One Year After Discharge: Community Adjustment of Schizophrenic Patients

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From a group of 299 schizophrenic patients discharged after a study of short-term drug action, 254 were living in the community a year following initial discharge from the hospital. These expatients were evaluated to assess their community adjustment and to determine the relationship between aspects of each individual's premorbid history and course of illness with subsequent community adjustment. While most of the expatients were functioning at a social level comparable to their own "best former" level, only 11 percent could be described as functioning as well as the average person in the community. A number of background, psychiatric history, and environmental factors were found to be related to community adjustment; of these, the characteristics of the environment to which the patient was discharged seemed especially significant.

THE PROBLEM of assessing the outcome of psychiatric hospitalization is raised almost automatically when a researcher is faced by a population of patients. The study reported here has as its focus the community adjustment of expatients rather than their psychiatric condition per se.

Specifically, our purposes were to: 1) assess the community adjustment of schizophrenic patients both generally and specifically in terms of interactional and instrumental role performance; and 2) determine the relationship between aspects of the patient's premorbid history and course of illness with subsequent community adjustment.

This study is part of a larger cooperative study (National Institute of Mental Health Psychopharmacology Service Center Collaborative Study of Drug Treatment in Acute Schizophrenia) in which nine hospitals participated. The major focus of the collaborative study was the evaluation of short-term drug action in acute schizophrenic psychoses by research teams representing the major disciplines concerned with the hospital treatment of schizophrenics (psychiatry, psychology, social work, and nursing).

The general background of the project, the details of the research design, the characteristics of the samples and the hospitals, and findings regarding major drug-placebo differences and the incidence of side effects have been published elsewhere by the NIMH-PSC Collaborative Study Group(2). Within the framework of this larger study the social work members of the research teams conducted a follow-up of the discharged schizophrenic patients which is reported here.

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Subjects

The subjects were newly admitted, acutely ill schizophrenic patients who had participated in the NIMH-PSC Collaborative Study. Only those patients who were in the community at one year following initial discharge from the hospital were evaluated. Therefore, patients who were never discharged or who had been discharged but were in a hospital again at one year following their discharge were excluded.

Method of Data Collection

The data used in these analyses were collected by research social workers at the nine collaborating hospitals on the basis of clinical interviews with family members and/or the patient at the time of initial hospital admission and one year after discharge. After the interviews, information and ratings were recorded on precoded instruments.

In addition, under the social worker's supervision, each relative and patient completed the KAS Behavior Inventory(1). These inventories are designed to elicit descriptions of behaviors occurring in mental patients (e.g., items such as "has bad dreams," "gets very sad, blue"), descriptions of performance of socially expected activities, and expectations of performance (e.g., items such as "helps with household chores," "gets along with neighbors"). These items are subsequently grouped into clusters.

Characterization of the Patient Population One Year After Discharge

Of the 299 patients who were discharged from the hospital, 59 percent succeeded in avoiding rehospitalization for a year, and of the 123 patients who were rehospitalized, 78 were subsequently discharged a second time. Thus, 85 percent of the population were in the community a year following the initial discharge.

Ratings of General Psychopathology, Suspiciousness and Withdrawal, and Retardation on the KAS Behavior Inventory by the informants indicated very little overt symptomatology in these expatients. Fully 68 percent of the patients showed almost no symptomatic behavior on the items in the General Psychopathology symptom cluster, and the figures are comparable for the other clusters. Thus, it seems entirely reasonable that this group of patients described by informants as comparatively free of gross manifestations of psychopathology would not be in the hospital. A relevant question regarding these patients is whether they function in the ways expected of them by the community in general, and by those with whom they are in closest contact in particular.

A series of ratings by the social workers measured the general functioning, and social interaction of the patient. The first item, "Present Over-all Functioning," was rated by the social worker on the basis of the interview and all available information. It appears that only 11 percent can be described as "as good as the average person in the community." On the other hand, when the patient's social functioning was compared with his own "best former" social functioning, we found that a large majority of the patients had either returned to the best former level or fallen only slightly below it.

The level of the patient's social interaction with other people was described by the informant as active or moderately active for 57 percent of the patients and as slightly active or inactive for the remainder. This seems to indicate a greater degree of social involvement than might be expected from the over-all functioning described above.

