

Children of Schizophrenic Parents – Are They More Disturbed?

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Summary

A case control study of 210 children of schizophrenic parents, aged 6 to 18 years was compared with a control group of 247 children of normal parents. The aim of this study is to see if children of schizophrenic parents had more psychiatric morbidity when compared with children of normal parents as well as to identify the possible risk factors associated with the morbidity. The study found that both groups had children who developed psychiatric morbidity but the difference was not at a significant level. Factors such as presence of marital discord, impaired parental functioning, being a male child, having a mentally ill mother and coming from an extended family were shown to be associated with significantly higher prevalence of psychiatric morbidity ($p < 0.05$) amongst the children of schizophrenic parents.

Key Words: Schizophrenic parents, Psychiatric morbidity, Children

Introduction

Rutter (1966)^{1,2} noted that psychiatric morbidity in the form of neurotic states and conduct disorder increased in children when one parent has a mental disorder. It was also noted to be increased in parents with chronic physical illness. Henderson (1988)³ also found that having a sick parent is a risk factor for psychiatric morbidity in children. These findings were in agreement with other studies of offsprings of schizophrenic parents⁴⁻⁹.

As for the mechanisms, both genetic and environmental factors are important¹⁰. Postulated causative environmental factors¹⁻³, include:

- (a) Parental symptoms which involves children, e.g. delusions which refer to the child.
- (b) Exposure to hostile and aggressive behaviour of parents.
- (c) Family discord.
- (d) Family disruption and child being placed in foster care or adopted out.

- (e) Decreased parental functioning.
- (f) The presence of mental disorder increasing risk in the other parent due to possible assortive mating.

However, there are variable responses in children of mentally ill parents. Less than half developed psychiatric morbidity¹⁻³. The protective factors postulated by Rutter *et al*^{1,2} and Henderson³ include having a good relationship with one or both parents prior to the parental illness, having an emotionally supportive non-ill parent, having a best friend, have a robust self esteem and a repertoire of problem solving abilities. It has been suggested that social support available to the child may buffer against the effects of marital discord¹⁻³. This form of social support would include a close relationship with an adult outside the family, engaging in an activity which gain the child positive recognition and having a close sibling relationship.

Due to the variable responses in children, Rutter *et al*¹⁻³ specifies three points in clinical practice. Firstly,

it is important to focus on how children are actually responding rather than on report by parents or others. Secondly is that attention is to be paid to patterns of parent-child interaction, to learn how the child responds, and how the parents respond in return. Last but not least, clinicians should be concerned with the family as a whole. The family is to be recognised as a positive resource, for which there is usually no satisfactory substitute. The aim of this study was to determine the prevalence of psychiatric morbidity amongst children of schizophrenic parents as compared to a normal control and to find out the association of other relevant factors that contribute to this psychiatric morbidity as assessed by parents and teachers amongst the children of schizophrenic parents.

Materials and Methods

This is a case control study done in the psychiatric clinic, Hospital Kuala Lumpur from May to August, 1993.

Sample Selection

A group of chronic schizophrenic parents was identified by clinical interview based on DSM III R (American Psychiatric Association, 1987) diagnostic criteria. Inclusion criterias include patients must be married with school-going-age children and in remission for at least past one month. The schizophrenic patient and his/her family must consent to the study. The patient should be staying with the children and must not be away for more than three months in the past one year. The parents should not be separated or divorced and are not be suffering from chronic medical illness.

A consecutive sample of 102 families (with one or both parents diagnosed as schizophrenia), with a total of 210 school-going-age children were identified. All these children were screened with Rutter's Children Behaviour Questionnaire. Rutter's Scale A (Parents) were filled by the non-ill parent. If both parents were ill, other significant household members were the informants. Rutter's Scale B (Teachers) with researcher-addressed stamped envelope were given to the parents to give to the respective children's teachers. Follow-up telephone calls and letters of reminder were sent to those who did not respond after a month. The Questionnaires were in English and Malay to ensure

easy comprehension by the parents and teachers. Care is taken not to induce any guilt feelings among the parents for any problems faced by their children.

Control Selection

A control group, matched for age, sex, ethnic group, social class, sibling size, family system, urban or rural residence, and parental relationship (biological or adoptive) was selected from the male and female general outpatient department, Hospital Kuala Lumpur, in the same study period.

Clinical interviews were done to rule out mental or chronic medical illnesses. A control group of 109 families, with a total of 247 children, were identified. The children were screened with Rutter's Questionnaire as in the sample. Chi-square test and t-test were used in the statistical analysis of data.

