Life-Events and Schizophrenia
A Case-Control Study

By A.M. Ashour, A.M. Nassef, A. Sadek, Z. Bishry and F. Lotaif

ABSTRACT

This paper is a report of the procedure and results of a case control study of 40 schizophrenics, 20 males and 20 females, selected from the patients attending the psychiatric out-patient clinic in Ain-Shams University Hospitals. Matched with 40 controls. The study was conducted in the years 1977-78. The study concentrated on two periods in the life of the patients, the first ten years and the 3 years prior to the illness short of the last 6 months. Results showed work trends in the life events higher in the schizophrenic subjects compared to the controls mainly in association with recent parental loss.

INTRODUCTION

Although research on life events in mental conditions have a theoretical origin in the concepts of Adolf Meyer, yet it has gained momentum only in the last two decades or so.

Recent major reviews of the literature in this area can be grouped roughly into two. One group summarizes the different results of various works and clearly points out the controversies related to the role of life events in the causation or precipitation of mental illness specially schizophrenia, e.g. (Schwartz and Myers (1977), (Grant et al. 1978) and (Jacobs and Myers 1976). The second group concerns itself with development of method and technique in this area, and gives clear guidelines for further research, e.g. Rahe 1977 (Dohrenwend et al. 1978), and (Grant et al. 1978). We thought, it worth while examining the question of life events and schizophrenia, in Egyptian schizophrenics.

This paper is a report of the procedure and results of a case-control study of a sample of schizophrenics recently admitted to a psychiatric

ward in a general hospital in Cairo. The study was conducted in the years 1977 and 1978.

MATERIAL AND METHOD

The experimental group was 40 schizophrenic patients, 20 males and 20 females. They were selected from the patients frequenting the psychiatric outpatient clinic in Ain-Shams University hospitals. Their sociodemographic data are shown, together with the controls in Table (1). On the whole both groups come from the young adult, low — low middle social class town dwellers of Abbassia Cairo, and are adequately matched.

The operational criterion for inclusion of a subject to the experimental group was a diagnosis of schizophrenia according to ICD 9. We excluded patients with such diagnosis as, schizophreniform psychosis, schizophrenic reaction associated with or following intoxication pseudoneurotic schizophrenia and schizo-affective psychosis.

The control group was selected from patients, recently admitted to hospital and waiting for cold surgery for minor states mainly hernias and haemorrhoids. Selection criteria were freedom from psychiatric illness past or, present. They consisted of forty subjects well matched to the experimental group as regards age, sex, marital status and socioeconomic grouping.

The procedure was first to establish the schizophrenic diagnosis. This was realized through a 40 minute semistructured interview according to the schedule of history taking and mental examination adopted by the Department of Psychiatry, Ain-Shams University and is largely based on the schedule recommended by the Institute of Psychiatry, Maudsley Hospital, London.

The second step was to fill in a check-list of two groups of life events for the subjects and controls. To increase the reliability of the in-

formation, the subjects recollection of the history was checked by one or more reliable informants from the family. The host of life events subjected to study varied along different parameters e.g. controllability — uncontrollability, subjects — objectivity and physical — psychosocial.

We concentrated on two periods in the life of the patient, one being the first ten years of life and the other was the three years prior to the illness short of the last six months. This implies that we considered those two periods critical as the effects of social change on the mental health of the subjects. For each critical period we have chosen to investigate a different list of life events. For the first ten year of life we asked for (1) parental loss by death either parternal or maternal (2) divorce of parents (3) loss of sibs by death (4) financial trouble in the family (5) and major illness of one member of the family. For the three years prior to illness we asked for (1) parental loss by death either paternal or maternal (2) loss of a spouse by death (3) divorce of the subject (4) move into another house (5) major illness of a family member (6) major physical illness of the subject prior to the mental breakdown (7) financial trouble (8) marked improvement in financial position (9) trouble at work (10) trouble in the military service (11) trouble with the law (12) severe marital disharmony.

These life events can be classified in different ways. Some events are beyond the subjects' control e.g. death of parents, others could be affected by subject's participation e.g. divorce. Some events are factual objective data e.g. major illness in a family member, others are contaminated by the subjective evaluation of the subjects e.g. severe marital disharmony and financial trouble.

The chances that the life events were the effect rather than the cause of the illness was minimized by omitting the events in the six months prior to the onset of the illness.

