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Early parental loss and depressive disorder in Japan

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Abstract The aim of this study is to determine in a Japanese sample whether or not the permanent loss of a parent by death or separation in childhood is aetiologically associated with unipolar major depressive disorder (according to RDC). We compared the incidence of parental loss before 17 years of age by death or separation between 122 depressed inpatients and 94 non- and never-depressed medical controls. Early maternal death was found to be significantly more common in the depressives than in the controls. Separation from either parent also showed a trend towards an increased incidence in the depressive group. No significant difference in the incidence of early paternal death was found.

Key words Parental loss · Depressive disorder · Aetiology · Japan

Introduction

Since the emphasis by psychoanalysts on the relevance of early traumatic loss to the development of adult depressive disorder (Abraham 1927; Bowlby 1951; Freud 1917), numerous studies have investigated the aetiological relationship between early parental loss and depression in adulthood. In the 1970s and 1980s, Brown and his colleagues played a significant role in this subject and published systematic studies. They investigated depressed women and consistently found that loss of mother before 17 years of age by death or separation was one of the risk factors for a depressive disorder presenting subsequently (Brown et al. 1977; Harris et al. 1986). However, many

contradictory results were also reported. These studies were well reviewed, but the conclusions of the authors were inconsistent (Crook and Eliot 1980; Lloyd 1980; Tennant 1988). Lloyd (1980) concluded that the childhood loss of a parent by death generally increases the risk for depressive disorder; whereas, Crook and Eliot (1980) stated that parental death during childhood had not been established as a factor of aetiological significance in adult depression. Tennant (1988) distinguished parental death and parent-child separations and concluded that there was some evidence that separations might contribute to adult depression but no evidence that parental death was a significant risk factor.

The inconsistency in the literature requires further studies. Furthermore, studies among non-Western populations have rarely been conducted. This study investigates a Japanese sample and examines whether or not permanent loss of mother or father before 17 years of age due to death or separation is a risk factor for adult depressive disorder.

Subjects and methods

A series of 126 patients aged 18–65 years with major depressive disorder according to the Research Diagnostic Criteria (RDC, Spitzer et al. 1978), who were consecutively admitted to the psychiatric unit at Teikyo University Hospital, Tokyo, from September 1984 to August 1992, was collected. Patients with bipolar disorders were excluded. Also excluded were readmissions during the period. We examined the case notes of each patient and obtained information on parental loss. As Finlay-Jones et al. (1981) found that the reliability for reports of the permanent break-up of the parents' marriage was high, but that of temporary separation due to war, seeking work, or hospital admission, was low, we defined early parental loss as the permanent loss of a parent before the age of 17 years due to death or separation. Almost all separations resulted from the parents' marital discord. The age limit was set following other investigators (Brown et al. 1977;

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Harris et al. 1986; Roy 1983, 1985). Of 126 case notes examined, 4 did not have sufficient information on parental loss. The remaining 122 patients (40 men and 82 women) constituted the depressive group.

The controls were medical patients aged 18–65 years who were in- or out-patients treated in a unit for internal medicine at the same hospital between November 1991 and December 1992. We sampled them by matching their age distribution and comparing their sex ratio to that of the depressive group, but were blind to other demographic and medical data. We interviewed them to obtain information on demographic characteristics (i.e. marital status and education history), parental loss, and current and past psychiatric treatment. At the time of interview, the Zung Self-Rating Depression Scale (SDS, Zung 1965) was also conducted to detect the presence or absence of depressive disorder. Individuals who had current or past depressive disorder or other psychiatric illnesses were excluded from the controls. This is because an increased incidence of parental loss has been reported not only in depressive disorder but also in other psychiatric illnesses, for example, schizophrenia (Wyatt and Nicholi 1979), neurotic disorders (Kendler et al. 1992), and personality disorders (Bradley 1979; Greer 1964). The following four exclusion criteria were used: 1. current or past psychiatric treatment, 2. current or past intake of psychotropic medication for at least 1 week, 3. an SDS index score of 60 or more, and 4. a past history of attempted suicide. The SDS is widely used in Japan and the reliability and the validity of the Japanese version has been established (Fukuda and Kobayashi 1973). A Japanese general population survey by Sarai (1979) reported that the mean SDS index score was higher by about 10 than that reported by Zung (1965) and approximately 20% of the Japanese general population scored 60 or more. Sarai has suggested that an index score of 60 is the appropriate cut-off point for Japanese. Of 117 medical patients interviewed, 23 (19.7%) met at least one of the exclusion criteria. The remaining 94 (35 men and 59 women) constituted the control group. The main medical illnesses under treatment in the control group were respiratory (33%), gastro-intestinal (19%), circulatory (14%), connective tissue (12%), diabetic or other metabolic (10%) diseases, and others (12%).