Results

All the parents or guardians who consented for the study completed the Questionnaire in both the sample (n : 210 children) and control group (n : 247 children). However, though only 107 teachers (51%) in the sample and 104 (42.1%) teachers in the control group responded, there was no statistical difference in the response rate by the teachers between the two groups ($p=0.06$). The lower response rate from the teachers may be due to the fact that these questionnaires were sent by mail.

Table I showed that children in the sample and control groups were closely matched for sex, ethnic group, social class, family system, family residence, sibling size and parental relationship, with age however being significantly different at $p<0.05$.

In this sample, 46.2% of the children had a mentally ill father and 53.3% had a mentally ill mother. Only one child (0.5%) had both parents being mentally ill. The other relevant social factors of the parents in the study sample are shown in Table II.

As shown in Table III there was no difference in the prevalence of psychiatric morbidity between the two groups on assessments by teachers and parents at 5% level.

Table I
The sociodemographic characteristics of children in the sample and control

	Sample (n=210) N(%)	Control (n=247) N(%)	p value
Age (years)			
Range	6-18	6-18	
Mean	11.6	10.5	
s.d.	3.6	3.4	0.5 (NS)
Sex			
Boys	106 (50.5)	118 (47.8)	
Girls	104 (49.5)	129 (52.2)	0.57 (NS)
Ethnic			
Malay	114 (54.3)	139 (56.3)	
Chinese	58 (27.6)	64 (25.9)	
Indian	34 (16.2)	38 (15.4)	
others	4 (1.9)	6 (2.4)	0.94 (NS)
Social class			
I & II	22 (10.5)	41 (16.6)	
III, IV & V	188 (89.5)	216 (87.4)	0.09 (NS)
Family system			
Nuclear	168 (80)	208 (84.2)	
Extended	42 (20)	39 (15.8)	0.24 (NS)
Family residence			
Urban	186 (88.6)	229 (92.7)	
Rural	24 (11.4)	18 (7.3)	0.13 (NS)
Sibling size			
mean	4 (s.d.=1.9)	4 (s.d.=2.3)	
Less than 4	101 (48.1)	107 (43.3)	
4 or more	109 (51.9)	140 (56.7)	0.31 (NS)
Parental relationship			
Biological	207 (98.6)	246 (99.6)	
Adoptive	3 (1.4)	1 (0.4)	0.34 (NS)

Further analysis showed that out of the 52 cases who were rated as deviant by the parents, 34 teachers responded among which 17 children were rated as deviant by their teachers. This illustrated the relatively

low agreement between the parents' and teachers' assessment ($p=0.5$).

In the teachers' assessment (Rutter's Scale B), there was

Table II
Other relevant social factors in the parents of study sample

Factors	Sample (n:210)	Control (n:247)	χ^2	p
Marital discord	40	43	0.21	0.65 (NS)
Difficulties in daily routine	14	63	28.8	8.0×10^{-8} (S)
Difficulties in child care	47	63	0.61	0.44 (NS)

Table III
Prevalence of high score children in sample and control

Rater	Sample (n=210) Prevalence		Control (n=247) Prevalence		χ^2	p
	n	%	n	%		
Teacher	39	18.5	30	12.1	1.4	0.24
Parent	52	24.8	58	23.5	0.22	0.64

a higher prevalence of emotional problems in the sample than in the control group ($p < 0.05$) as shown in Table IV.

When children of schizophrenic parents were further analysed, there was a higher prevalence of psychiatric morbidity in the boys than the girls in the teachers' assessment ($p < 0.05$) as shown in Table V. In the parental assessment (Rutter's Scale A), psychiatric morbidity was higher amongst the Malays (30.7%) and Indians (29.4%) as compared to the Chinese (12.1%) at $p < 0.05$. Further analysis showed no difference in psychiatric morbidity between the Malays and Indians. There was also higher psychiatric morbidity in the children who came from extended families (58.8%) than from nuclear families (32.2%) in the teachers' assessment ($p = 0.04$). In the parental scale, there was significantly higher psychiatric morbidity in children whose mothers were mentally ill (30.4%) as compared to fathers who were mentally ill at 18.6% ($p < 0.05$). In this study, there was no difference in psychiatric morbidity according to age

group, social class, sibling size, family residence, parental relationship and parental educational level. There was also no difference in psychiatric morbidity in terms of duration of parental mental illness and frequency of relapses.

