

A STUDY OF SAMPLE ATTRITION IN FOLLOW UP OF SCHIZOPHRENIA

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SUMMARY

This paper examines attrition in a sample of 96 schizophrenic patients followed up prospectively for a period of four years. The characteristics of 25 patients who were totally lost for the study are discussed. Among those followed up, two groups were identified based on regularity of attendance to the OPD. It was found that it was primarily the clinical course which determined regularity, most of those who were irregular having a more favourable course and outcome.

The importance of studying sample attrition in long term follow up of schizophrenic patients is stressed especially with reference to the continued use of psychiatric facilities.

Long term prospective follow-up studies using well defined diagnostic criteria are not often encountered in outcome research of schizophrenia. One such study sponsored by the Indian Council of Medical Research (ICMR) on "Factors Affecting Course and Outcome of Schizophrenia" in Madras, Lucknow and Vellore was a major step in this direction. The follow up of 96 Schizophrenic patients in the Madras Centre involved data collection at regular intervals spaced closely enough in time to permit a true prospectively generated picture of the course of illness.

This paper based on 4 year follow up data addresses itself to the aspect of sample attrition over time (Johnstone, 84; Prudo and Blum, 87). Although the importance of studying this phenomenon has been stressed (Tsuang, 79; Westermeyer, 88; Vaillant, 78) very few systematic attempts have been made to examine the characteristics of those schizophrenic patients who did not return to, or remain in psychiatric care.

This study, by virtue of being prospective, using well defined criteria and

standardised instruments and closely spaced follow-up assessments offered an unique opportunity to study in detail the phenomenon of drop-outs or attrition.

Aims :

There are 2 main issues which are dealt with here :

1. Attrition of the sample during follow-up; number and reasons for it.
2. Factors which determine regularity of treatment in those followed up.

Method :

96 first episode patients who fulfilled Modified Feighner's Diagnostic Criteria for Schizophrenia were included for follow up (Verghese *et al.*, 89). The sample consisted of an almost equal number of males and females (M=50, F=46). The catchment area chosen was one of 30 kms radius with the Government General Hospital as the centre. This was predominantly an urban area in the city of Madras. The Department of Psychiatry, Govt. General Hospital where the study was conducted is an active psychiatric service attached to the Post Graduate teaching institution—

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At inclusion, the following instrument were administered:

1. Present State Examination (PSE) 9th Edn. (Wing, Cooper & Sartorius)—to assess psychopathology and clinical profile.
2. Psychiatric and Personal History Schedule (PPHS)—To elicit past history and sociodemographic data.

This is a standardised instrument specifically developed for the WHO multisite study on 'Determinants of outcome of Severe Mental Disorders' (Sartorius, 86). It records psychiatric, medical, social and developmental history.

The Interim Follow-up Schedule (IFS) recorded every month details of important positive and negative symptoms and all aspects of treatment. This was possible because patients had to report to the OPD every fortnight to collect their drugs. In the case of those who did not report for a month, 3 consecutive letters requesting them to do so were sent off. If this did not elicit the desired response, the social worker paid a home visit to assess the clinical status and motivate them to attend the hospital. The patient was established as a drop out, if despite all these measures, contact was not possible for 3 consecutive months or there was definite information forthcoming about a shift outside the catchment area.

At the end of every year, a detailed evaluation was done using the PSE and the follow up PPHS which compared the current clinical, social, economic and occupational status to that recorded in the previous years. This kind of frequent contact with the patient and the family facilitated good rapport and consistent and sustained follow-up.

Results

Of the 96 patients included in the study, it was impossible to trace or contact

25 patients at the end of 4 years and hence these were considered as actual drop-outs. This group failed to respond to any of the follow-up measures indicated above and were totally lost for the study.

Rates of Attrition and Reasons :

The yearly figures of attrition of the sample and the reasons for it are as given in Table 1. The follow up rate at the end of 4 years was 74%.

