating events that may have occurred during this frustrating experience. Some of these events were very important in making this problem or stressful event even more frustrating, while some of them occurred, but were not especially important.

For example, you may be very depressed because you lost your job, and this can, of course, be very frustrating. However, at the same time you may have sprained your wrist. This is very stressful too, and adds to your frustration, but your job loss is really the source of your depression.

If there is more than one cause that you can identify in each list (remember, there are 4 lists) mark the most important causes with a star (*) and the number 1 cause with 2 stars (**).

LIST 1

This list deals with the sudden or drastic events that may have occurred during this frustrating experience. This list may not apply to everyone; if it does not apply in your situation, please write the most drastic event that occurred during this frustrating time in the "other" category.

During this frustrating situation, did you :

(please check)

___ have an onset of anxiety, depression or symptoms ?

___ act violently or abusive towards others or towards objects (such as slap someone or break a window) ?

___ act out in public so as to cause a public disturbance (such as arguing or fighting in the streets) ?

___ overdose on drugs ?

___ become intoxicated from alcohol ?

___ deliberately injure or abuse yourself (such as driving dangerously or making yourself vomit) ?

___ attempt suicide or make a deliberate suicidal gesture ?

___ other (specify) _____

_____

_____

LIST 2

This list deals with short-term problems or events that may have been the cause of the drastic event on the first list. For example, a job loss you check off in this list may have been the cause of depression you identified on the first list.

During this frustrating experience, did you :

(please check)

___ lose your job

___ receive new responsibilities or lose responsibilities you like and can handle (at work or at home) ?

___ experience "broke" or unusual financial difficulties ?

___ have a change in an important relationship (such as you lost your boy/girlfriend or your parents moved) ?

___ have a change in a therapist or counselor, or your therapist/counselor went away on vacation ?

___ experience an inadequate or frustrating living situatic (you were kicked out of home, etc.) ?

___ have any physical problems (broke your leg, etc.) ?

___ receive unusual pressure to succeed vocationally (such as others or yourself feel you should find a job) ?

___ feel yourself gradually becoming depressed, anxious or feel symptoms begin ?

___ use non-prescription drugs more than you are accustomed

___ use more alcohol than you are accustomed ?

___ take your prescription drugs other than prescribed (take too much or too little) ?

___ begin, with your doctor's approval, to adjust your prescription medications ?

___ begin to think about suicide ?

___ other (specify) _____

_____

About how long was it between the most important event in list 1 and the most important event in list 2 ? _____ (for example, 3 days after you were laid off from your job you became depressed)

LIST 3

This list deals with the long-term problems or stressful events that made this situation frustrating.

These problems are :

(please check)

___ anxiety about losing your parents or parental substitute

___ anxiety about losing your therapist/counselor.

___ dealing with sexuality (such as you feel you don't handle sexual matters appropriately) .

___ developing friendships (such as you feel that no one likes you, or you're afraid to make friends, etc.).

___ a constant shortage of cash.

___ anxiety about getting or/and keeping a job.

___ poor living situation (unhappiness about a living situation, crowded living situation, etc.).

___ anxiety about your responsibilities (such as not being able to provide adequately for your children, not being able to pay your bills, etc.).

___ longstanding physical ailments (arthritis or ulcers, etc

___ drug addiction or dependency.

___ alcoholism or alcohol dependency.

___ taking medication other than prescribed by your doctor (too much or too little).

___ long-term and subtle side effects of your prescribed medication.

___ other (specify) _____ _____

_____ _____

About how long was it between the most important event in list 2 and the most important event in list 3 ? _____ (for example, its been 6 months since you've become anxious about keeping your job, and then you lost your job)

LIST 4

This last list deals with long-term problems or parts of your personality that make what has happened in previous lists especially frustrating.

These are :

(please check)

___ not being able to control impulsiveness (such as quitting your job if you begin to feel tense or unhappy, without really thinking out the consequences).

___ not being able to accept responsibility (such as feeling that others are to blame for most of your troubles, or believing that nothing can be done about your troubles.

___ not being able to tolerate pressure (such as leaving your job if you feel you can't handle pressure).

___ denying that you have any problems (when you do).

___ having unattainable self-expectations (believing you will be successful doing a job that makes you feel stressed, and that you're not good at, and being unhappy thay you are not able to succeed at it).

___ having self-destructive tendencies (just when things are going right, you lose your temper, or do something to ruin what you've accomplished).

___ developing symbiotic or highly dependent relationships with someone else.

___ other (specify) _____

_____

About how long was it between the most important event in list 3 and the most important event in list 4 ? _____ (for example, you have not been able to tolerate pressure on the job for the past 10 years, and then six months ago you became especially anxious about keeping your job, three days ago you lost your job, and now you're feeling depressed.

Finally, in thinking about this frustrating situation in general, please check AGREE or DISAGREE for each of the following :

	AGREE	DISAGREE	
1.	_____	_____	This situation came about mostly because of me.
2.	_____	_____	This situation came about somewhat because of me.
3.	_____	_____	This situation came about mostly because of someone else.
4.	_____	_____	This situation came about somewhat because of someone else.
5.	_____	_____	This situation came about mostly because of bad luck or fate.
6.	_____	_____	This situation came about somewhat because of bad luck or fate.
7.	_____	_____	This situation was caused mostly because of constant, stable, or permanent reasons.
8.	_____	_____	This situation was caused somewhat because of constant, stable, or permanent reasons.
9.	_____	_____	This situation was caused mostly because of temporary or changing reasons.
10.	_____	_____	This situation was caused somewhat because of temporary or changing reasons.
11.	_____	_____	It would be easy for me to avoid this situation in the future.
12.	_____	_____	It would be moderately easy for me to avoid this situation in the future.
13.	_____	_____	It would be moderately difficult for me to avoid this situation in the future.
14.	_____	_____	It would be difficult for me to avoid this situation in the future.
15.	_____	_____	This situation was mostly controlled by me.
16.	_____	_____	This situation was somewhat controlled by me.
17.	_____	_____	This situation was mostly controlled by someone or something else
18.	_____	_____	This situation was somewhat controlled by someone or something else.

19. How much control do you feel you had of the situation ? _____

_____

20. Did anyone else have control of this situation ? _____

If so, who had control of this situation ? _____

In what way did they have control of the situation ? _____

_____

21. What could you have done to take control of the situation ? _____

1. Are you :

   (please check) ____ male ____ female

2. What is your age ? _____

3. What team are you on ? _____

4. How long have you been at The Thresholds ? _____

5. What is the highest grade level you have completed in school ? _____

6. How many times have you been hospitalized ? _____

7. How many times in the past year have you been hospitalized ? _____

8. At what age were you first hospitalized ? _____

9. What is the date of your last hospitalization ? _____

10. How long did this hospitalization last ? _____

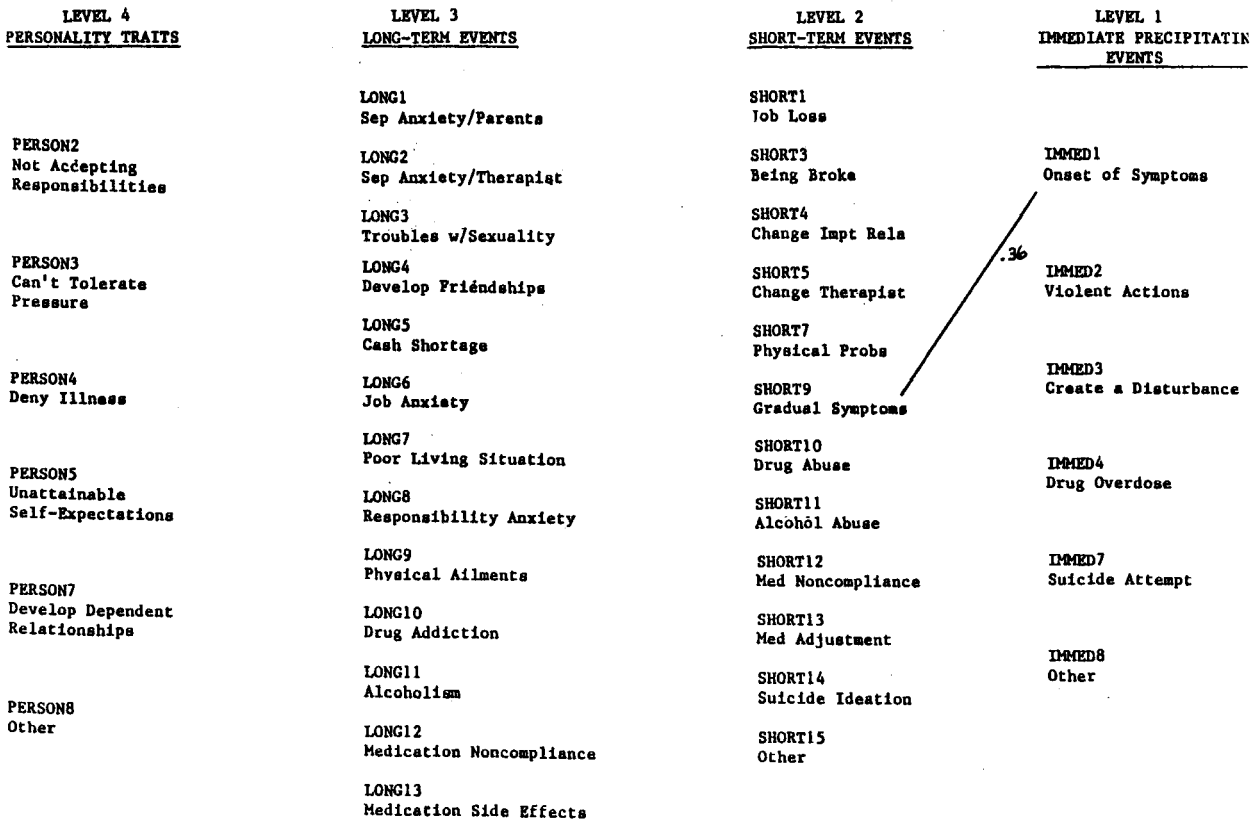
Thank you for your responses. Your time and help are greatly appreciated.