We just counted the life events and did not go into life events scaling problem. We were aware that by simply relying on simple counts of life

events we could solve the dilemma of estimating the environmental stress versus subjective stress (Grant et al. 1978).

RESULTS

Table (2) summarizes the counting of life events both early and recent in the 40 schizophrenic subjects and 40 hernia controls.

There is a marked trend in the life events total count to be higher in the schizophrenic subjects compared to the hernia controls, but this difference did not reach statistical significance except in the recent parental loss segment.

The 40 schizophrenic subjects had a total of 29 early childhood events and 75 last three years events, compared to the figure of 19 and 37 respectively in the 40 hernia patients. There is little or no difference between the male and female halves of the samples. There wede 14 incidents of parental loss in the last three years prior to the illness in the 40 schizophrenics, contrasted to only 3 such incidents in the 40 hernia cases and this difference arose to statistical significance ($P<0.05$). Once again there was lige or no difference between the male and female halves of the samples. Of the early-life events, other than parental loss, that account principally for the total higher counts of events in the schizophrenics are : divorce of the parents, death of siblings and major illness in a member of the family.

Of the three-years-prior-to-the-illness life events, other than parental loss, of principal contribution to the total count in male schizophrenics are : death of a spouse, moving house, trouble at work, divorce, marital disharmony and major physical illness. For the female schizophrenics the events were : Death of spouse, moving house, marital disharmony and major physical illness.

DISCUSSION

Methodological issues :

This work was meant to be a replication of such works as Birly and Brown's (1972) and Schless (1977).

This replication is not only justified but also necessary to confirm the reality of the effect obtained by these investigators. "One replication is worth a thousand t-test", we quote (Plutchik 1968). Exact replication is rare in the behavioral sciences (Denzin, 1970). Our work is a non-exact replication (Ostrom 1971). It also a "constructive replication" (Lykken 1968), because in our attempt to confirm the empirical relationships claimed in earlier reports, we formulated our own methods of sampling, measurement and statistical analysis.

It is a survey research. It is a cross cultural analysis. The validity and generalizability of this study can be significantly improved by making more explicit the pitfalls that are integral to its planning and execution.

We adopted clearly a behavioristic paradigm emphasizing objective description of environmental events, operational definitions and controlled experiment. We were seeking antecedent environmental and situational events that could be related to denotable behaviors. We must have been biasing our results at practically all stages of the research process in accordance with our clear paradigm, (Dunnette 1966).

One methological merit we claim is that we examined the effect of sex differences which according tc Carlson (1971) are significant in 74% of studies.

Apart from adhering to that broad behavioristic paradigm we had no explicit original hypotheses, we had some implicit hypotheses that schizophrenics should differ markedly from controls as regards the prevalence of life events in the two particular periods of their lives. The data we obtained failed to support all these hypotheses. Yet from these same data we could derive some new hypotheses that need to be tested and verified in a subsequent study. This will be clear in the content issue.

Our samples were small and significant, that is, meaningful results may have failed to appear "statistically significant" (Kish 1970). We had

no access to such sophisticated statistics that could help to avoid this pitfall.

Content Issues :

a) Early life events and schizophrenia :

Our failure to find significant correlation between early parental loss and schizophrenia, is consistent with the conclusion of of (Brown 1976), (Archibold et al. 1962). So we can consider our results a replication that validates more this lack of correlation between schizophrenia and early parental loss. Our survey, being the first one we know of on Egyptians in Egypt, denote that cultural factors do not play an important role in predisposition to schizophrenia.

b) Recent life events and schizophrenia :

Our results cross validate the findings of workers as Birley and Brown (1970), Wallis (1972), Jacobs and Myers (1976) and Schless et al. (1977); in that schizophrenics have a higher incidence of recent life events than controls.

And more specifically, our results validate the conclusion of Schwartz and Myers (1977) that the overall correlation between life events and psychiatric impairment is weak. Our results favour Brown and Birly's stress on the greater significance of "uncontrolled" life events in schizophrenics' lives. In the same time, our results validate Schwartz and Myers demonstration of the importance of both "controlled and "uncontrolled" life events in schizophrenics' lives.

Loss of a parent within the last three years, but short of the last six months, of the time of presenting for treatment with signs of active process schizophrenia, is an example of the impact of an "uncontrolled" stressfull life event on young Egyptian schizophrenics. Coming to this result through a case-control study encourages us to think of an etiological rela-

tionship, but we stress the fact that we need cohort studies to show how much or how little etiological information there is in this statement.

