

## An Investigation of Family Environmental Alteration Affecting Short-Term Recovery from Schizophrenia in China

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**Background.** It has been hypothesised that change in the family environment affects short-term recovery from schizophrenia.

**Method.** Observation and study of 210 schizophrenic patients who were influenced by family environmental alteration show that the prognosis of schizophrenia caused suddenly by family environmental alteration is better than that of schizophrenia caused by a persistently unfavourable family environment.

**Results.** Hence, we think sudden family environmental alterations do not cause psychorrhoea, but slow family environmental alteration may cause change in the mental state of patients. The prognosis is worse in the countryside than in the city. From the study group, we conclude that the first cure rate was 28%, and that 26% of patients were able to work. This indicates that there were no typical cases of the core pattern of schizophrenia, and that there was a certain potential for recovery.

**Conclusion.** In the future, the emphasis of prevention and treatment must be placed on the countryside, and attention should be paid to the improvement of living and working conditions there, to the correct administration of patients, and to the improvement of recovery measures and therapy. We advocate that efforts should be made in the countryside to raise the national educational and cultural level.

The family is a unit of society, and a family environment may influence the prognosis of schizophrenia (Lou *et al*, 1975). The hypothesis that an unfavourable family environment persistently affects schizophrenia has not been studied systematically until now. Here we report on family environmental alteration affecting short-term recovery from schizophrenia.

### Method

In 1982–85, in Fuzhou, China, we conducted a five-year follow-up survey of 210 schizophrenic patients, including 85 cases of paranoid form, 125 cases of undivided form, 80 cases of hebephrenic form, eight cases of simple form, and 12 cases of deterioration form. These 210 cases conformed to the diagnostic standards of schizophrenia (Chinese Nervous and Mental Disease Scientific Association, 1989), and they were chosen from 400 psychiatric patients who were treated at home. We investigated their family

stability, their professional education, their concept of belief and marriage, their employment and economic situation, the number of family members and their health, the family's relations with the patient, accidents affecting the family members, and the family's relations with neighbours. According to the alteration of the family environment, we assigned families to either the control or the study group. Seventy-two patients were assigned to the control group, whose families had been originally harmonious and then the family environment had been suddenly changed (e.g. sudden death of a family member, divorce, unemployment, quarrel resulting in risk of family disintegration). We also compared these 72 patients with 138 patients whose family environment continued to be unfavourable (serious disability or illness of family member, deficient education, long-term hardship, and denial of care to patient after illness (Shyu, 1975; Chen *et al*, 1982)).

### Results

#### Comparison of environmental difference

Among 138 patients in the study group, 58 (42%) lacked formal schooling from childhood; 46 (38%) lived with no one to take care of them; 32 (23%) had economic hardship; six were involved in a long-term family quarrel; and 16 (12%) had a seriously sick father or mother, or were affected by the physical disability or mental disorder of father, mother, or other close relative. Among 72 patients in the control group, 48 (70%) had a father, mother, brother, or wife who suddenly died; six (8%) were divorced; and 18 (22%) were involved in a family quarrel. Thus, factors in the study group were long term and persistent, and incidents were multiple and complicated.

As for distribution, the study group had more patients living in the countryside than in the city. The ratio was 106 (76%) to 32 (28%). But there was no significant difference between countryside and cities (including suburbs) in the control group, each having 36 patients. The data also indicate that lack of schooling, hardship, extremely adverse life events,

family disintegration, and general distress were more prominent in the countryside than in the city.

#### **Comparison of occupational/cultural differences**

Among 138 patients in the study group, eight had university education, 38 secondary education, and 80 primary education, while 12 patients were illiterate. However, in the control group, only 12 patients had had university education, while 48 had had secondary education, and 12 primary. The cultural /educational level was lower in the study group than in the control group ( $\chi^2=42$ ;  $P<0.001$ ). In the study group, 124 patients (90%) were not intellectuals, including 12 workers (10%), 76 peasants and fishermen (61%), and 36 unemployed workers (30%), but in the control group, 54 were not intellectuals (75%), including eight workers (15%), 36 peasants (suburbs) (70%), 15 odd-job workers (30%), and 14 persons seeking employment. These data suggest that non-intellectuals occupied a prominent position in the study group, low cultural levels were concentrated in the countryside, and many patients had no regular employment.

#### **Follow-up differences**

On average, the general period of follow-up in the study group was nine years, but only nine months in the control group. The first cohort of 80 patients (60%) in the study group was followed up for more than one year (in which 40 patients (30%) came for first treatment after three years, and 48 patients (70%) in the control group after 3–6 months). This indicated that the follow-up in the study group, whether first or general, was longer than in the control group.

#### **Family history of mental illness**

In the study group, 54 patients had a paternal–maternal family history of mental disease for three generations, of whom 36 patients had a first-degree relative and 18 a second-degree relative with mental illness, while, among 22 patients in the control group, only four patients had a first-degree relative and 18 had a second-degree relative with mental illness ( $\chi^2=27.36$ ;  $P<0.001$ ). The genetic ratio showed that the first-degree relationship was obviously greater in the study group than in the control group. It also showed that undesirable mental qualities were closely related to a persistently unstable family environment.

#### **Personality**

The personality of the patient before onset of schizophrenia was classified into three patterns: introverted, extroverted, and medium. Introverted patients are idiosyncratic, quiet, and withdrawn from social intercourse, while extroverted patients are active, optimistic, and fond of social intercourse. Patients who do not fall into these two patterns belong to the medium pattern. Along with 130 typical introverted patients in the study group, there were eight cases of medium pattern, but, along with 14 atypical introverted patients in the control group, there were 18 cases of medium pattern and 10 of extroversion.  $\chi^2$  analysis shows an obvious difference between these two groups in personality ratio; that is,  $\chi^2=294$ ;  $P<0.001$ . Most patients were typically introverted, extroverted, or medium pattern, forming distinct types for comparison.