It may reflect, in part, the necessary social interaction within a family setting rather than true social activity involving choice, for almost all patients were living with others. When the present level of activity with others is compared to that of the patient at his best, 68 percent of the patients were as involved with others as at their "best," but if we exclude patients whose "best" was "slight" or "no activities with others," we are left with 57 percent of patients in the community who both showed some involvement with others and were functioning as well as "at best."

When the patient and the informant were asked to rate the patient on their expectations of performance and on the actual performance of a group of common adult functions in the community, a similar picture emerges. The patients' ratings for both variables are significantly different from each other for men and women (patients' expectations of performance by sex, $\chi^2 = 8.304$, d.f. $= 2$, $p \leq .02$; patients' rating of present performance by sex, $\chi^2 = 9.521$, d.f. $= 2$, $p \leq .01$).

Despite the fact that male patients expected to be doing less than women patients and reported themselves as doing less, the informants saw no such differences. According to the informants' ratings, about one-third of these patients have an average score between 1.0 ("not doing") and 2.1 ("doing some") on the 16 items which make up the scale, and are not expected to be doing any better. Male patients described themselves as expecting and doing even less, while female patients expected and perceived a somewhat higher level of self-performance. However, even among the women patients only 36 percent described themselves as carrying on such day-to-day activities better than "some of the time."

Another aspect of the patient's functioning in the community which we examined is work performance, which differs from social interaction insofar as it is goal-directed and expected to produce results, such as earning a living or keeping house. Thus performance was examined for two roles—wage earner and housewife. (A third group—students—was also identified, but it was too small for meaningful analysis.) The remaining patients were classified in one or the other of the two roles; classification was made on the basis of the role in which a patient was expected to function, whether presently able to do so or not.

Among actual or potential wage-earner patients (including both men and women) who were in the community one year after discharge, only 12 percent had never held a job. Forty-four percent had held one job, and an equal percent had held two to six jobs. At the time of the follow-up, 58 percent were actually employed. However, although fully 88 percent of these patients had been employed at some time during the year, only 54 percent were earning enough to be self-supporting. When work performance is compared to performance of the patient at his best by means of a comparison of the skill level of his present job with the one he held at his best, 68 percent of the patients who were employed at the time of follow-up were working at a level compatible with their education and training.

For the housewife patient, the satisfactory performance of household tasks might be considered comparable to being self-supporting for a wage earner. It appears that 64 percent of the women expected to function in this area were doing so. It may be that this higher level of success is due to the greater latitude and less exacting standards for performance in household chores than in paid employment.

The degree of compatibility with people the patient is called upon to deal with in his work role was assessed by the social worker for both presently employed wage earners and for housewives. Sixty-four percent of the workers, compared with 47 percent of the housewives, were described as compatible. This difference is statistically significant ($t = 2.38$, $p \leq .01$).

Thus, we can describe a composite ex-patient one year after his discharge. He has not been hospitalized and has not required hospitalization during the year, nor does he show evidence of active psychopathology. On the other hand, his functioning is not at the level expected of members of the community. He appears to satisfy the expectations of his own family and himself by virtue of their realistically low level, and he is not regularly performing socially expected activities, according to either his family or himself.

Despite this description of a depressed level of functioning, the exhospitalized schizophrenic is more likely to be employed than not after one year and, if employed, is more likely to be working at a level equal to his best and getting on with his co-workers.

The housewife, while managing her household activities satisfactorily, is not

as likely to be compatible with her neighbors as is the wage earner with his coworkers.

Prehospitalization History and Subsequent Community Adjustment

In our search for relationships between a schizophrenic's prior condition of life and his posthospitalization adjustment, we have conceptualized our variables as falling into one of three major areas:

Environmental and/or genetic factors of background over which the individual exercises no control (Table 1);

Psychiatric and treatment history (Table 2);

Environmental factors which may be affected by the individual's behavior and behaviors themselves (Table 3).

The selection of variables in each category has been guided by several considerations:

1. Prognostic significance in previous studies (variables such as marital status, mental illness of parents, number of previous hospitalizations).