Though we have got direct evidence that schizophrenics have a great share of "controlled" and "uncontrolled" life events we also know that correlates of stressful life events are not limited to any particular type of disorder, and we reserve a role for the nature of the change and characteristics of the individuals encountering these life events. The life events we studied included both subjective events which are more likely to be responses or manifestations of the schizophrenic pathology, and objective events which are more likely to be consequences or causes. To be able to make the correct causal inference we dated the events to time of presenting to hospital and delineated if an event was within or outside control of subject. We also included events of physical illness and injuries to the subject.

We failed to include in our study factors that would have helped to delineate the mechanisms of mediation of the impact of these stressfull life events, e.g. habituation to stress on repetition, the buffer effect of social bonds, and the mitigating effect of anticipation.

The finding that schizophrenics live more critical life events both of their own making and beyond their control than a matched surgical group seems to be important in planning the delivery of mental health policy in our country. Our finding that this high-risk group is under greater stress than usual suggests that the social units in which such patients are placed need more careful evaluation. Only a small minority of our schizophrenic population are institutionalized or properly placed in extramural facilities simply because of shortage of these institutions. The great bulk of patients it left to their families for living arrangements the quality of which varies greatly. The mental health delivery system is required to interverse in family and other living arrangements to reduce the stressful influences that may contribute to onset or relapse or just a comprised level of adjustment in the society.

TABLE I

The Sociodemographic Data of the Subjects

Age	Experimental (N=40)			Control (N=40)		
	Males	Females	Total	Males	Females	Total
24 or less	10	9	19	10	9	19
25 — 29	6	7	13	6	6	13
30 — 39	3	4	7	3	4	7
40 or above	1	0	1	1	0	1
Socio-economic class						
I	0	0	0	0	0	0
II	0	0	0	0	0	0
III	6	6	12	6	6	12
IV	10	10	20	9	9	18
V	5	5	10	4	4	8
Marital Status						
Single			15			15
Married			25			25

TABLE II

Results

	Subjects		Controls		P
	Males (N=20)	Females (N=20)	Males (N=20)	Females (N=20)	at 0.05
First ten years of life					
Parent death	2	3	1	1	N.S.
Father death	1	1	1	0	N.S.
Mother death	1	2	0	0	N.S.
Parent divorce	2	2	0	1	N.S.
Illness of family member	4	3	2	1	N.S.
Financial trouble	3	3	4	3	N.S.
Three years prior to illness					
Parent death	6	8	1	2	Signif.
Father death	4	5	1	1	N.S.
Mother death	2	3	0	1	N.S.
Spouse death	2	3	1	1	N.S.
Subjects divorce	3	3	1	1	N.S.
Moving house	3	2	0	1	N.S.
Illness in a family member	2	3	2	2	N.S.
Work trouble	5	2	2	2	N.S.
Financial trouble	3	4	3	2	N.S.
Financial Improvt.	0	3	1	3	N.S.
Military trouble	5	0	3	0	N.S.
Law trouble	3	1	2	2	N.S.
Marital disharmony	3	4	2	2	N.S.
Major physical illness	4	3	1	1	N.S.

REFERENCES

Archibald, H.C., Bell, D., Miller, C. and Tuddenham, R.D. (1962) Bereavement in childhood and adult psychiatric disturbances. *Psychosomatic Medicine* 24 : 343-51.

Birley, J.L.T., and Brown, G.W. (1970) Crises and life changes preceding the onset or relapse of acute schizophrenia : Clinical Aspects *Brit. J. Psyehiat.*, 116 : 327-33.

Birtchnell, J. (1978). Early parent death and the clinical scales of the MMPI, *Brit. J. Psychiat.*, 132 : 574-79.

Brown, G.W. (1967). The family of schizophrenic patients. In A. Coppen and A. Walk, (Eds.) *Recent development in Schizophrenia*

Carlson, R. (1971) Where is the person in personality research ? *Psychological Bulletin* 75 : 203-219.

Denzin, N.K. (1970) The Research Act : *A theoretical introduction to Sociological Methods*. Chicago : Aldine.

Dohrenwend, B.S., and Dohrenwend, B., P., (1978) Some issues in research on stressful life events. *The Journal of Nervous and Mental Disease*. Volume 166 No. 1 : 7-15.

Dunnette, M.D. (1866) Fads, fashions and foldrol in psychology. *American Psychologist*, 21 : 343-352.

