

Correspondence

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Long-term mortality after first psychiatric admission

Sir: Naik *et al* (1997) connect to the debate about the *Health of the Nation* targets, stating that their study gives a more correct view of the mortality risk of first-admission psychiatric patients than the prevailing one, namely that they constitute a high-risk group, regarding both all-cause mortality and suicide. However, their results are very difficult to generalise, since they have studied a very small sample over a long time, instead of studying a large sample in the established high-risk period, which is the first year after discharge.

In our own study of 1089 first-admission patients (Hansen *et al*, 1997), the all-cause mortality in the first year after discharge compared with the general population was 5.1 (95% CI 3.7-7.2) in men, and 3.1 (95% CI 1.9-5.0) in women. For suicide, the standardised mortality ratios were at the level of 30 times those in the general population. Naik *et al* studied 86 people for 16 years, finding 12 deaths and no suicides. This is certainly a low rate of death, but the problem is that a low number of deaths will have a very broad confidence interval, meaning that one cannot be sure that this death rate is statistically different from, for instance, the threefold greater rate that we found. After all, rather than studying the absolute death rate of the patients of a specific hospital, we wish to use population samples of discharged patients to tell us something about the probable death rate of psychiatric patients in general. To do this, a sample that is large enough to attain sufficient statistical power must be studied. If the sample is large (we observed 1998 persons for 11 462 person-years), the follow-up period does not have to be long, especially since the high-risk period is the first year. On these grounds, I think their criticism of other studies falls wide of the mark, and does not warrant the conclusion that first-admission psychiatric patients should not be considered a high-risk group.

Naik, P. C., Davies, S., Buckley, A. M., et al (1997) Long-term mortality after first psychiatric admission. *British Journal of Psychiatry*, **170**, 43-46.

Hansen, V., Arnesen, E. & Jacobsen, B. K. (1997) Total mortality in people admitted to a psychiatric hospital. *British Journal of Psychiatry*, **170**, 186-190.

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Sir: Naik *et al* (1997) report on 87 individuals followed up for 18 years after first admission for in-patient psychiatric care. They conclude that the lack of suicides in their series suggests that first-admission patients are not a high-risk group for suicide and thus should not be targeted. We do not agree that this conclusion can be drawn from their work. Such a conclusion, if quoted outwith the context of the paper, has significant potential implications for both service commissioners and service providers.

The authors list among the limitations of their study that their sample size is small but do not discuss this in further detail. We estimate that the statistical power of this study to demonstrate a difference in the suicide rate from the remainder of the population is around 15%. This is substantially lower than the 80% power which would usually be required in such work. The expected mortality from suicide and the confidence intervals for the observed: expected ratio for suicide are not given, but it seems likely that one death in their cohort could have changed the conclusions drawn from the work. The qualitative information in this paper is interesting. There was, however, very little chance that the authors would have been able to reject their null hypothesis.

Naik, P. C., Davies, S., Buckley, A. M., et al (1997) Long-term mortality after first psychiatric admission. *British Journal of Psychiatry*, **170**, 43-46.

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Authors' reply: Criticism of a small sample size can be overstated. Smaller samples allow for more complete, intensive and reliable follow-up than record-linkage studies do. Our experience with a UK register of admissions is that over 30% of linkage information can be inaccurate. The absence of suicide in our series would have been much less striking and informative if the follow-up was dependent on record-linkage only. There is often a trade-off between accuracy and sample size, but Dr Hansen *et al*'s (1997) large Norwegian database does appear to be of high quality.

Survival analyses are surprisingly powerful, making use of all longitudinal information. Although we followed only 87 patients, this covered 1262 person-years. Our 95% confidence interval for the standardised mortality ratio was 0.7-2.4, narrower than those cited by Dr Hansen for the much larger study.

Dr Hansen, and Dr Stark and colleagues, argue against the new hypothesis that first-admission cohorts are not at especially high risk for suicide in the long term. Our aim was to challenge the orthodox view as not proven. If other data confirmed our finding, then there would be "significant potential implications", and this is why we published, despite the tentative conclusions. The argument has two strands. The first relates to lack of evidence. Surprisingly, even in Hansen *et al*'s (1997) paper there are few data about suicide in a first-admission cohort. The analysis includes previously admitted patients, and also deaths before and immediately after discharge, which must bias the sample. It also appears that the excess deaths among first-admission patients were confined to those with a diagnosis of organic psychosis. We invite Dr Hansen to present data restricted to suicides in a first-admission series, using survival techniques to examine whether the acknowledged high risk in the period immediately after discharge does continue into the longer term.

The second argument is one of relative risk, comparing observed rates in first-admission patients with expected rates in other possible priority groups. As an example, Dr Hansen *et al*'s entire sample of in-patients has, in the short term, a 30-fold increased risk of suicide over the general population. This is of the same order as Gunnell & Frankel (1994) calculated for all deliberate self-harm patients, many of whom are not subject to routine follow-up in UK psychiatry. To put our results in further context, in the Borough of Broxtowe