APPENDIX C

PATH ANALYSIS DIAGRAMS

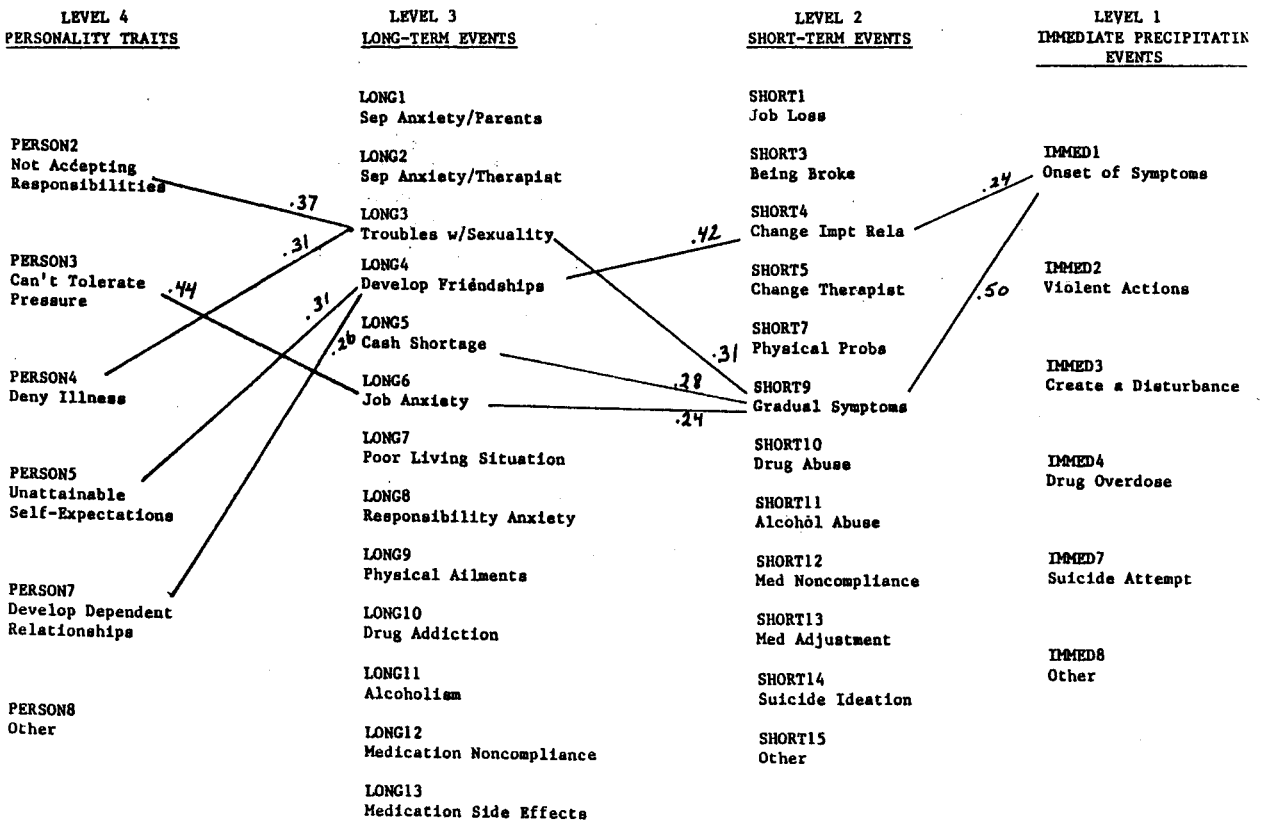
PATH ANALYSIS DIAGRAM

Onset of Symptoms/Self-Report Non-Rehospitalized



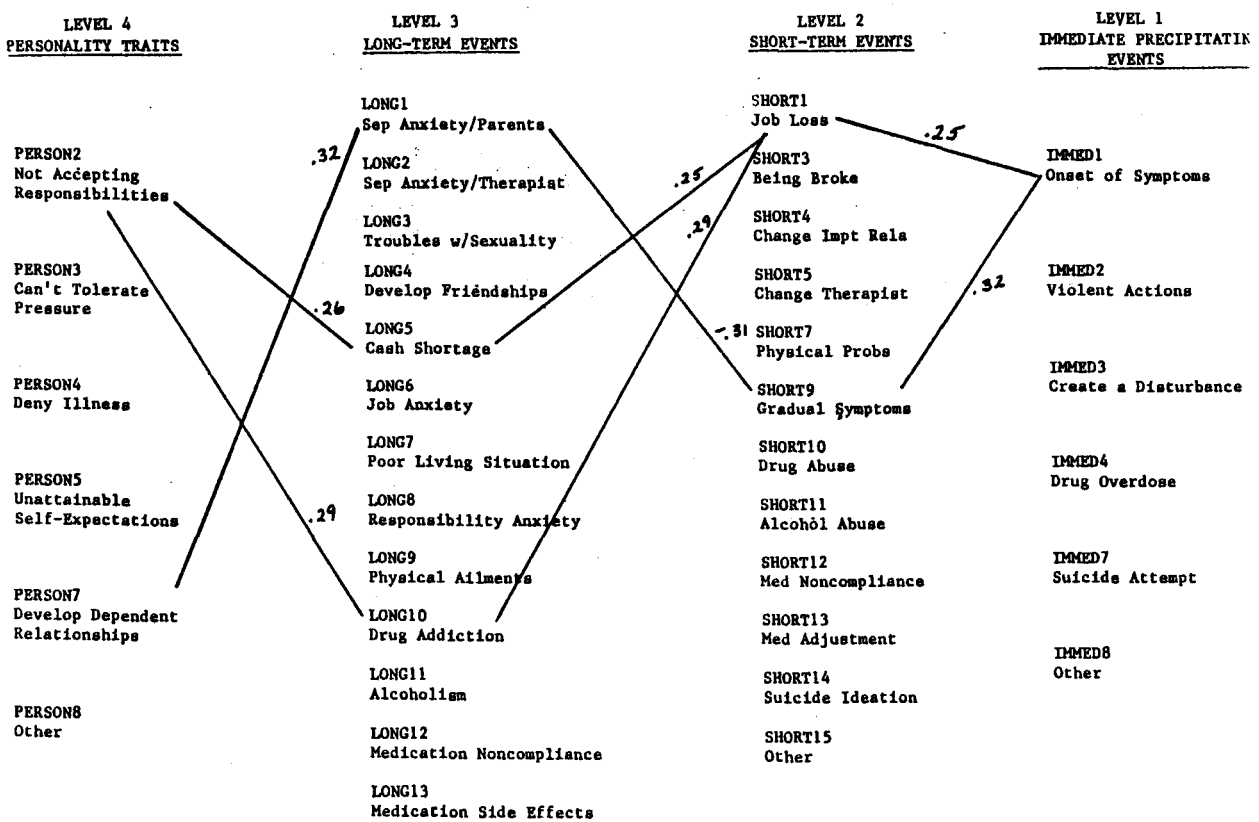
PATH ANALYSIS DIAGRAM

Onset of Symptoms/Self-Report Rehospitalized



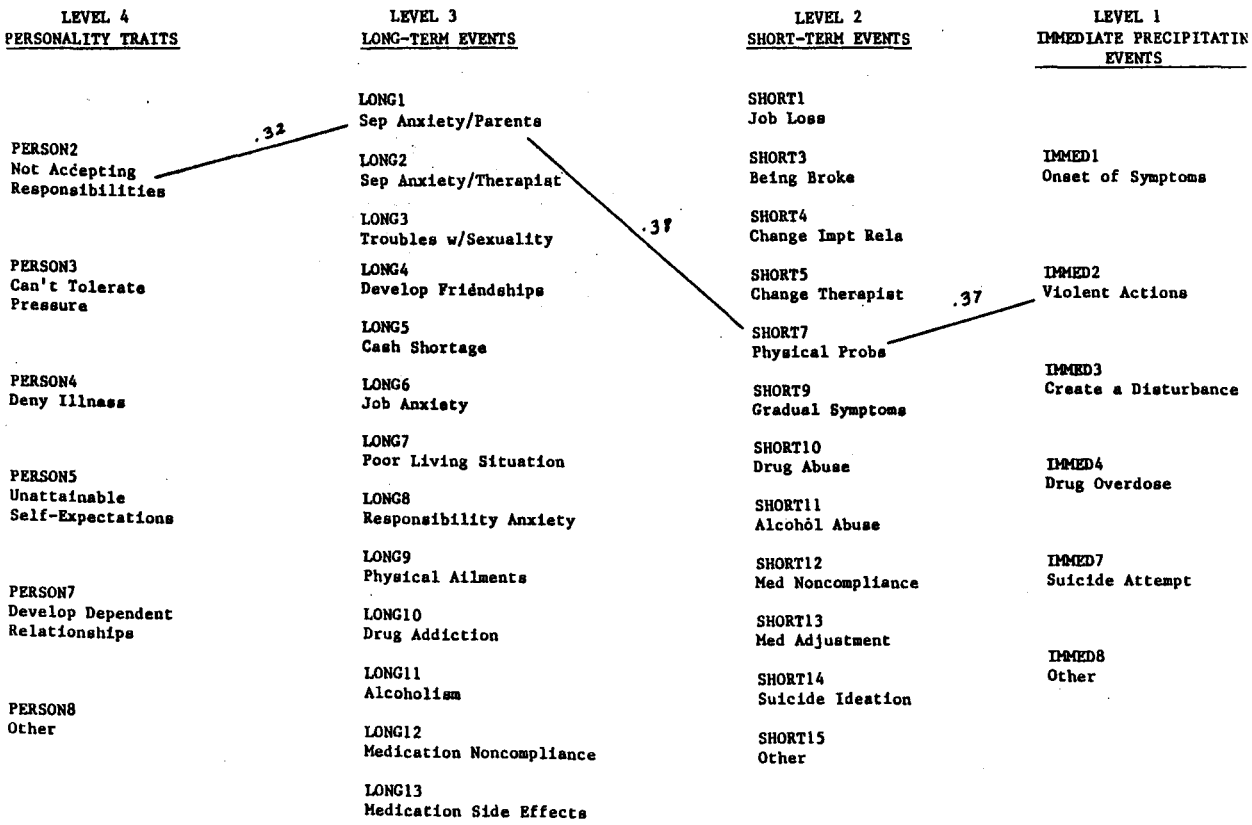
PATH ANALYSIS DIAGRAM

Onset of Symptoms/Informant of Rehospitalized Clients



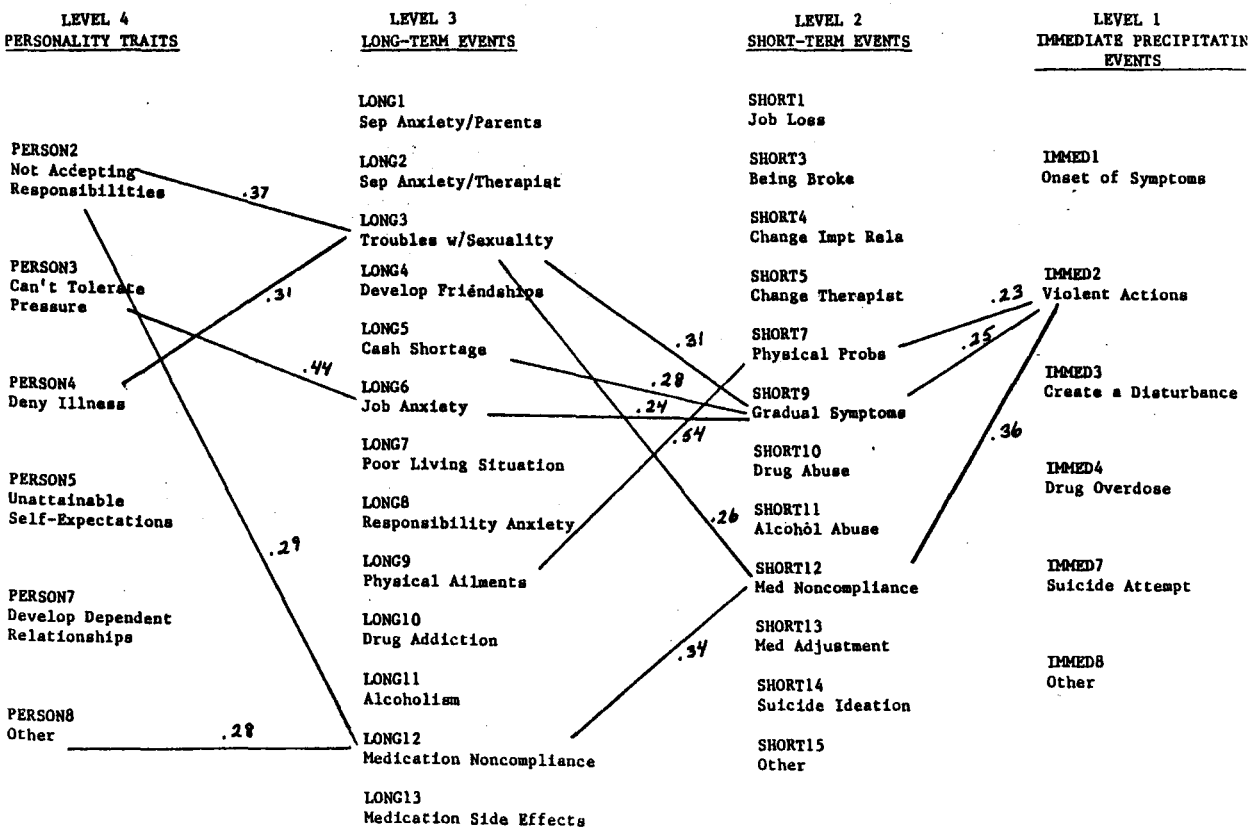
PATH ANALYSIS DIAGRAM

Violent Actions/Self-Report Non-Rehospitalized



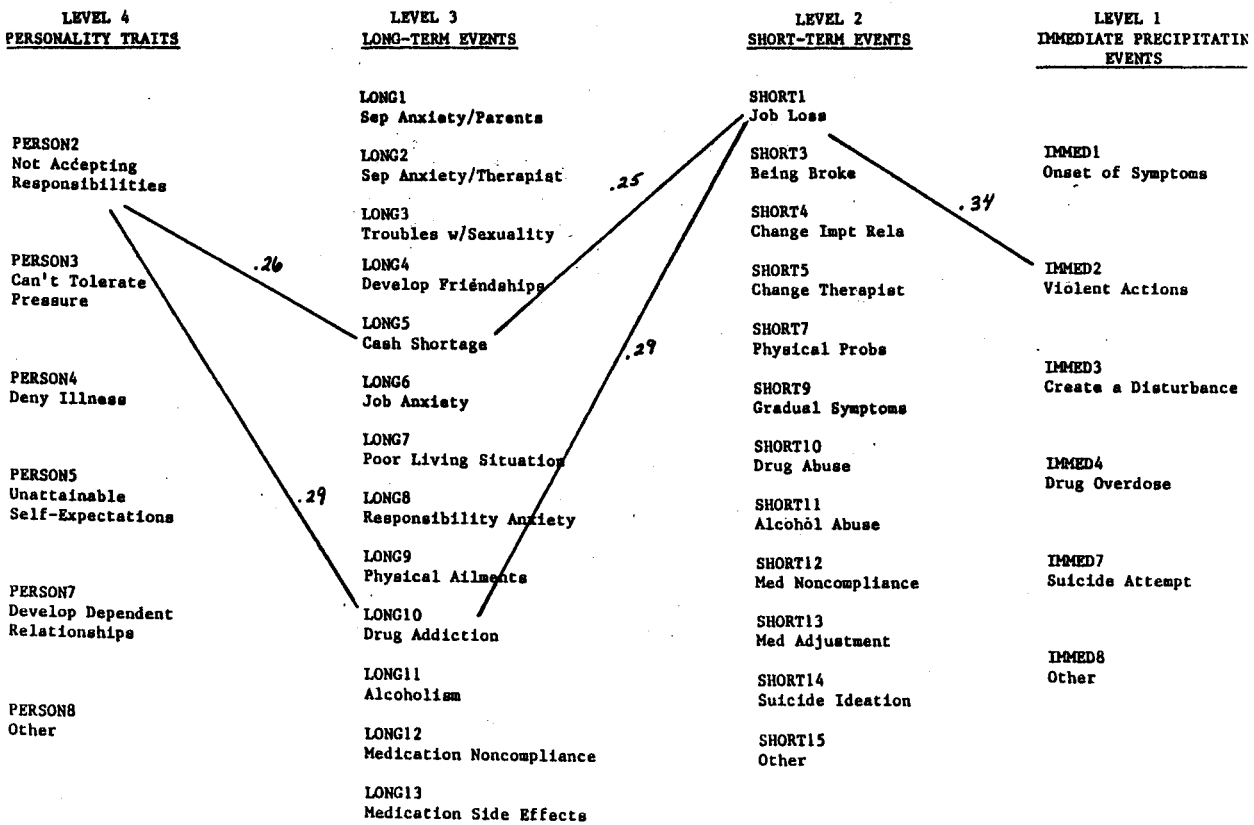
PATH ANALYSIS DIAGRAM

Violent Actions/Self-Report Rehospitalized



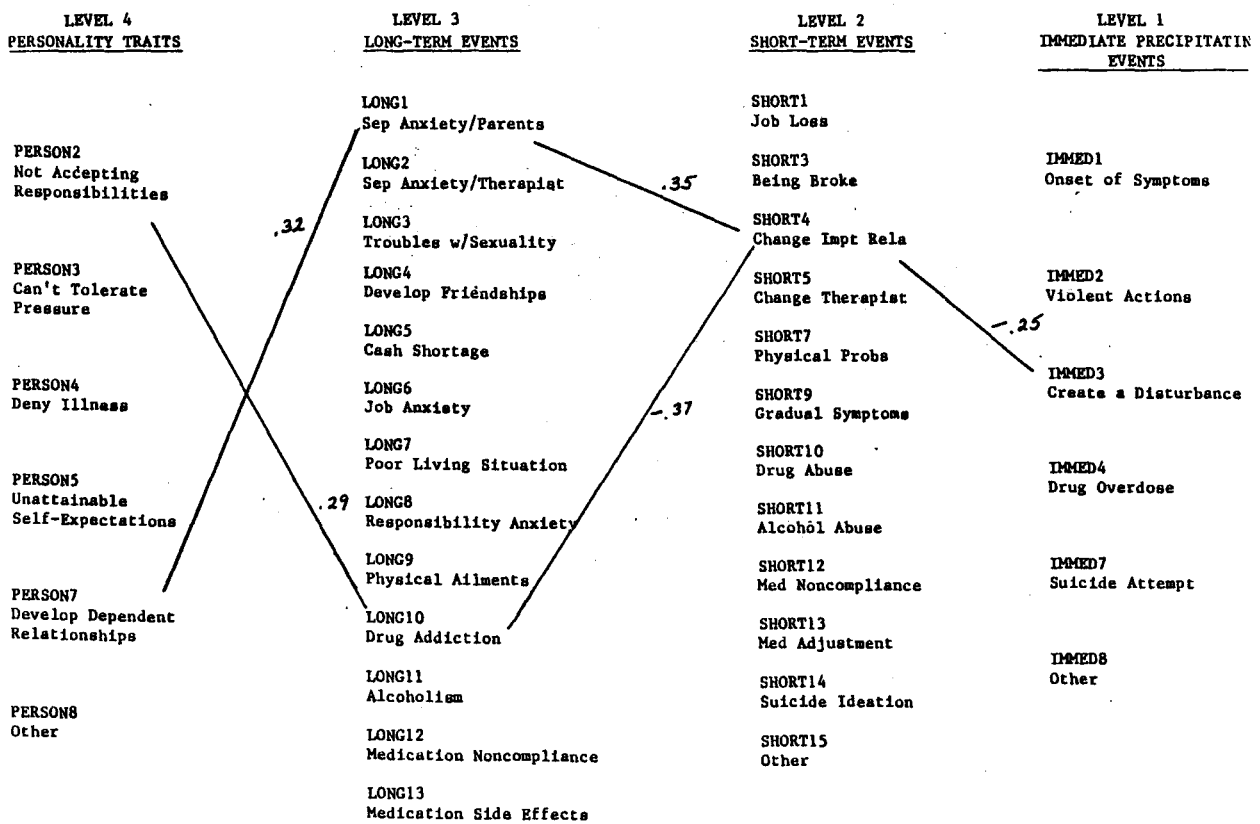
PATH ANALYSIS DIAGRAM

Violent Actions/Informant of Rehospitalized Clients



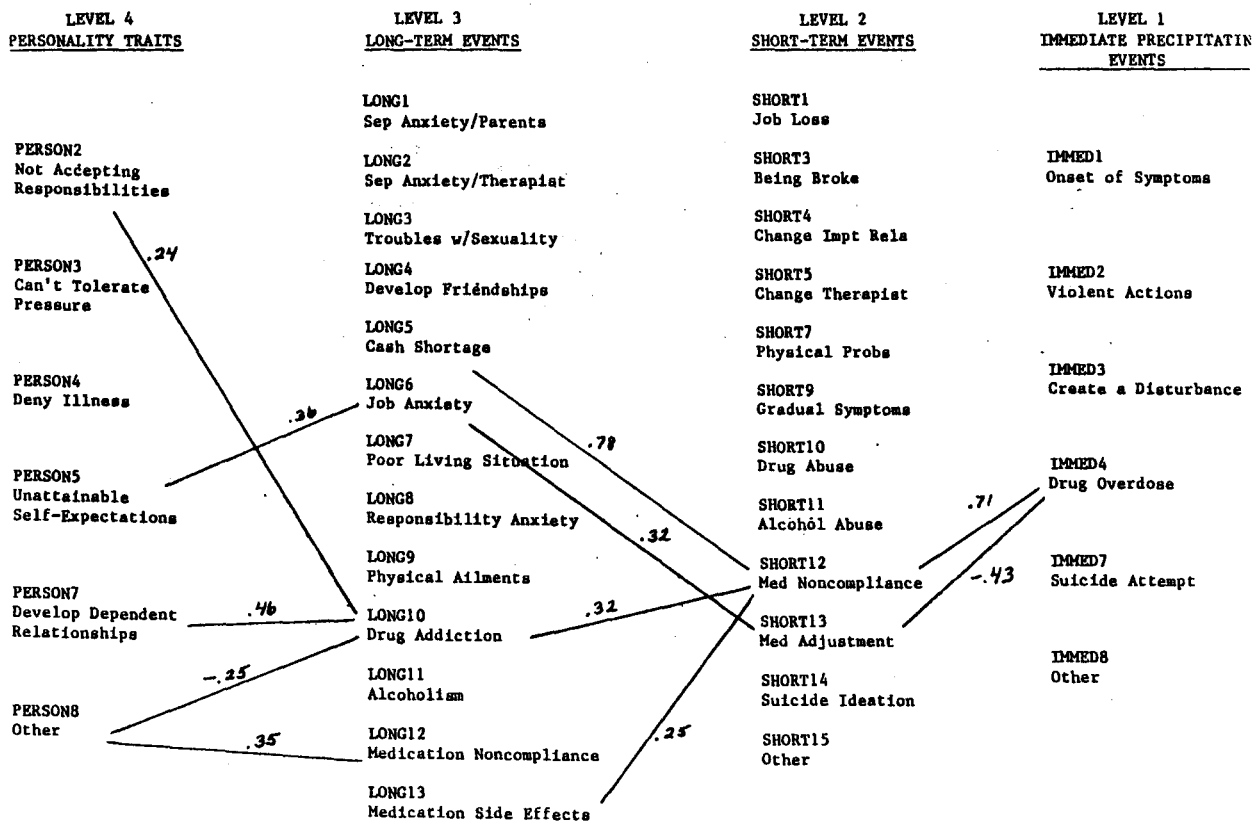
PATH ANALYSIS DIAGRAM

Create a Disturbance/Informant of Rehospitalized Clients



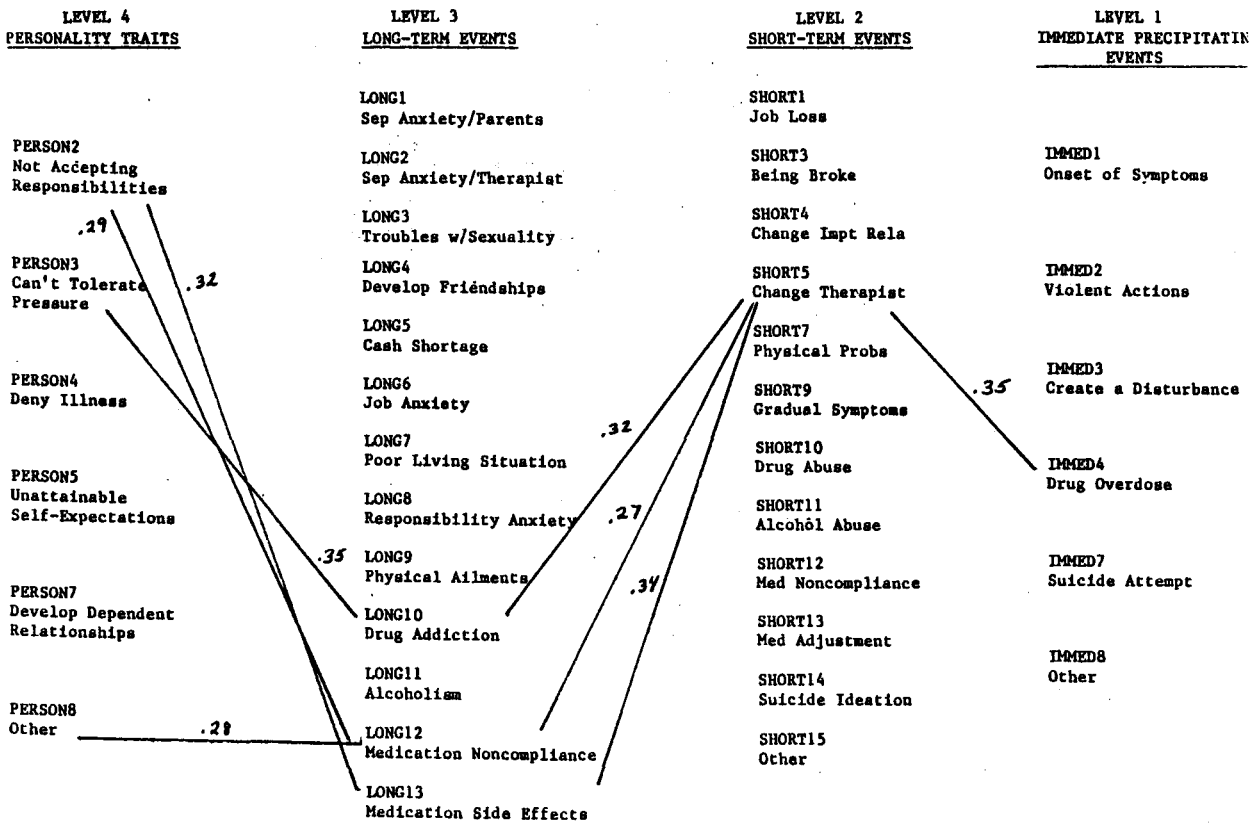
PATH ANALYSIS DIAGRAM

Drug Overdose/Self-Report Non-Rehospitalized



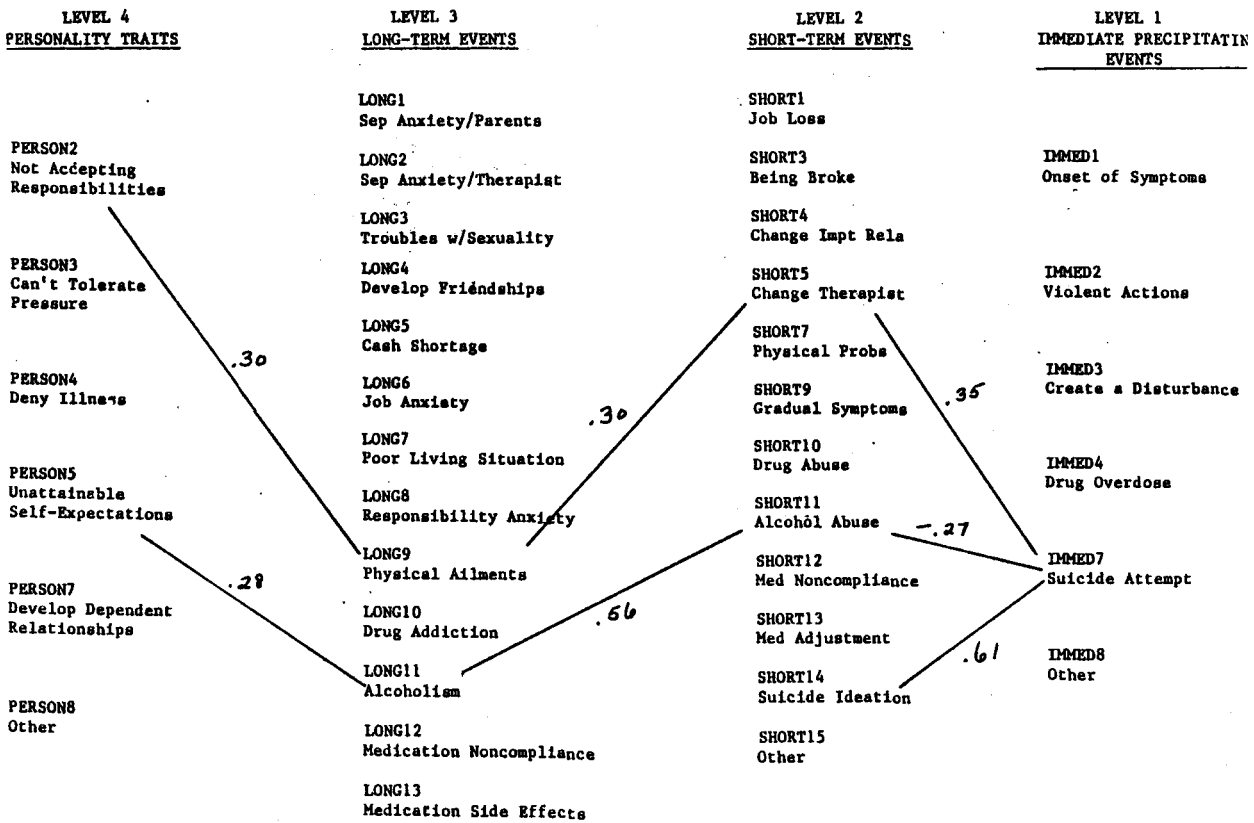
PATH ANALYSIS DIAGRAM

Drug Overdose/Self-Report Rehospitalized



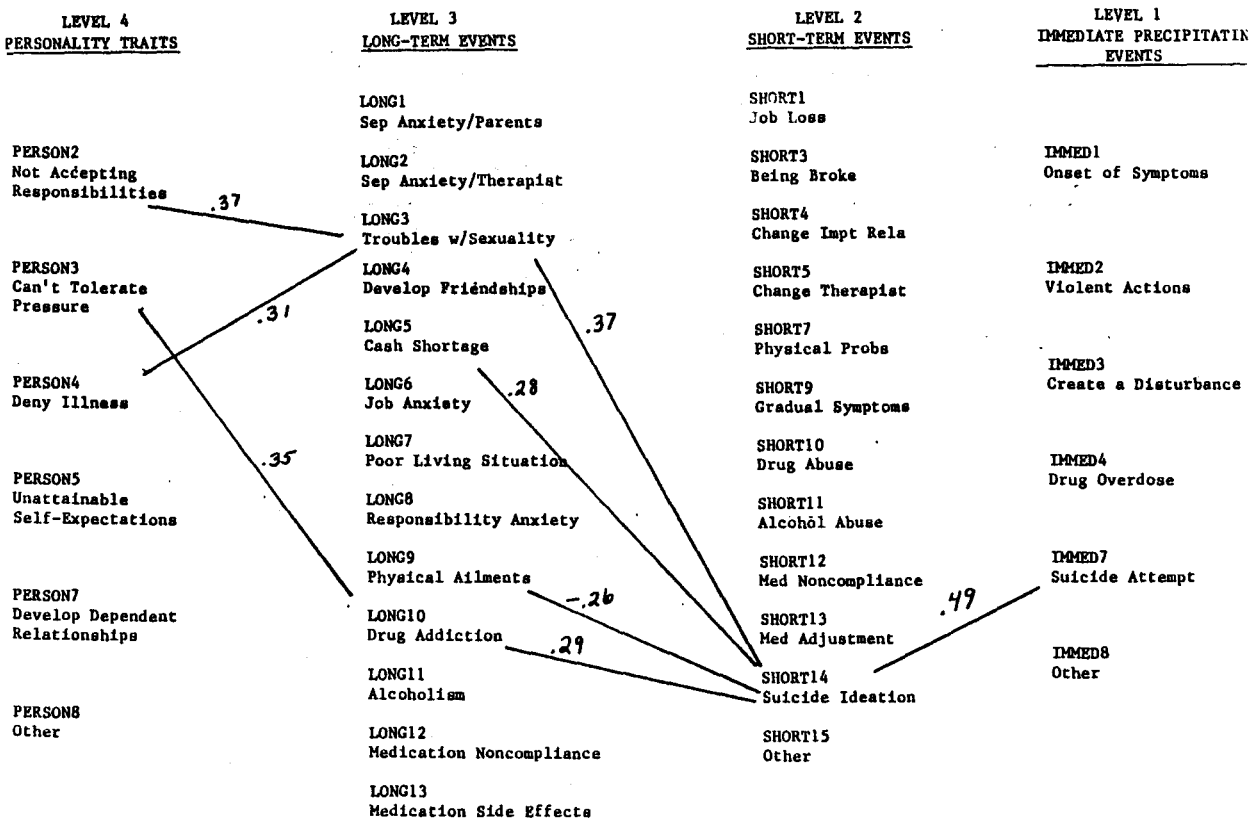
PATH ANALYSIS DIAGRAM

Suicide Attempt/Self-Report Non-Rehospitalized



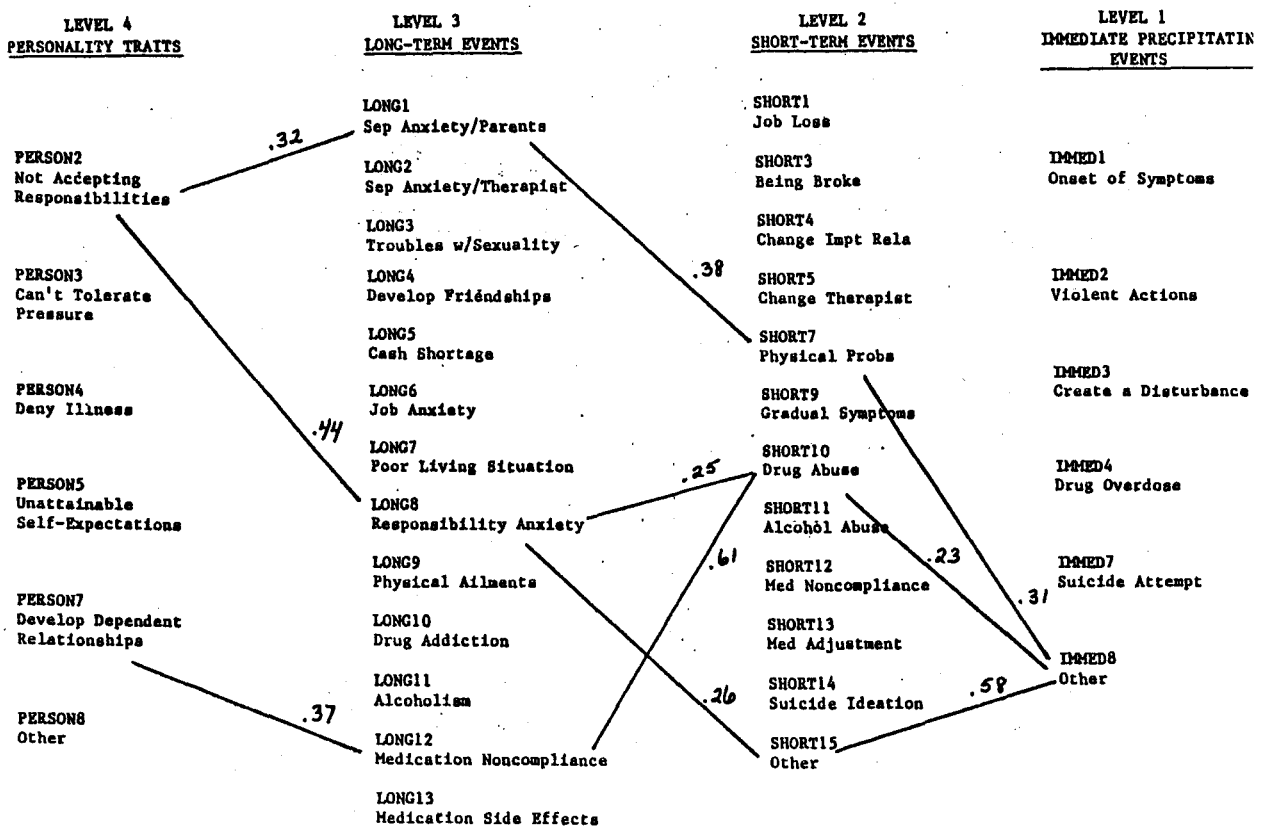
PATH ANALYSIS DIAGRAM

Suicide Attempt/Self-Report Rehospitalized



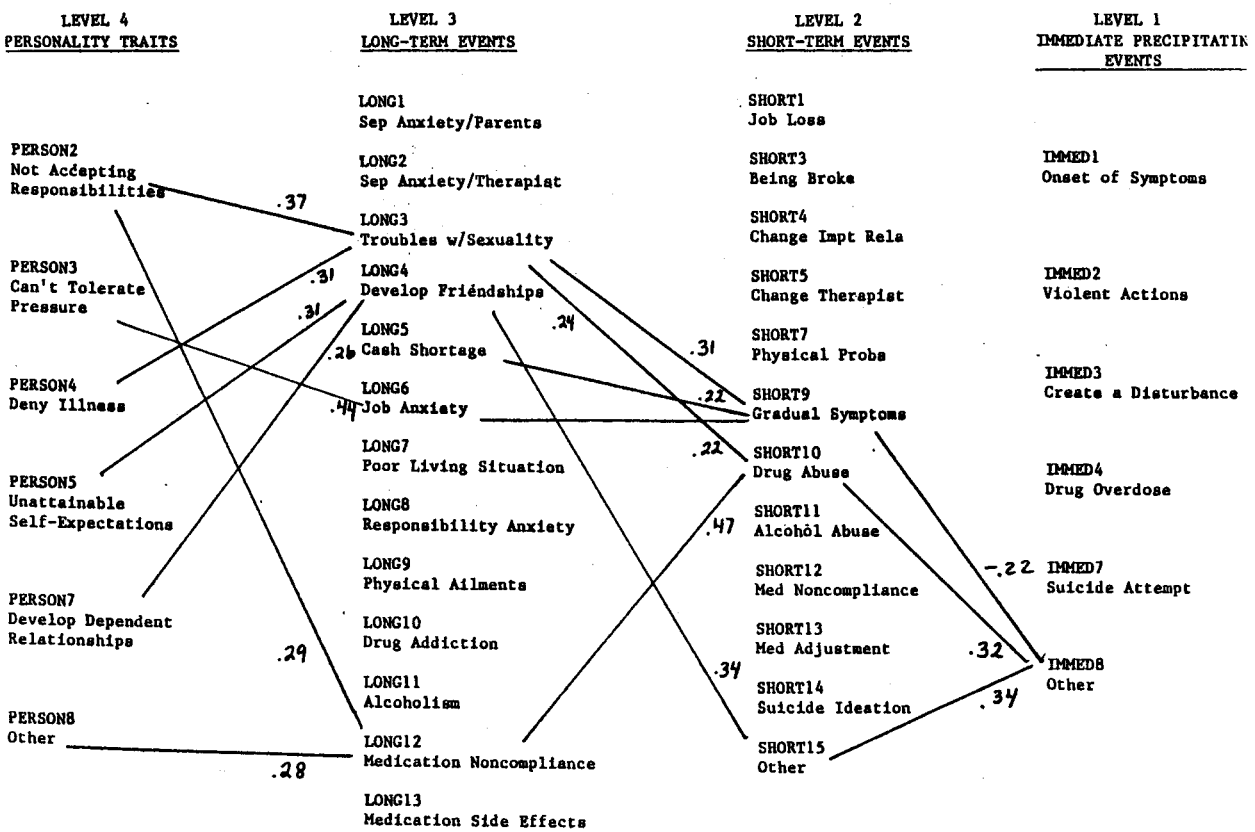
PATH ANALYSIS DIAGRAM