#### **Prognosis comparison**

As for residual symptoms, 84 patients (60%) had negative symptoms and 64 (40%) had positive symptoms in the study group, while only 12 (16%) had negative symptoms in the control group. In the case of insight, there was one partially defective patient and 138 patients showing complete lack of insight in the study group, but 20 partially defective patients (28%) in the control group. As far as deterioration was concerned, there were 60 cases (48%) of partial deterioration and four cases (8%) of complete deterioration in the study group, but none in the control group. As for stability, 32 patients were relatively stable and 52 unstable in the study group, while in the control group there were 54 relatively stable patients and six unstable patients. There was a clear difference between the two groups ( $\chi^2=48.96$ ;  $P<0.001$ ). In terms of therapeutic efficacy, 100 patients (79%) showed no remission through multiple treatment and 39 (26%) showed preliminary remission but then showed no remission in the study group; however, 72 patients (100%) showed remission in the control group.

#### **Social recovery potential correlation**

Statistical analysis indicates that the social recovery difference between the groups was prominent ( $\chi^2=100.8$ ;  $P<0.001$ ). The ability to adapt to society was stronger in the control group (Table 1), while the life of patients in the study group centred on the family, although many of them still had the ability to work.

Table 1  
Comparison of study group and control group in some indicators of social recovery

	Able to do some house-work (%)	Unable to do house-work (%)	Able to get employment or to go on duty	Have strong ability to handle social affairs	Have guarantee of labour efficiency (%)
Study group	60 (48%)	48 (35%)	30 (22%)	0	0
Control group	0	0	48 (70%)	18 (25%)	24 (35%)

### Discussion

After comparison of the relationship between the family environmental alteration and recovery from schizophrenia, we conclude that the environment, whether unfavourable or favourable, may precipitate schizophrenia, and that the mechanism of its onset results from the common effect both of qualities inherent in the patient and of the environment (Lou *et al.*, 1987). The mental background of these two groups reflected the same unfavourable environment, but the result was different. How are we to explain this? We know that in the control group the mental function before onset was better, and if the onset was rapid, it was rapidly cured. Moreover, in this group, the symptoms were simple (mainly disconnected hallucination and delusion, and absence of hallucination accompanied by intense anxiety), and remission was complete. After remission, most of them could follow a medication regimen, work, and go to school, and they had the assurance of labour efficiency. This showed a better prognosis of schizophrenia. We believe, therefore, that even familial disintegration and calamity do not cause psychorrhoea, and that the family's cohesive forces remained strong, and we also believe that the mechanism of the onset of schizophrenia ought to be studied.

Only a few patients in the control group relapsed. The relapse features differed from those of the study group in that the time of relapse lasted longer and the disease condition tended to be stable with ageing. There was no case of multi-relapse.

In the study group, the attack was found to be late, and systematic therapy was received late, too; as a result, symptoms were more complicated and serious than in the control group (talking to oneself, reasoning preposterously, indolence, and other bizarre behaviour). In this disease, relapse is easy, and the patients with multi-relapse show more residual symptoms and deterioration. After leaving

hospital, they cannot go to school or work, or have to delay resumption of work. Similarly, they cannot follow a medication regimen, have contact with people, and can no longer do skilled labour even if they once had the ability. This is clear evidence that unfavourable family environments influence therapy and prognosis, in accordance with the core pattern of schizophrenia (Li, 1975). A poor response to treatment and unfavourable prognosis may result from hereditary predisposition, the development of a prematurely schizoid personality, personality change before disease, somatic qualities, malnutrition, psychic imbalance, traditional beliefs, and cultural and lifestyle differences.

On the other hand, the core pattern of schizophrenia cannot fully explain the results of the study group. The clinical therapy and social recovery of many patients were promising; the first cure rate was 28% and the labour capacity 26%, results which are not typical of the core pattern. If the patients all belonged to the core pattern, how are we to explain the potential for better recovery? The cause of regression after disease may be connected to an unaltered family condition; that is, undesirable family behaviour such as not taking care of patients, or unfavourable family environment exemplified in distressing life events, low cultural levels, and economic decline (Wu, 1988). The behaviour problem may be seen in the light of the family highly at risk of a member's developing schizophrenia having weak cohesive forces (Chen *et al.*, 1982), a view which is in accordance with this paper. The behaviour disorders still remaining after 5-year follow-up may be one of the factors impeding recovery. Some clinicians believe that the prognosis of fragmentation of thinking and delusion behaviour disorders is better (Ding, 1985). However, our study shows that the prognosis of both obvious cognitive disorders and continued course of schizophrenia is poor.

At present, the prognosis of the disease is worse in the countryside than in the city; therefore, treatment and prevention efforts should be shifted to the countryside. We should give priority to minimising the disease's onset and the disability it causes in order to raise labour efficiency. Above all, we should improve the family environment and living and working conditions, and call on society for support; that is, we must provide patients undergoing personal and economic hardship with the chance to get employment, to help them to overcome difficulties and worries. The previous recovery therapy emphasised physical labour. In our study, we emphasised, as the core of schizo-dynamics, complex therapies such as music, dancing, sewing embroidery, tai-chi exercises, and the continued

assembly line method (a behaviour therapy), including easy and pleasant housework. Low general capacity and weak disposition may influence comprehension and the ability to adapt. Thus, we advocate that efforts be made in the countryside to raise the national educational and general cultural capacity and disposition, and that attention be paid to the administration of mental patients.

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