TABLE 1—Reasons for Attrition

Year of follow up	Location	Access	Assessment	Total
1	1	4	0	5
2	2	5	0	7
3	4	4	0	8
4	—	5	0	5
	7	18		25

Characteristics of Drop-outs :

Among the patients totally lost for follow-up the sex distribution was almost equal. 16 of the 25 patients had been in a state of remission when seen last. A comparison of drop outs with the rest of the cohort on clinical and sociodemographic characteristics using Chi-square analysis showed that they were comparable. The loss of subjects from the cohort therefore has not been selective and is not likely to bias the findings (May, 76).

The difficulties in follow-up have been described as those of

1. Location
2. Access
3. Assessment

Location

This refers to patients who remained within the catchment area, but whose addresses could not be traced. Neighbours though aware of the shift in residence

were unable to provide us with the correct address. It was not possible to trace 7 patients over the course of 4 years. All but 1 of them had been in a stage of remission when seen last.

Access

Problems of access included death and shift outside the catchment area. While there were 3 deaths, the others had shifted outside the city and five women whose husbands were transferred moved out. 3 men and 2 women who continued to be ill were sent to their native villages where it was expected that the patient would be better tolerated by the community without the stresses of urban living conditions. 2 patients died due to physical problems and one female patient who was facing an imminent divorce killed herself.

Assessment

This posed no problem since there was not a single instance of refusal or non-cooperation.

Regularity of follow up

A careful look at the 71 patients who continued in the study revealed the presence of 2 fairly distinct groups (A & B). Group A comprising of 37 patients reported regularly to the OPD on their own accord without any reminders. The second group (B) of 34 patients might have dropped out if energetic measures to contact them had not been made. This group showed little interest or motivation in being regular but complied eventually because of the rapport established with them over the years. They had to be consistently reminded several times before they were due for follow-up interviews. This is the group that we would like to describe as 'potential' drop outs since they were very much within the catchment area, were aware that they had to report for review and yet had to be coaxed into

doing so. It was therefore, felt worthwhile and meaningful, to study in depth these 34 patients whose reasons for irregularity in OPD attendance was primarily non-geographical. Hence they were compared with Group A on inclusion, course and treatment variables.

Analysis and Results

36 explanatory variables were compared between the two groups. Some of them were :

(a) Socio demographic :

Sex, age, family type, marital status, occupation, types of occupation, level of education, religion.

(b) Past history :

Family history of mental illness, pre-morbid personality, precipitating factor, duration of illness, neurotic symptoms in childhood.

(c) Clinical :

Diagnosis, PSE Symptoms/syndromes, degree of social contacts--past and present, social interaction, relapses, final outcome and drug compliance.

A Chi-square analysis between the 2 groups using 36 clinical and socio demographic factors revealed the following significant differences (Table 2).

TABLE 2—Distribution over regular and irregular groups

	Regular	Irregular
<i>Education</i>		
Educated	17	7
Uneducated	17	20
$X^2=7.65, d.f.=1, p<.01$		
<i>Drug compliance</i>		
Poor	22	33
Good	12	4
$X^2=6.08, d.f.=5, p<.05$		

1. Those who were regular to OPD had a lower level of education.
2. Drug compliance was poor in those who were irregular.

Further, a two group Discriminant function analysis, using the SPSS was done to determine the variables which discriminated between the 2 groups. The variables emerged to be significant were level of education, drug compliance and final outcome (Table 3).

TABLE 3—Discriminant function analysis

Variable	U. Statistic	F. Value	Significance
Level of Education	0.90	7.30	p<.01
Final Outcome	0.82	6.90	p<.01
Drug Compliance	0.68	12.96	p<.05

Discussion

The problem of patient attrition is central in long term studies and different rates have been noted by different researchers. Kay and Lindermayor (1989) who followed up 37 first onset schizophrenic patients for 265 months reported a drop out rate of nearly 50%. They also found the 2 groups to be highly similar in psychopathological and socio demographic characteristics. The International Pilot Study of Schizophrenia (IPSS) reported an impressive follow up rate of 97.1% after 2 years. 75.6% of patients in all centres could be re-interviewed with the PSE with a high figure of 92.1% at the Agra centre (IPSS WHO). 22 out of 140 patients (about 15%) included in the study had shifted their residence. Generally the rates of attrition have varied from 10% to over 50% in several studies which however were dissimilar in sample size, nature and frequency of follow up (Johnston, 84 May, 76; Prudo & Blum, 87; Watt, 83).