As shown in Table VI, there was a higher psychiatric morbidity among children of schizophrenic parents who came from families with discord (45%) than from those who did not (20%) on the parental scale ($p = 0.001$). Similarly, on both the teachers' and parental scale, there was a significantly higher psychiatric morbidity in children when their schizophrenic parents had difficulties in their daily routine (Table VI).

Discussion

This is a case control study and the limitations of this type of study were recognised¹⁰⁻¹¹, namely, the bias in the selection of sample and control and the problems of temporality. Other confounding variables like the personality of the parents, the temperament of the child,

Table IV
Prevalence of psychiatric morbidity in different subcategory on Rutter's Scale for parents and teachers

A. Parents scale	Sample (n=210)		Control (n=247)		x ²	p
	n	%	n	%		
Cases:-	52	24.8	58	23.5	0.102	0.75 (NS)
Emotional	10	4.8	11	4.5	0.03	0.88 (NS)
Conduct	31	14.8	38	15.4	0.03	0.85 (NS)
Undifferentiated	11	5.2	9	3.6	0.69	0.41 (NS)

B. Teachers scale	Sample (n=107)		Control (n=104)		x ²	p
	n	%	n	%		
Cases:-	39	18.5	30	12.1	1.39	0.24 (NS)
Emotional	19	17.8	8	7.7	4.79	0.02 (S)
Conduct	13	12.2	16	15.4	0.47	0.5 (NS)
Undifferentiated	7	6.5	6	5.8	2.82	0.09 (NS)

Table V
Psychiatric morbidity by sociodemographic characteristics among children of schizophrenic parents

	Rutter Scale			
	A (Parents)		B (Teachers)	
	(%)	p	(%)	p
Sex				
Male	28.3		49	
Female	21.2	NS	25	*
Race				
Malay	30.7		41.3	
Chinese	12.1		40.9	
Indian	29.4	*	19.0	NS
Family system				
Nuclear	25.6		32.2	
Extended	21.4	NS	58.8	*
Ill parent				
Father	18.6		45	
Mother	30.4	*	30.3	NS

*Significant at $p < 0.05$.

Table VI
Psychiatric morbidity in children of schizophrenic parents by relevant social factors in their parents

	Rutter Scale			
	A (Parents)		B (Teachers)	
	(%)	p	(%)	p
Family discord				
Present	18.6		45	
Absent	30.4	*	30.3	NS
Parental difficulty in daily routine				
Present	36.5		52.9	
Absent	19.7	*	28.8	*
Difficulty in child care				
Present	38.3		50	
Absent	20.9	*	32.9	NS

* Significant at $p < 0.05$

and the interaction of 'goodness of fit' between parents and child and the presence or absence of social support which should have been considered were not looked at because of time constraints. Rutter's Children Behaviour Questionnaire was used to screen for behavioural deviance. It was validated locally and the cut-off point of 10 in the parental scale (i.e. sensitivity of 66.7% and specificity of 67.6%) and 9 in the teachers' scale (i.e. sensitivity of 61.8% and specificity of 71.4%) was obtained¹². The Rutter's Questionnaire was shown to be a reliable and valid screening instrument to detect global behavioural deviance¹³⁻¹⁴. However, it is not without its limitations. For example parents and teachers' personalities and background would affect their judgement of a particular child's behaviour. Other limitations include the fact that the Questionnaire is not diagnostic and therefore is unable to identify monosymptomatic disorders.

Using the cut-off point of 10 on the parental scale and 9 on the teachers' scale, we found a slightly higher prevalence of psychiatric morbidity in the sample (24.8% on Scale A, 36.5% on Scale B) than control (23.5% on Scale A, 28.9% on Scale B) but this was

not significant statistically. A possible explanation could be that this sample is from a hospital population whose schizophrenic parents were on follow-up and treatment in Kuala Lumpur Hospital Psychiatric clinic. The fact that these patients were compliant with follow-up and treatment might indicate that this group was with a better prognosis. At the same time, the researchers chose only children from intact family and this might imply that the non-ill parent could be more tolerant towards the ill spouse and similarly towards their children, resulting in under-reporting of deviant behaviour. Bleuler's study¹⁵ of his schizophrenic patients adds another dimension. He commented that the stress of living with a mentally ill parent might be health enhancing if the stresses were both manageable and of a kind that gave rise to rewarding task that was proven to be fulfilling. Garmezy drew parallel with Rachman's concept of 'required helpfulness', and noted that helping others, such as the sick parent or younger siblings, may lead to heightened morale and the acquisition of new problem-solving skills, that could predispose to resistance of stressor¹⁵.