2. Demonstrated power in predicting short-term psychiatric improvement in the NIMH-PSC study (3). (Examples in this category include ratings of family's supportiveness and contention and the prehospitalization family type.)

3. Desire to assess the prognostic significance of the NIMH-PSC study hospitalization (variables such as study drug treatment, psychiatric status following treatment, length of hospitalization).

All analyses reported in this section are χ^2 analyses significant at the .05 level or better.[1] Due to limitation of space, the cross-tabulations on which the analyses are based cannot be presented here. They are available at the Psychopharmacology Research Branch, National Institute of Mental Health.

Background Predictors

Table 1 presents those assessment measures at one year following discharge which are significantly related to our selected background factors. The effects of sex and race are remarkably limited. Among wage earners, men were more likely to be fully self-supporting than women; and among those totally dependent upon others, Negroes were more likely than whites to be

[1] All variables were tested for sex differences. For those variables where there were such differences, all subsequent analyses were performed separately for men and women.

TABLE 1

Assessment Measures at One-Year Follow-Up that Are Significantly Related to Selected Background Factors

FOLLOW-UP ASSESSMENT MEASURE	BACKGROUND FACTORS				
	RACE	SEX	FATHER'S EDUCATION	FATHER'S MENTAL ILLNESS	MOTHER'S MENTAL ILLNESS
Rehospitalization				*	*
Informant's rating of patient's General Psychopathology					*
Over-all functioning			*		
Comparison with functioning "at best"			*		
Patient's rating of expectation of performance		*			
Patient's rating of level of performance		*			
Financial adequacy of wage earners	*	*			

* Significant at the .05 level or better.

dependent upon public welfare as opposed to family sources. Both of these findings appear to be the result of factors operating upon people in general rather than schizophrenic expatients in particular.

The one other sex difference we found is in the area of patients' self-reports of expectations and performance of activities, which was described in the previous section. Women reported both their activity expectations and present level of performance as higher than men.

Presence of mental illness in either parent raised the likelihood of rehospitalization, and the mother's illness was associated with a sicker rating on the General Psychopathology cluster by the informant. Higher education of the father was associated both with a higher level of over-all functioning and with a greater likelihood of returning to the best former level of functioning.

Psychiatric History Predictors

Table 2 presents the results for the psychiatric history predictors.

1. Number of previous psychotic episodes is related only to the informant's expectations of the patient's performance. If the patient had had prior episodes, the informant either expected that he would do nothing or would be doing things regularly, while the patients who had no

TABLE 2

Assessment Measures at One-Year Follow-Up that Are Significantly Related to Selected Psychiatric History Factors

FOLLOW-UP ASSESSMENT MEASURE	PSYCHIATRIC HISTORY PREDICTORS						PSYCHIATRIC RATINGS			TREATMENT AFTER DISCHARGE	
	PREVIOUS PSYCHOTIC EPISODES	PREVIOUS HOSPITALIZATIONS	RAPIDITY OF ONSET	AGE AT ADMISSION	DRUG TREATMENT	LENGTH OF HOSPITALIZATION	DEGREE OF ILLNESS AT SIX WEEKS	IMPROVEMENT AT SIX WEEKS	DEGREE OF ILLNESS AT DISCHARGE	PHENOTHIAZINES	PSYCHOTHERAPY
Rehospitalization					*					*	*
Informant's rating of patient's General Psychopathology								*a	*		
Informant's rating of patient's Suspiciousness							*a				
Over-all functioning			*								
Comparison with functioning "at best"			*	*b							
Social interaction											*
Informant's expectation of patient's performance	*		*			*					
Informant's rating of patient's performance						*					
Wage earners:											
Number of jobs since discharge									*		
Financial adequacy			*								
Regularity of work				*						*	
Skill requirements of job											*
Housewife's effectiveness											*
Interaction in work role						*c					

* Significant at the .05 level or better.
*a Active drug treatment only.
*b Significant for men only.
*c Significant for housewives only.

previous episodes were expected by the informants to engage in some activities. It is as though after prior experience with psychotic behavior, the relative can predict with certainty that things will be either good or bad, but the relative who faces an expatient for the first time is uncertain and equivocates. On the other hand, the number of previous hospitalizations shows no relationship to any rating or criterion of adjustment one year after discharge.