Other Immediate Events/Self-Report Non-Rehospitalized



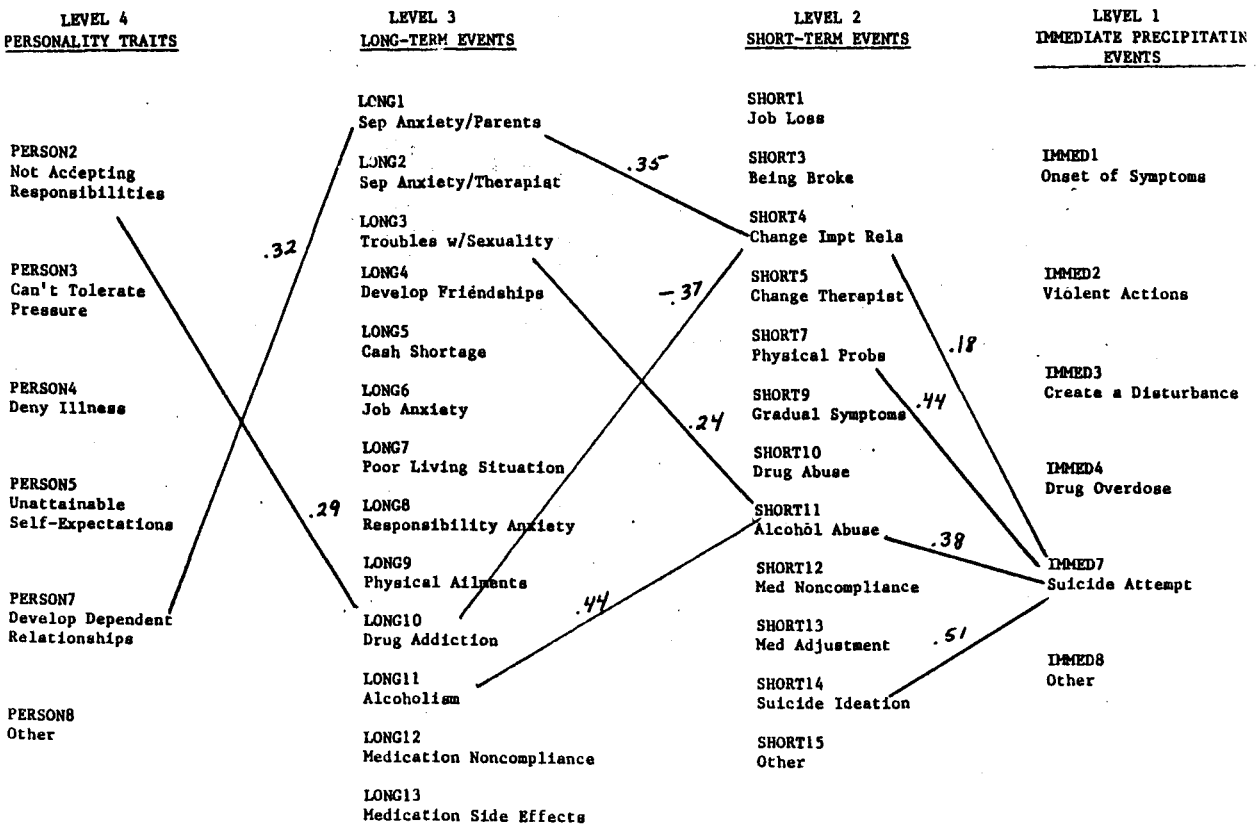
PATH ANALYSIS DIAGRAM

Other Immediate Event/Self-Report Rehospitalized



PATH ANALYSIS DIAGRAM

Other Immediate Event/Informant of Rehospitalized Clients



APPENDIX D

QUALITATIVE RESPONSES

NON-REHOSPITALIZED

Internal Locus of Control:

1117, 30,m

"couldn't control myself and couldn't find a job"
"I could have been stronger"

1120, 28,f

"I had an argument with my mother"
"I could have droved to a halfway house or something guess"

1122, 23,f

"The problem was that I couldn't decide whether or not to approach a person in a crowd at a basketball game who I thought was my brother"
"I could have confronted this person"

1116, 37,m

"to decide what would bring the most confidence in the future"
"resolution was formed in the support of friends"

1103, 19,f

"a friendship involving sex"
"could have been open, straight, and direct"

1105, 20,m

"stop smoking for a month"
"giving up and not doing it anymore"

1107, 30,m

"I might have gotten beat-up"
"avoided the person"

1111, 20,m

"Moving back into my home after my 2nd hospitalization"
"I could have talked to my mother, or vice-versa about my situation"

1154, 18,m

"My mother died"
"Crying or having someones shoulder to cry on."

1155, 20,m

"I got into an argument with my Dad"