It could be that there was presence of minor

psychiatric morbidity, poor child rearing practise in the control group which the researchers did not look into. It was suggested that approximately 30% of the primary care patients using services within a year had a diagnosable psychiatric disorder, most of which are affective, such as depressive disorder¹⁶. It would be interesting to look into these factors in future studies.

It was noted that psychiatric morbidity among the control was relatively high. Bradenburg *et al*¹⁷ in their review of 8 recent studies on childhood disorder found a prevalence of 14 to 20%. Kasmini *et al*¹⁸ reported a prevalence of 16.5% on teachers' scale in three primary school in Petaling Jaya and Kuala Lumpur. The mentioned findings might imply that this control group might not be reflective of the general population. It was mainly an urban hospital population and the majority came from social class III and below.

There was a higher prevalence of emotional problems in the sample than control in the teachers' scale ($p < 0.05$). It could indicate that children of schizophrenics were more adversely affected leading to manifestations of emotional problems as a reaction.

Further analysis of the study group showed that boys were more at risk for psychiatric morbidity than girls. This corresponds to previous findings that boys were more vulnerable to the adverse effects when anyone of their parents were mentally ill¹⁵.

As for the prevalence of psychiatric morbidity by ethnic group, it was shown on Rutter's parental scale (Scale B) that Malays and Indians had higher psychiatric morbidity than the Chinese ($p < 0.05$). Analysis of the data showed no ethnic group difference in the distribution of social class ($p = 0.054$), sibling size ($p = 0.13$) and presence of family discord ($p = 0.24$). The higher prevalence of psychiatric morbidity among Malays and Indians might reflect the indices of social distress in the two groups as recent settlers in urban areas (this sample was mainly an urban population) as compared to Chinese who settled earlier in the urban areas in Malaysia. Similar social distress indices has also been noted in the substance abuse pattern in Malaysia¹⁹. In a study on opiate dependence in University Hospital Kuala Lumpur between 1970 and 1976, the Malays were

entirely absent from the figures in the early 1970s, but in 1976, they had taken over as the largest single group¹⁹. Similarly, higher prevalence of child abuse was noted among Malays and Indians²⁰, suicide and alcoholism among Indians²¹. Other possible explanations include cultural differences in recognition and treatment of the illness²², and in parenting style²³.

There was a higher prevalence of psychiatric morbidity among children who came from extended families than those from nuclear families ($p = 0.04$). It was postulated that extended families, ie. a three-generation home can be an enormous challenge to anyone living in it. Such a set up requires patience, tolerance, a large measure of give-and-take and a great deal of love and humour. Having a mentally ill member might not be helpful in reaching compromise and respect in this situation.

It was noted that there was higher psychiatric morbidity when the mother is ill ($p < 0.05$) as compared to having an ill father. It could be that the mentally ill mothers were not able to fulfil their parental role leading to more problems or the non-ill mothers were more tolerant towards the children and hence the underrating.

In this study, presence of family discord, parental functioning were very subjective questions asked to the parents. This could be a source of bias and might be overcome in future studies if more structured or objective instrument is used in future. In this study, there was significantly higher psychiatric morbidity in children who came from families with discord. Family discord is usually associated with increased conflict over child rearing practises and greater segregation in decision-making, reduced affection and altered patterns of dominance and decision-making¹. Rutter suggested that the main risk factor when a parent is psychiatrically ill stems from the associated family discord, with the greatest impact when the hostility and quarrelling directly involve the child in some way^{2,15}.

There was significantly greater difficulty in parental coping skills in the sample than the control group ($p < 0.05$). This factor was associated with higher psychiatric morbidity in the children. This showed that any disrupted parental functioning has adverse effects on the children.

The overlap between disorders perceived by teachers and parents is small and this corresponded to previous findings^{13,14}. When information from all sources was reviewed, it was apparent that to some extent, the lack of overlap between the two questionnaire was explicable in terms of the situation-specific nature of the children's psychiatric disorder¹³.

It was well established that the risk of schizophrenia in the offsprings of schizophrenic parents is largely genetically determined¹. It was also clear that environmental factors play an important role in the causation of most child psychiatric disorders. Rutter postulated five important risk factors, namely, marital discord, psychiatric morbidity in spouse, parental symptoms involving the child, severe family disruption and impaired parental functioning¹. In this study, two of the mentioned risk factors were looked into, i.e. family or marital discord and impaired parental functioning. These two factors were shown to be associated with higher psychiatric morbidity ($p < 0.05$).

Other risk factors found in this study were being male child, having a mentally ill mother and coming from extended families.