2. The more rapid the onset of the present episode, the more likely the patient was to be financially self-supporting, the higher his level of present over-all functioning, and the more likely he was to have returned to his own best former level. Also, patients whose onset was rapid were expected by the informant to be "doing more" than those with a slow onset.

3. Patients who were older at the time of hospitalization were more likely to be working regularly than the younger group. On the other hand, younger men were more likely to have returned to their "best former" level of functioning than the older men. This may be in part due to the fact that the "best" functioning of the 16- to 20-year-old group is closer in time and kind of activity to the present than is necessarily true for the older patients.

4. Patients who received placebo treatment in the drug study were *less* likely to be rehospitalized than those who received any of the three active phenothiazines (thioridazine[Mellaril], fluphenazine [Prolixin], chlorpromazine [Thorazine]). Because this finding was so unexpected and we were unprepared to recommend placebo as treatment of choice on the basis of it, we explored a number of possible variables that might have caused this relationship, which we felt must be an artifact. Our explorations and post hoc explanation are presented in the discussion section.

5. The length of hospitalization is related to compatibility of housewives with their neighbors; the shorter the hospitalization, the greater the compatibility. A higher level of performance, both actual and expected, as rated by the informant for both men and women, is also associated with shorter hospitalization.

6. Psychiatric ratings made during the course of treatment show more relationships to informants' ratings of symptomatology one year following discharge than to the measures of interactional or work role functioning. For patients who received active drug treatment in the study, there is a positive relationship between improvement at the end of six weeks of study treatment and the absence of psychopathology as rated by the informant one year after discharge. For the same group of patients, fully 73 percent of those rated as normal or showing only borderline illness after six weeks showed no Suspiciousness as rated by the informant, whereas among those who were rated by the psychiatrist as markedly or severely ill, only 46 percent showed no Suspiciousness one year after discharge.

Degree of mental illnesss at time of discharge is also related to a lower rating on the General Psychopathology cluster by the informants. Among wage-earner patients rated as not ill at discharge, 73 percent held one job in the year, 27 percent had two to six jobs, and none of them had been unemployed the entire year. With evidence of even borderline illness at discharge, the percentage of patients who had only one job is reduced to 45, and the other percentages go up correspondingly.

7. Patients who received phenothiazines and/or psychotherapy after discharge to the community were less likely to be rehospitalized than those who did not. Receiving psychotherapy is also related to a higher level of social interaction, a greater likelihood of a wage earner's job being commensurate with his training and, unexpectedly, less effective performance in household duties by the housewife.

Phenothiazine therapy after discharge shows an interesting relationship to regularity of work attendance by wage earners. Of those who received drugs not at all or continuously, some 80 percent were regular in their work attendance. Of those who received some drug therapy, only 56 percent were regular. A plausible explanation for this finding is that patients who received no phenothiazines did not require

them in the judgment of the treating physician and therefore did not receive them; those who had continuous medication both needed it and received it; while the patients who had medication some of the time represent a group who needed but did not receive it, hence their lower performance.

Environmental and Behavioral Predictors

Table 3 presents significant relationships of environment and behavior prior to hospitalization with status one year after discharge. It is notable that variables in this category yielded an average of five significant relationships per variable, compared with about two for the psychiatric history predictors and background factors. If we rank all the predictor variables in order of number of significant relationships to aspects of one-year status, the first three (prehospitalization family type, social interaction just prior to hospitali-

TABLE 3

Assessment Measures at One-Year Follow-Up that Are Significantly Related to Selected Environmental Factors