"I could have been less defensive and listened instead"

1156, 18,m

"Being with social or mental rejects at a special show. A black boy tired to h;urt me. I should have bought a weapon and hurt him"
"I should have spoke up"

1159, 20,m

"Being in a large group of people, being expected to participate and feeling unable to do so. A fight resulted between myself and another member. It was so typical of the problems I was having on the "outside" dealing with people in general"
"Being able to take time off and relax. Talking about my problems with a social worker. Planning ways to provide "temporary escapes" from such situations."

2102, 52,f

"expecting someone home and not there"
"forgot about it"

2105, 35,m

"I gained 30 pounds of weight"
"I could have had my personal life better organized"

1163, 23,f

"I had to go to court to see if I could get social security"
"prepare before court hearing"

3103, 38,m

"Severe depression. Continuous failure"
"I could have occupied myself in an interesting activity"

3107, 45,m

"I was lost in an unfamiliar city - St. Louis. At a church function slowly the alcohol took effect. I didn't know south from east"
"I was not so bashful and asked a member of the congregation to drive me home"

3101, 31,m

"Almost lost my father last Christmas (82) he had breast cancer"
"Maybe if I knew how to deal with death"

3105,

"At present a bundle of things. Change of school, site and schedules, change or loss of nearly all my friends through big arguents, loss of medication, food, and $"
"I could have asked for food from this or some other social organization. The arguments etc. were eithin groups of organizations elsewhere and they sort a made the conflict."

3102, 49

"16 went into Natl Gard was in a car axdint than quit high school whan 22 years got "sick" It damimmench my braine."
"Maditson and discuss problems"

1162, 29,m

"I was in my apartment and I could not stop looking out the window. I make me paranoid"
"I took a prolixin"

2109, 55, m

"Ran out of money"
"work in a part-time job"

2101, 49,m

"cigarettes burn on good coat"
"stopped smoking on windy days"

2111, 28,m

"when I went to see the cubs first game it rains and I didn't get to see them play. I was frustrated all night"

"I could go in the men's washroom to stay warm. I was freezing"

External Locus of Control

1158, 20,m

"my girlfriend broke up with me."
"because I thought that I was in love"

2112, 26,f

"nervous breakdown"
"frustrating if you forget to take medicine"

3108, 42,m

"I drove my car in the fog, hit a tree and broke my knee cap. Because I was out of work for 8 weeks"
"Should have listened to my friend"

1161, 21,m

"my girlfriend left me"
"there was nothing I could do to change her mind. It's still frustrating"