The factors contributing to dropouts have been described as difficulties of location, access and assessment. Problems of

location abound in a country like India, more so in densely populated metropolitan cities. Resident registers of the population are not maintained and there are no movement registers as seen in some countries. Hence, if a person shifts residence, it may be impossible to locate him unless he maintains contact with the psychiatric facility. Telephone or postal interviews are impractical considering the socio-economic level and literacy of the patients.

In this sample, it has not been possible to locate 7 patients at the end of 4 years (7.3%). Of these, 6 had been in a state of remission when seen last. Considering the excellent rapport which one of the authors (RT) (who carried out the monthly assessments during the 4 years) enjoyed with the patients and their families, it is highly probable that the reasons for these patients not getting in touch with the facility was the favourable course of illness and the subsequent lack of need for continued treatment as perceived by the family.

Migration among the mentally ill has been a well described phenomenon. In an urban area like Madras, internal migration occurs frequently even among healthy families. Families of the mentally ill are posed with constant threats of eviction by houseowners and are often forced to change their residence. In fact, the migration rate observed in another follow up study at Madras which was community based, was 14.9% (Rajkumar—unpublished data) 5 patients had migrated from urban to rural areas. In contrast to the previous group, these patients had all been continuously ill since inclusion. The families discussed with us the need to send them to their rural homes in order to reduce the stress and saw it as a coping strategy of the family.

Mortality has not been a great contributor to dropouts in this study, the rate being only 3%. This is much less

than the mortality rates observed in other long term follow up studies (Harding, 87; Prudo, 77), although Leon (1989) at Cali reported a low mortality rate of 3.5%.

Assessment did not act as a deterrent to follow up. It is particularly true of the lower socio economic group of patients that they extend their full cooperation to the process of follow up and rarely refuse an interview.

A discriminant function analysis between the regular and irregular groups of patients revealed final outcome to be one of the discriminating factors ($f = 6.9$, $p < .01$). Those patients who had remitted after the episode of inclusion were more irregular in OPD attendance than those who had a more unfavourable course of illness. Many of those with good outcome reported for follow up only after reminders from the facility. This was only because of the rapport established with the families, since most of them did not perceive the need to continue treatment after total remission.

Several researchers who conducted follow up studies have pointed out that those schizophrenic patients who eventually become lost to clinicians are likely to have more favourable courses. Manfred Bleuler himself speaks of this while pointing out that his father's rather pessimistic attitude towards outcome of Schizophrenia was based on limited follow up of hospitalised patients, since he never again saw those who were so well recovered that they never returned to the clinic. For Eugen Bleuler, patients with better outcome may have become cases of "Out of sight, out of mind" (Bleuler, 1978). McGlashan (1974, 1986) in the Chestnut Lodge Follow up study found better outcome in patients signing out of hospital against medical advice which probably reflects the fact that most such patients were healthy and organised. Regularity appears to be related to lower level of education. One

possible explanation for this could be the greater faith which the less educated people have on the doctor treating them. The monetary constraints in seeking private treatment could also account for the greater dependence of this group on the facility, where treatment is entirely free of cost.

Drug compliance was poor in those who were irregular for follow up. Considered in the context of the preceding discussion, this is easily understood. It was only those who had a favourable course of illness who were irregular for follow up and naturally were not collecting their drugs. Since Drug Compliance was a ratio of drugs taken : Drug prescribed, the value of this ratio was low in this group. In effect, all these findings only indicate that the patients and their families did not feel the need to collect drugs from the facility, once the clinical condition had stabilised and continued to be so for some time.

Viewed in its entirety it can be seen that the 2 groups did not differ from each other on any major factor. Kulhara (1988) too did not find significant differences on demographic or clinical variables between those followed up and drop outs. What appears to be the most important factor determining regularity of follow up is the course and outcome of illness. It is only those who had a more favourable course and outcome who chose to be irregular for follow up. It can reasonably be concluded that those in need of active treatment do seek it without much persuasion. These findings cannot however be generalised to the clients of any psychiatric facility since the patients included in this study form a special group, in that they had intense and close personal contact with the therapist which is a requisite of any follow up programme. Nevertheless it offers some insight into the understanding of dropouts in follow up studies.