FOLLOW-UP ASSESSMENT MEASURE	ENVIRONMENTAL FACTORS						
	ACTIVITIES WITH OTHERS "AT BEST"	ACTIVITIES WITH OTHERS JUST PRIOR TO HOSPITALIZATION	MARITAL STATUS	PREHOSPITALIZATION FAMILY TYPE	CONTENTION IN FAMILY	FAMILY'S VIEW OF SERIOUSNESS OF ILLNESS	SUPPORTIVENESS OF FAMILY ENVIRONMENT
Informant's ratings:							
Patient's General Psychopathology	*	*			*		
Patient's Suspiciousness					*		
Patient's Withdrawal and Retardation	*	*					
Over-all functioning		*	*	*			
Comparison with functioning "at best"		*		*a	*		
Social interaction	*	*					
Patient's rating of expectation of performance			*	*			
Informant's rating of expectation of patient's performance				*a			
Patient's rating of level of performance			*a	*a			
Informant's rating of patient's level of performance		*					
Wage earners:							
Number of jobs since discharge			*	*			
Financial adequacy				*		*	
Regularity of work				*			
Skill requirement of job				*			
Interaction in work role		*b					
Housewife's performance of duties					*		
Housewife's effectiveness					*		

* Significant at the .05 level or better.
*a Males only.
*b Wage earners only.

zation, and the social worker's rating of contention in the family) all come from this category.

Two variables, marital status and family type, were designed to complement one another. Marital status has been considered to indicate the attainment by the patient of a level of health at some point in time which enables him to marry. It has also been considered as having positive therapeutic value for the patient. The family type variable which deals with the patient's living setting enables us to separate these two aspects of marital status. Since there were significant differences in both these variables by sex, all analyses were performed separately for men and women.

It appears that family type is related to all four measures that marital status is, and it has an effect on five additional variables, making it the strongest of our predictors.

Single or presently unmarried patients and those from parental homes were more likely to be functioning at one year on a level comparable to the lower 20 percent of expatients than were those who were married and/or living in conjugal homes. Also, men who lived alone or with nonrelatives were more likely to have returned to their best former level of functioning than those who lived with relatives of any kind.

Marital status and family type also related in a number of ways to instrumental performance for wage earners. Those married and those from conjugal homes were more likely to have had one job in the course of the year as opposed to none or more than one. Expatients who lived alone or in conjugal homes were more likely to be self-supporting than those from parental homes. Patients from conjugal homes were more likely to be working regularly and working at a skill level comparable to that of their best period.

The ratings of performance by both the informant and the patient himself show similar patterns. Single patients and those from parental homes were more likely to be described as not performing the socially expected activities included in these ratings than were patients who were married or from conjugal homes.

On the basis of the interviews held by the social workers with members of the patient's family at the time of hospitalization, ratings were made of: 1) potential supportiveness of the home environment; 2) contention and disagreement in the family; and 3) perception of seriousness of illness by the family.

There is a positive relationship between the rating of the patient's over-all functioning and the potential supportiveness of the family environment as recorded by the social worker one year earlier. Also, when no contention has been seen in the home, the patient was more likely to have returned to his best former level of functioning. Both of these characteristics of the home environment also increased the likelihood of the housewife patient's effectiveness in handling household chores. In addition, patients from homes seen as supportive and lacking in contention were more likely to be rated as not suspicious by the informant. Patients who showed an absence of general psychopathological symptoms also came from homes where contention was not seen.

The family's perception of the seriousness of the patient's illness is related to the wage earner's financial self-sufficiency. The more self-sufficient patients were seen as mildly or not ill at all by their relatives at the time of hospital admission. Since none of the patients could realistically have been described in this way at the time, the relative's judgment can be seen as more of an expression of optimism regarding the transitory nature of the illness than as a realistic view of the situation.

Finally, we will examine the relationship of the patient's social interaction with others, both when he was "at best" and just prior to the time of hospitalization. This particular behavior was chosen since social withdrawal and isolation are considered as important manifestations of the schizophrenic's illness.

Patients who were only slightly active or totally inactive at their best were more likely to be so a year after discharge; they were also more likely to be rated as sicker by the informant on the General Psychopathology and Withdrawal clusters. The patients described as totally inactive just

prior to hospitalization showed a similar picture; in addition, their over-all functioning a year after discharge was lower than that of patients who were at all active and they were less likely to have returned to their best former level of functioning. If employed, they were more likely to be incompatible or indifferent in their relations with fellow workers than the others. The informants' ratings of level of performance place these patients at the lowest end of the scale.