1152, 30,m

"lifting a vacuum cleaner, and feeling without balance or mobility (result) almost falling over"

1112

"I got angry at the fact that one of the staff members at where I live said I was talking condenscendingly to another resident who is illiterate"
"The staff at where I live shouldn't have made a major issue out of this"

1114, 26,m

"Doing the dishes, this caused stress"
"Have someone else do them"

1115, 27,f

"I was very nervous when I was taking medication sometime after I stated to take my medicine"

"To have someone to talk to about why I worried alot"

1118, 36,m

"loss of job"
"switch to another job"

1119, 27,m

"wearing glasses everyday"
"talk to someone"

1121, 32,m

"problem with SS and problems looking for work and being unemployed"
"the mistake could have been corrected earlier with SS"

1123, 34,m

"Christmas with my family was very stressful"
"they went home"

1124, 35,f

"Being laid off from my job at the end of May, 1982"
"I don't think that there was anything that I or anyone else (except possibly for Reagan) to "solve" the problem of inflation"

1101, 21,f

"Ending a relationship"
"To have been able to talk about it"

1102, 23,m

"Going back to college"
"Don't go back to college"

1104

"I couldn't find a job and I was board to death. I was very lonely and depressed"
"nothing really"

1106, 18,m

"I was threatened by an older person and I was scared for my other relatives"
"call the police"

1109, 22,m

"going back on the bus from Thresholds my first day. While still in the hospital"
"They gave me some valium"

1150, 22,m

"I hear voices saying that my children and I will be killed"
"I went on medication"

1153, 28,m

"Starting at Thresholds"
"Convince me that the program at Thresholds is actually for my benefit"

1157, 20,m

"family fight and really frustrated with other people"
"to help me fight my problems"

2115, 26,m

"Getting along with other people. I had a fight with aobut 3 people at the nursing home. Thats bad news" "I fought the last person. He talked about how his race was so much better"

"I thought there was nothing could solve this problem"

2107, 50,f

"When I didn't get m;y dogentin and I was so nervous I couldn't work cause I shook so much"
"my Dr. told me my cogentin their I just had to ask for it"

2104, 23,m

"When I have to wait in line. It bothers me and I don't have patients"
"I might have to wait years until that improves"

1166, 32

"Moving to York House, I couldn't find papers or personal possessions."
"We could have labelled the boxes"

1165, 28,m

"My pa says I stink. It was frustrating because he says I don't use enough water and I do"
"I told him I use water. I told him I pass gas."