Conclusion

This prospective longitudinal follow up of 96 schizophrenic patients over 4 years revealed that despite the limitations of carrying out such studies in countries like India, good follow up rates can be ensured. It also shows that it is the Clinical status which largely determines regularity of OP attendance since remitted patients showed a distinct trend towards irregularity. However all long term follow up studies should place greater emphasis on sample attrition which can offer a better understanding of chronic mentally ill patients, especially with respect to their continued utilisation of mental health services.

REFERENCES

- Blouler, M. (1978). *The Schizophrenic Disorders. Long term patient and family studies.* Translated by Clement SM, New Haven: Yale University Press.
- Harding, C. M.; Brooks, G. W.; Ashikaya, T.; Strauss, J. S. and Breier, A. (1987). The Vermont longitudinal study of Persons with severe mental illness. II: Long term outcome of subjects who retrospectively met DSM III criteria for schizophrenia. *Amer. J. Psych.*, 144, 727-735.
- Johnstone, E. G.; Owens, D. G. C. et al (1984). Schizophrenic patients discharged from hospital. A follow up study. *Brit. J. Psych.*, 145, 586-595.
- Kay, S. R. and Lindenmayer, J. P. (1987). Outcome predictors in acute schizophrenia. Prospective significance of background and clinical dimension. *J. Nerv. Ment. Dis.*, 175, 3, 152-160.
- Leon, G. A. (1989). Clinical course and outcome of schizophrenia in Cali, Columbia. A ten year follow up study. *Nerv. Ment. Dis.*, 177, 10, 593-605.
- May, P. R. A.; Tuma, A. H. and Dixon, W. J. (1976). Schizophrenia: a follow up study of results of treatment. Design and other problems. *Arch. Gen. psych.*, 33, 474-480.
- McGlashan, T. H. (1984). Chestnut Lodge follow up study. *Arch. Gen. Psych.*, 41, 573-601.
- McGlashan, T. H. (1986). The prediction of outcome in chronic schizophrenia (IV). The Chestnut Lodge Follow up study. *Arch. Gen. Psych.*, 43, 167-176.
- Prudo, R. and Monroe, B. H. (1987). Five year outcome and prognosis in Schizophrenia. A report from the London Field Research Centre of the IPSS. *Brit. J. Psych.*, 150, 345-354.
- Rajkumar, S. (1989). A Longitudinal study of Functional Psychosis in an urban community (ICMR study)—unpublished data.
- Sartorius, N.; Jablensky, A., Korten, A. et al (1986). Early manifestation and first contact incidence of schizophrenia in different cultures. *Psychol. Medicine*, 16, 909-928.
- Tsuang, M. T. and Dempsey, G. M. (1979). Long term outcome of major Psychoses II Schizoaffective disorders and a surgical control group. *Arch. Gen. Psych.*, 36, 1302-1304.
- Vaillant, G. E. (1978). Prognosis and course of Schizophrenia. *Schiz. Bull.*, 4, 20.
- Verghese, A.; John, J. K.; Rajkumar, S. et al (1989). Factors Associated with the Course and Outcome of Schizophrenia in India—Results of a two year Multicentre Follow up study. *Brit. J. Psych.*, 154, 489-503.
- Watt, D. C.; Katz, K. and Shepherd, M. (1983). Natural history of Schizophrenia a 5 year prospective follow up of a representative sample of schizophrenics by means of a standardized Clinical and Social assessment. *Psychol. Med.*, 13, 663-670.
- Westermeyer, J. F. and Harrow, M. (1988). Course and Outcome in Schizophrenia. In: (Eds.) Tsuang M. T. and Simpson, J. G., *Handbook of Schizophrenia*, Vol. 3 Amsterdam: Elsevier, 206-244.
- World Health Organisation (1979). *Schizophrenia—An international follow up study.* New York: John Willey.