Discussion

First, let us resummarize the description of the discharged schizophrenic patient a year after his hospital experience. He has not been rehospitalized and he shows very little clinical overt psychopathology. The expatient is employed or is functioning as a housewife. He appears to be functioning socially as well as he ever did, and his performance of socially expected activities lives up to his own and relatives' expectations. On the other hand, the expectations of both the informant and the patient are fairly limited; informants expected only a third of the patients to function at what we might consider a "normal" level. But the clearest demonstration of limited functioning is provided by the social worker's rating, which indicates that only 11 percent of the patients are functioning at a level equal to the average person in the community.

Since the other patients who are not up to the level of the average person (89 percent) are nevertheless there to be rated after a year, presence in the community cannot be taken as a clear indicator of absence of psychopathology. Indeed, the prediction of rehospitalization is at best difficult. Mental illness of parents is the only factor outside of specific treatments which is related to probability of rehospitalization. Phenothiazines and/or psychotherapy after discharge decrease the likelihood of rehospitalization and so did placebo treatment during the course of this drug study.

An examination of possible causes for this effect of placebo treatment, which included differential discharge from the hospital and an assortment of other possible artifacts, revealed only two differences: placebo patients were hospitalized, on the average, six weeks longer than patients who had received an active drug treatment, and patients who received placebo or chlorpromazine were more likely to have fathers who were mentally ill. However, since the father's illnesss increased the likelihood of rehospitalization, the latter would make a higher rehospitalization rate of placebo patients more, rather than less, likely.

We are forced to speculate. It appears that the source of the difference in rehospitalization should be sought in the period of extended hospitalization which these patients experienced. Since there is no general relationship between length of initial hospitalization and rehospitalization, the source of the difference cannot be merely the extended hospitalization itself. We know that patients who received placebo during the six-week double-blind study improved less than drug-treated patients. It is possible that when lack of improvement was observed in the patient, the staff concluded that he was probably receiving placebo; when the double blind was broken and this was found to be the case, it may be that the staff responded to the "deprived" patient with some special quality in care, treatment, or concern thereafter.

The relationship of parents' mental illness to rehospitalization also deserves some comment, since the parents' illnesses are not related to any measures of functioning at one year after discharge. The relationships to rehospitalization may simply reflect an awareness of the mental hospital as a resource rather than being evidence of more serious illness.

The general psychiatric ratings of mental illness or amount of improvement, either after the course of the study or at the point of discharge, show only limited relationship to level of functioning in the community. On the other hand, these same psychiatric ratings show good agreement with the informant's present perception of both the General Psychopathology cluster and Suspiciousness.

Thus there is consistency over an extended period of time in clinical psychopathology viewed both from the vantage point of a hospital psychiatric rating and from the presumably more involved vantage point of a relative. Taking into consideration the fact that both distributions are truncated by the presumed absence of the sickest patients, this relationship becomes all the more striking.

The single fact about the patient which contributed the most to the evaluation of his present functioning was his prehospitalization family type. Did he live in a parental home, a conjugal home, or alone? Patients who lived in conjugal settings were more likely to be performing successfully in the work role on all four measures of work performance. Over-all functioning was also higher for these patients, and they expected more of themselves. Men from conjugal homes were also more likely to have returned to their "best" former level of functioning, to rate themselves as performing better, and they were expected to engage in more activities by the informant.

This finding of better instrumental performance on almost all measures is open to two possible interpretations. The first is that the other person in a conjugal setting, i.e., the spouse, is less predisposed to tolerate inadequate performance and therefore only those expatients who can perform are able to survive in that environment. If this were the case there would be differential rehospitalization associated with family type, which does not occur.

We also examined the distribution of severity of illness at the time of discharge in order to discover whether parental homes were willing to receive sicker patients and found that they were not. Therefore, we conclude that there are factors operating in the conjugal environment itself, rather than differential allocation of patients, which make for the better role performance of these expatients, particularly males.

Finally, we would like to emphasize the significance of the predictors which reflect on the environment in which the patient will be expected to function. For example, one feature of the conjugal environment is that conjugal families of our patients were less likely to show contention and disagreement than were the parental families. Such factors in the environment reflect upon ratings by the informant of the patient's psychopathology. To summarize the clinical implication of these findings, they confirm the view that specific characteristics of the environment to which a patient is to be discharged are of as great, if not greater, importance than his symptom remission in predicting his over-all functioning after discharge.

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