Firstly, we compared demographic characteristics including age, marital status, and education history between the depressive group and the control group. Then we compared the incidence of parental loss by the sex of the subjects, the sex of the lost parent, and the cause of loss (i.e., death or separation). For the statistical analyses of the distribution of age (parametric data), marital status (categorical data), and education history (ordinal data), the Student's *t*-test, χ^2 -test, and Mann-Whitney *U*-test were used, respectively. For the analyses of the incidence of parental loss, Fisher's exact probability test was used. All *P*-values reported are two-tailed. Statistical differences were considered significant if the two-tailed probability was $P < 0.05$, and non-significant trends are reported corresponding to $0.10 > P > 0.05$.

Results

The mean age of the depressives was 46.3 ± 12.8 (SD) years (men: 47.5 ± 11.1 ; women: 45.7 ± 13.5) and that of the controls was 46.0 ± 12.3 (men: 45.6 ± 11.5 ; women: 46.3 ± 12.7). There was no significant difference in the age distribution between the two groups (total: $t = 0.16$, $df = 214$, $P = 0.87$; men: $t = 0.73$, $df = 73$, $P = 0.46$; women: $t = -0.26$, $df = 139$, $P = 0.80$, by Student's *t*-test). Marital status and education history are shown in Table 1. No significant difference was found between the two groups in the distribution of marital status (total: $\chi^2 = 2.50$, $df = 2$, $P = 0.29$; men: $\chi^2 = 1.55$, $df = 2$, $P = 0.46$; women: $\chi^2 = 2.54$, $df = 2$, $P = 0.28$, by χ^2 -test) or education history (total: $U = 5455$, $z = 0.66$, $P = 0.51$; men: $U = 606$, $z = 1.07$, $P = 0.28$; women: $U = 2075$, $z = 1.56$, $P = 0.12$, by Mann-Whitney *U*-test).

Table 2 compares the incidence of parental loss before 17 years of age by the sex of the subjects, the sex of the lost parent, and the cause of loss. Six depressives and 2 controls had lost both of their parents. For example, a female depressive lost her father by death at the age of 7 years and her mother died when she was 11 years of age. In cases like this, each loss experience was counted individually. When the incidence of early separation from mother/father was compared, individuals who had lost

Table 1 Marital status and education history

	Depressives			Controls		
	Men <i>n</i> = 40	Women <i>n</i> = 82	Total <i>n</i> = 122	Men <i>n</i> = 35	Women <i>n</i> = 59	Total <i>n</i> = 94
<i>Marital status</i>						
Single	6	11	17	7	12	19
Married	34	56	90	27	41	68
Divorced/widowed	0	15	15	1	6	7
<i>Education history</i>						
– Junior high school	9	23	32	9	13	22
– High school	10	42	52	13	26	39
College/university	21	17	38	13	20	33

Table 2 Comparisons in incidence of loss of mother by death or separation and that of father before 17 years of age

	Death		Separation		Total	
	D	C	D	C	D	C
<i>Loss of mother</i>						
Total	11/116**	1/93	6/111	1/93	17/122***	2/94
Men	5/ 38	1/35	2/ 35	0/34	7/ 40*	1/35
Women	6/ 78**	0/58	4/ 76	1/59	10/ 82**	1/59
<i>Loss of father</i>						
Total	15/113	12/92	9/107	2/82	24/122	14/94
Men	3/ 37	6/35	3/ 37	0/29	6/ 40	6/35
Women	12/ 76	6/57	6/ 70	2/53	18/ 82	8/59

*: $P < 0.10$, **: $P < 0.05$, ***: $P < 0.01$ (Fisher's exact probability)
D: Depressives, C: Controls

mother/father by death were subtracted from the sample, and vice versa.

