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*This correspondence is now closed. I.P.*

## EPDS by post

SIR: The Edinburgh Postnatal Depression Scale (EPDS; Cox *et al*, 1987) is a 10-item self report scale developed as a screening tool for use by health visitors with a post-partum population. It is short, simple, and easy to score and administer. For these reasons it has become very popular as a research tool, although this was not its original purpose.

We are currently using it as part of a study of womens' experiences of screening during routine antenatal care. Our earlier work (Green, 1990) and that of others (e.g. Watson *et al*, 1984) had suggested that low post-natal emotional well-being might be predicted from low antenatal mood. We therefore chose to administer the EPDS at 35 weeks of pregnancy and at six weeks post-partum. We have complete data from over 1300 women.

The EPDS has been validated for antenatal use by Murray & Cox (submitted), who observe that "Fortunately, the EPDS contains no specific reference to the post-natal period so none of the items had to be altered for this study". While this is true, we would like to draw attention to one of its items which, it is clear from our own data, is capable of a different interpretation when asked antenatally. The item in question is (within the past week) "The thought of harming myself has occurred to me". This item is intended to detect suicidal thoughts, but, to a woman well advanced in pregnancy, clumsy and ill-balanced, it can be read as "I am preoccupied by the possibility of falling and hurting myself" or even as concern that harm might befall her during labour and delivery. Accordingly, we have found some women scoring the maximum on this item while having relatively low scores overall, and some have added explicit comments which confirm that their interpretation was not that originally intended. We would therefore warn others who may be using the EPDS in late pregnancy to treat this with caution.

We have yet to complete our analysis, but our impression is that, even without the complication of the last item, many women have been obtaining very high scores at 35 weeks. This was also observed by Murray & Cox and is consistent with the findings of Watson *et al* (1984).

Our use of the EPDS has been in postal questionnaires as part of a longitudinal study. Women therefore complete the scale in their own homes at a time of their own choosing. By 35 weeks they are used to answering questions about their feelings and in many cases a relationship has been developed, as one woman said "It's like having a penfriend". Any of these factors may account for the fact that we are obtaining some very high scores and a mean level post-natally that appears to be higher than is usually reported. We have observed a tendency for scores on the Spielberger State Trait Anxiety Inventory (STAI) to be lower when sent through the post. We would therefore be interested to hear from others who have sent the EPDS through the post, or who have any other data on postal assessment of emotional state.


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## Educational status and neurological abnormalities in schizophrenia

SIR: An interesting finding reported by Rossi *et al* (*Journal*, November 1990, **157**, 735–740) is the significant correlation between educational status and neurological impairment among schizophrenic patients. However, the authors have not elaborated on the nature of this association and have not discussed the implications of this important observation. In a comparable study of neurological soft signs (NSS) in schizophrenic patients and their first-degree relatives (Shaji *et al*, 1990) we found less-educated subjects having more NSS even after controlling for the effects of age and sex. The possibility of an early-onset illness leading to poor educational attainment as an explanation for the association seems unlikely as

there was no significant excess of NSS in the subgroup of patients with an early onset of illness. Another possible interpretation would be that NSS may be the evidence of an early cerebral insult and the resultant central nervous system dysfunction may lead to poor educational attainment even before the onset of illness. The brain dysfunction may also act as a predisposing factor, at least in a subset of patients, and may be responsible for the clinical expression of schizophrenic syndrome later on. Although these hypotheses sound attractive there does not seem to be enough evidence as yet to provide definitive answers.

Magnetic resonance brain imaging (DeMyer *et al*, 1988) of schizophrenic and normal subjects have shown that brain size is positively correlated with education. Lewis (1990) after reviewing a number of CT scan studies concluded that a range of demographic factors including educational level were important in determining various structural brain parameters. Such studies highlight the importance of controlling for the effect of education in studies of human subjects where brain size is the dependent variable. Although there are no definitive studies to correlate NSS and brain pathology using the newer techniques of imaging, this area needs to be pursued. If indeed there is a correlation, assessment of NSS could be considered as an inexpensive, simple method of studying neurological impairment. Issues raised by Rossi *et al* regarding the methods of assessment of NSS need careful consideration.

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## Brain lesions and cognitive function in late-life psychosis

SIR: Miller *et al* (*Journal*, January 1991, **158**, 76–82) published the results of their study of 24 patients with late-life psychosis. Patients had significantly more brain abnormalities on magnetic resonance imaging (MRI) scan than controls. In particular, despite normal neurological examinations in all but two of the patients, 25% of this group had cortical or white matter infarctions on MRI, compared with 7% of controls. Although the patient group had more abnormalities on neuropsychological testing, their mean Mini Mental State Exam (MMSE) score was 28/30 and none met clinical criteria for dementia.

These findings are very similar to our own (Flint *et al*, 1991). We studied 33 elderly patients with normal neurological history and examination, and a mean MMSE score of 27/30, meeting DSM–III–R criteria (American Psychiatric Association, 1987) for delusional disorder, schizophrenic disorder (late-onset type), and schizophreniform disorder. Of the patients undergoing CT brain scan, 31% were found to have cerebral infarction, mostly affecting the frontal-subcortical system. In addition, the presence of infarction was inversely correlated with social risk factors (failure to marry, social isolation) previously described for 'late paraphrenia', suggesting that stroke, by itself, is a potent mechanism in the pathogenesis of late-life psychosis.

Although Miller *et al* did not specifically examine treatment response, their impression was that many of their patients were treatment resistant. They speculated that the underlying brain disease contributed to a poor prognosis. In our study, subjects with brain infarction were indeed significantly less likely to respond to treatment. Because of the appearance of disabling side-effects, patients with CT evidence of stroke could only tolerate, on average, half the dose of antipsychotic medication compared to those without infarction. Had this 'organic delusional' group been able to tolerate higher doses of medication they may well have shown more symptomatic improvement. Interestingly, several studies, including Holden's (1987) all found significantly worse outcome in late-onset paranoid patients with cerebral organicity.

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