Unfortunately other protective factors amongst the children, like having a good relationship with one or both parents prior to the parental illness, having a best friend or having a robust self esteem were not looked into in this study. Similarly, sibling effect which may distort the association was also not investigated in detail. These factors clearly can have some influence on the results of the study.

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References

1. Rutter M, Hersov L, (eds). *Child and Adolescent Psychiatry: Modern approaches*. Blackwell Scientific Publications, 1985.
2. Rutter M, and Quinton D. Parental psychiatric disorder: Effects on Children. *Psychological Medicine*, 1984;14 : 853-80.
3. Henderson AS. *An Introduction to Social Psychiatry*. Oxford University Press, 1988.
4. Parnas J, Cannon TD, Jacobsen B, Schulsinger H, Schulsinger F, Mednick SA. Lifetime DSM III R diagnostic outcomes in the offspring of schizophrenic mothers. Results from the Copenhagen high-risk study. *Arch Gen Psychiatry*, 1993;50 : 707-14.
5. Schulsinger H. A ten-year follow-up of children of schizophrenic mothers: Clinical assessment. *Acta Psychiat Scand* 1976;53 : 371-86.
6. Jorgensen A, Teasdale TW, Parnas J, Schulsinger F, Schulsinger H, and Mednick SA. The Copenhagen High-risk Project: The diagnosis of maternal schizophrenia and its relation to offspring diagnosis. *Br J Psychiat*, 1987;151 : 753-7.
7. Schulsinger F, Parnas J, Petersen ET, Schulsinger H, Teasdale TW, Mednick SA, Moller L, Silverton L. Cerebral ventricular size in the offspring of schizophrenic mothers. *Arch Gen Psychiat* 1984;41 : 602-6.
8. Kendler KS, Gruenberg AM, Tsuang MT. Psychiatric illness ill first-degree relatives of schizophrenic and surgical control patients: A family study using DSM III R criteria. *Arch Gen Psychiat* 1985;42 : 770-9.
9. Parnas J, Teasdale TW, Schulsinger H. Institutional rearing and diagnostic outcome in children of schizophrenic mothers - A prospective high-risk study. *Arch Gen Psychiat* 1985;42 : 762-9.
10. Dawson-Saunders B, Trapp RG. *Basic and Clinical Biostatistics*. Prentice-Hall International Inc, 1990.
11. Fletcher RH, Fletcher SW, Wagner EH, (eds). *Clinical Epidemiology - The essentials*. Baltimore, London, Williams and Wilkins: 1984.
12. Cheah YC, Kasmini K, Amin SM, Zsmani S. Validation of Rutter's Behaviour Questionnaire for Malaysian Children. *Malaysian Journal of Psychiatry* 1995;3 : 65-73.

ORIGINAL ARTICLE

13. Rutter M, Tizard J, and Whitmore K, (eds). Education, Health and Behaviour. London: Longman, 1970.
14. Rutter M. A children's behaviour questionnaire for completion by teachers: Preliminary findings. *Child Psychol Psychiat* 1967;8 : 1-11.
15. Rutter M. Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. *Br J Psychiat* 1985;147 : 598-611.
16. Kessler LG, Cleary PD, Burke JD. Psychiatric disorder in primary care: results of a follow-up study. *Arch Gen Psychiat* 1985;42 : 583-7.
17. Brandenburg NA, Friedman RM, and Silver SE. The epidemiology of childhood psychiatric disorders: prevalence findings from recent studies. *J Am Acad Child Adoles Psychiat* 1990;29 : 76-83.
18. Kasmini K, and Ohn K. A study on children's behaviour in three primary schools using Rutter's Questionnaire for teachers. *Asean Journal of Psychiat* 1993; 3 : 1-7.
19. Spencer CP, Navaratnam V. Drug abuse in East Asia. Oxford University Press, 1981.
20. Kasmini K. 'Penderaan dan pengabaian kanak-kanak.' In: Cho, KS, and Salleh IM, (eds). *Caring society: emerging issues and future directions*. Institute of Strategic and International Studies (ISIS), Malaysia, 1992.
21. Cho KS, and Salleh IM. *Caring Society: Emerging issues and future directions*. Institute of Strategic and International Studies (ISIS), Malaysia, 1992.
22. Rack P. *Race culture and mental disorder*. Tavistock Publications. London & new York; 1982.
23. Karim WJ. Parent-child interaction in child abuse and neglect. 'Proceeding of Third Asian Conference on Child Abuse and Neglect'; 1993