1164, 35,m

"Living on my own at YMCA, being away from home"
"Lived on my own at earlier age"

3104, 38,f

"I attempted suicide because I had been rejected for Social Security Disability benefits that were due to me because of the fact that I am a erebral Palsy Spastic handicapped person.

"If someone would have taken the time to sit down with me and completely explain the Social Security system to me"

3106, 20,m

"Being in grade school my classmates didn't like me at all, they ignored me"

"My classmates could have treated me with love. could have visited me"

Unclassified

1113, 34,m

"Gotted ripped off on a dope deal"
"Honor"

1108, 31,f

"Family therapy sessions, I felt I was regressing"

1151, 22,m

"An argument with my psychiatrist."
"Persevered - we both saw the stressful points"

2103, 34,m

"looking for a job in 1980"

2110, 22,f

"I was fired and ran out of medication"

2202

"A fire in hotel room"
"Move to a new hotel. Couldn't manage rent and food"

REHOSPITALIZED

Internal Locus of Control

1225, 24,m

"I was under pressure to find a place to stay"
"I could have saved my money"

1230, 30,m

"working carpentry"
"I quit my job"

1205, 30,m

"Problems with my family. I began believing that my real parents were not my parents actually.
"Take medicine"

1204, 24,f

"Trembling of the legs"
"Take cogentin for it"

1202,

"Had problems getting along with people at school and at home. Also had drug problems"
"By trying to stay away from drugs and to concentrate more on school work"

1219, 33,m

"I lost my job" "I was worried about money"
"I went to see my worker"

1218, 31,m

"I was rehospitalized because I was under stress for some weeks"
"My job makes me work during the night, so I lacked of sleeping"
"quitting the job"

1216, 22,m

"Drugs"
"Should never have taken drugs"

1213, 24,m

"I had an accident on Lincoln Ave. It freezed my private life in a hospital"
"I should have concentrated myself in a hospital discipline my mental health"

1206, 18,m

"my father was shot and killed"
"take out revenge"

1223, 22,m

"not attending school, realizing that school is not everything"
"having a group of friends"

1220, 28,m

"I didn't get a haircut and my ma didn't like it. I wore torn clothing"
"I could have gotten a haircut and I could have worn new chothing. She put me in Chicago-Reed Mental Health Hospital"

1264, 32,m

"I was crying uncontrolably after being with friends of mine after taking a trip to Indiana. The trip was like my past going before my eyes, and I thought those feelings were passe. I went to the hospital the next morning."
"I have had to confront these feelings (that I had nothing to show for my life) honestly, and I have gained alot of new friendships and support. I am very fortunate because if it wasn't for this, I wouldn't be taking the risks I have been ding at this time.

2207, 58, f

"losing social security"
(get) "more work"
"a visit to my mother"

1252, 22,m

"Pressure from school, girlfriend breakup, flash backs from LSD. My grades dropped drastically and I was ready to commit suicide"
"I realized it was a normal passage"

3209, 37,f

"I was working too hard and pushing myself to much"
"I go to my program coordinator and my mental doctor. -Sent to Reed"

1208, 20,m

"acceptance in school"
"talking, see a doctor"

1201, 22,m

"Getting out of high school"
"Escape to hospital"

External Locus of Control

2203, 30,f

"Getting slapped very very hard"
"I felt I did not deserve to be treated so poorly"
"cried it out"

2212, 24,m

"working at a night club around people drinking and enjoying loud music"
"I think I always dealt with trying too hard to get somewhere in my life and deal with alot of lonliness."
"Money is my major problem. I would like better living conditions and better relationships."

1257, 18,f

"School situation. But mostly social crowd outside of school. Mostly because lonliness and dwelling on the past." Too much chaos and confusion in the family.
"I wished to be left alone in order to find myself. Which actually did happen"
"I turned to 'angel dust' and drinking as a 'self-medication' idea"

1217, 45,f

"I was preoccupied with what a certain gorup of people were saying about me."
"I felt that I had not power to fight back. Support in fighting these people. I called the attorney general's office."

1256, 38

"I lost my job. The man in charge kept on stressing the job was too much for me. Mistakes were devastating"
"possibly by taking my medication"

1259, 19

"Drugs" "I was nearly dead"
"nothing"

2201

"When I was little I had an accident"
"couldn't walk"

2204, 29,m

"my woman left me"
"she did not give me love"

1227, 31,m

"People who help but don't know how to help"
"People should leave a person alone"

1228, 26, f

"I was pregnant and stopped taking my medication which brought on a very heavy depression and suicide attempts."
"The right medication and more support from my husband-at-the-time."

1229, 21,m

"Unemployed and didn't know what to do and my psychiatrist abandoned me and not finding out about situation of the Army"
"By my psychiatrist not abandoning me resolving the army situation and working part-time"

1215, 28,m

"Paranoia. My girlfriend left me forever"
"Give me some muscial earphones"

1211, 29,f

"I felt that my teacher was taking me down a peg and that my 'paranoia' was justified"
"If the teacher had been reported to the authorities and they had responded."

1209, 22,m

"I went to the hosital for a heart check and ended up in Elgin State"

1207, 20,f

"The move from my parents home to my own."
"To have gotten help on emotionally separating from there first."

1224, 27,f

"I couldn't express my feelings, which I held in and I finally bursted out and that was the beginning of my hospitalizations"
"Everything would have been ok, if I could have talked or expressed myself to someone else."

1222, 21,m

"frustration"
"not living at home"

1221, 33,m

"being caught talking under my breath."
"Getting my life together:
"For people on the staff to immediately respond to tihs and reassure me that everything is alright and that I don't have to leave"

1250, 31,m

"I was rehospitalized last time because I wan't treated as well the time before"
"nothing"

3203, 54,m

"EKG shock treatment at Hazel Wilson on the fourth floor" "I had to see my Aunt and I was late because I wanted to leave early"
"Not getting out of line because it was single file and it turned out I was last and late"

3204, 29

"Brain child ability to learn extraordinarily fast, just a bit of a temper when younger"
"listening to my plea being human have feelings did you been thought of us?"

3206, 54,f

"Ravenswood hospital found out I had arthritis of the rib cage"

3208, 42,m

"My father died. It caused me to swallow poison"
"My brother could have taken my car keys away. I had surgery performed"

3201, 43,m

"I was taken off Social Security disability"

1254, 24,m

"Car Accident" "Because this problem kept in hospital for 16 weeks"
"My parents should have bought me a car"

1258, 22,m

"Getting along with family - people in my neighborhood"
"Not getting enough sleep at night, giving my eating habits a break, eating out of frustration, unhappiness with life, coping with society."
"I could have gotten more support from family, friends to succeed in school."

1253, 29,m

"Falling in love, forming a rock band, Christmas holiday. She was away at school and I went maniac, then I became a Jesus Christ figure acting as the Mesiah to bring in Christmas."
"There was no slowing me down I was high as a plane"

1251, 22,m

"one day my father came home from work late, and I told him why did he come home late so my father caled me stupid, I suddenly became anger and I can't control it"
"taking it out with me and helping me by filling me with hope to go on in life"

1262, 26,m

"drinking alot and lost my apartment. And ended up in the hospital. Been drinking for years and trying to quit it can be very stressful."
"more support and understanding and someone to turn to. More persons caring and helping me stop drinking"

1261, 28,f

"My mother threw a fit and coerced my father into forcibly taking me to the state hospital."
"Something internal in my mother's psyche"
"Intervention by a concerned individual"
"A doctor specializing in neurology after interviewing with me intervened on my behalf."

2205, 53,f

"no place to live" "Everyone need a place to live so what can a person do"
"Get me a place alone by myself"
"put me in a hospital" "I did not like the idea of being put away because they didn't want me around"

2213, 25,m

"To have took up more time with me and tryed to help me more"

Unclassified

3205, 58,f

"Blood letting during the late delayed menopause. Birthed an infant daughter and went back to working"
"I sometimes like to drink champagne with my relatives"

2206, 49,f

"My last unhappy event was going back to school. I haven't been in school since 1949."
"I like school and I can't remember anything"

1263, 34,f

"My mother does not have a job and I visited my mother for money"

1226, 31,f

"I don't have any problems"

1210, 36,m

"Socialization. Social Discord"
"Time spent in discussion"

1212, 29,m

"Problems at work"

3207, 58,m

"seizure"
"hosp"

1203, 24,m

"I lost a job"
"I need the money"

APPROVAL SHEET

The dissertation submitted by Robin S. Turpin has been read and approved by the following committee:

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Professor and Chairman, Psychology, Loyola

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Associate Professor, Psychology, Loyola

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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.

November 14 1984
Date

Director's Signature