Grant, I., Sweetwood, H.L., Yager, J., and Gerst, M.S. (1978) Patterns in the relationship of life events and psychiatric symptoms over time. *Journal of Psychosomatic Research*, 22 : 183-191.

Jacobs, S., and Myers, J. (1976) Recent life events and acute schizophrenic psychosis : a controlled study. *The Journal Nervous and Mental Disease*, Vol. 162. No. 2 : 75-87.

Kish, L. (1970). Some statistical problems in research design. In D.E. Morrison and R.E. Henkel (Eds). *The Significance Test Controversy-A Reader*. Chicago: Aldine, 127-141.

Lykken, D.T. (1968) Statistical Significance in psychological Research. *Psychological Bulletin* 70: 151-159.

Rahe, R.H. (1978). Life Change measurement clarification. *Psychosomatic Medicine*, 40, No. 2: 95-97.

Ostrom, T.M. (1971). To replicate or explicate *American Psychologist*, 26: 312.

Plutchik, R. (1968). *Foundations of Experimental Research*. New York: Harper & Row.

Schless. A.P., Teichman, E., Mendels, J., and Diguacomo, J.N. (1977) the Role of Stress as a precipitating factor of Psychiatric Illness. *Br. J. Psychiat.* 130: 19-22.

Schneider, K. (1959) Clinical Psychopathology. In translation by *M. W. Hamilton* London: Cassell.

Schwartz, C.C. and Myers, J.K. (1977) Life Events and Schizophrenia: Comparison of Schizophrenics with a community sample. *Arch. Gen. Psychiatry*, 34: 1238-1241.

Wallis, G.G. (1972) Stress as a Predictor in Schizophrenia. *Brit. J. Psychiat.* 120: 375-84.

AUTHORS

A.M. ASHOUR, M.D., M.R.C. Psych., D.P.M. & N., D.M., Lecturer in Psychiatry.

A.M. NASSEF, M. Psych. Registrar.

A. SADEK, M.D., M.R.C. Psych., D.P.M., Assistant Professor of Psychiatry.

Z. BISHRY, M.D., D.P.M. & N., Assistant Professor of Psychiatry.

F. LOTAIF, M.R.C. Psych., D.P.M., Assistant Professor of Psychiatry.

Department of Psychiatry, Faculty of Medicine, Ain-Shams University Cairo, Egypt.

ABSTRAIT

Les événements de la vie et la schizophrenie : Une étude par cas-contrôle

40 schizophrènes se présentant à la clinique psychiatrique et montrant les signes de Schneider ont été contrastés à 40 malades de la clinique chirurgicale attendant une chirurgie froide pour hernies et hemorrhoides.

Les deux groupes n'ont pas différé significativement en ce qui concerne la prévalence dans leur historique de certains événements de vie dans les premières 10 années de leurs vie.

Le groupe de schizophrènes a montré une augmentation statistiquement significative dans la prévalence d'une perte parentèle par la mort dans les 3 dernières années avant la présentation à l'hôpital.

Le groupe des schizophrènes a montré une augmentation dans d'autres événements récents de la vie.

Ces résultats sont discutés à la fois du point de vue de la méthode et du contenu.

الملـــــوجز

احداث الحياة والفصام

يناقش هذا المقال نتائج دراسة مسحية لعينة من الفصـــاميين (٤٠) المتقدمين للعلاج بالعيادة الخارجية وتظهر عندهم أعراض (وعـــــلامات) شنيدر ، ولقد اختيرت العينة على أســـــاس اجرائى ، واستخدمت كعينة ضابطة مجموعة مماثلة من المنتظرين لاجراء جراحات بسيطة وخالين من علامات المرض العقلى أو تاريخه ٠

أوضحت الدراسة أنه لا يوجد فارق بين العينتين بخصـــوص احداث الحياة فى السنوات العشر الأولى للحياة ولكن أوضحت الدراســـــة أن الفصاميين موضوع الدراسة تعرضوا لعدد أكبر من أحداث الحياة حديثـة الوقوع مقارنة بالعينة الضابطة ، وأن وفاة أحد الوالدين فى الثلاث ســنوات السابقة على التقدم للمستشفى أكبر بنسبة ذات دلالة احصائية واضحة ٠

وعلى ذلك فان هذه الدراسة تنبه الى أهمية العناية بالأسرة والمجتمع الذى يخرج منه الفصاميون للحياة وسطه مع حساسيتهم الشديدة لاحداث الحيـــاة ٠