Loss of mother

In the total sample, the incidence of loss of mother before 17 years was significantly greater in the depressives than in the controls ($P = 0.0027$, by Fisher's exact probability test). Maternal death was significantly more common in the depressives than in the controls ($P = 0.013$). When males and females were examined separately, maternal loss by death or separation in the male depressives showed a non-significant trend ($P = 0.061$). In women, maternal death alone and the total of maternal death and separation were significantly more common in the depressives than in the controls ($P = 0.037$ and $P = 0.025$, respectively).

Loss of father

No comparison in the incidence of loss of father reached a statistical significance or a trend.

Separation from either parent

In the total sample, as is shown in Table 2, increased incidences of the rate of both separation from mother and that from father in the depressive group were observed, although they failed to reach a level of statistical significance (separation from mother: $P = 0.13$; separation from father: $P = 0.12$). To examine the effect of a separation experience from either parent on the development of depressive disorder, we combined the data concerning separation from mother and that from father. Eleven of the 98 depressives who had not suffered any parental death and 3 of the 83 controls who had not experienced parental death were found to have experienced loss by separation (including 4 depressives who had experienced separation

from both of their parents). This difference in the incidence of separation showed a trend towards an increased incidence in the depressive group ($P = 0.091$).

Effect of parental psychiatric illness on early loss

To investigate genetic influence on early loss, we examined the family history of the depressives. There were two depressives whose parent had suffered from psychiatric illness which led to an early maternal loss experience: a male depressive who was found to have lost his mother at his infancy by her suicide due to depression, and a female depressive whose father's alcohol dependence seemed to have contributed to her parents' divorce, resulting in separation from her mother. Among the depressives who lost their father, a female depressive was found to have lost her father by suicide.

Discussion

Our results revealed clear differences between the incidence of maternal loss and that of paternal loss. In the total sample, loss of mother was observed significantly more often in the depressives than in the controls, with statistical significance greater than the 1% probability. When the sex of the subjects was examined separately, the female depressives experienced maternal loss significantly more often than the controls and the male depressives showed a trend in the same direction. In contrast, comparisons concerning loss of father did not yield a significant difference nor a trend. This suggests that loss of mother is much more related to the development of depressive disorder than loss of father. This is consistent with findings by Brown and his colleagues (1977, 1986). There were only two depressives whose parent suffered from psychiatric illness resulting in early maternal loss, indicating that the observed excess of maternal loss in the depressive group is unlikely to be due to genetic factors.

As to whether or not parental death and parent-child separations differ in the postulated pathogenic effect, Brown et al. (1977) and Harris et al. (1986) reported that early parental loss by death as well as by separation was a risk factor for depressive disorder. Pfohl et al. (1983) reported a higher incidence of early maternal death in depressives compared with schizophrenics. However, there have been many other studies reporting that loss of a parent by separation is pathogenic but loss by death is not (Favarelli et al. 1986; Hällström 1987; Perris et al. 1986; Roy 1983, 1985). In the present study, the rate of maternal death was significantly higher in the depressives than in the controls ($P = 0.013$), which is in line with the findings of Brown and his colleagues (1977; 1986) and Pfohl et al. (1983).

On the other hand, the separation experience also showed a trend towards an increased incidence in the depressive group compared with the controls. The observed difference between the two groups in the incidence of sep-

aration from mother [6/111 in the depressives vs 1/93 in the controls) and that from father (9/107 in the depressives vs 2/82 in the controls) were similar, which would suggest that separation, whichever the sex of the lost parent is, could be associated with the development of depressive disorder. This is consistent with previous studies (Harris et al. 1986; Roy 1985; Tennant et al. 1982). According to a view by Tennant (1988), the quality of parenting will have been disrupted before and perhaps after the separation due to marital discord in both cases of separation from mother and that from father.

Studies examining the early upbringing environment of depressives have pointed out that poor parenting in the pre- or post-loss period is related to the development of the illness (Harris et al. 1986; Parker and Hadzi-Pavlovic 1984). Harris et al. (1986) found lack of adequate parental care was more frequent after loss of mother than after loss of father. These findings and the view by Tennant (1988) could partly explain the mechanism of the pathogenic effect of early parental loss on the development of adult depressive disorder. In addition, from a socio-cultural point of view, it has been consistently pointed out that Japanese fathers play much less of a role in raising children than fathers in Western countries, and Japanese mothers tend to give unlimited gratification to or to meet the formidable dependency needs of their children rather than to treat them as an autonomous being, which consequently makes the mother a great controller of the child (Smith 1983). This differential role of Japanese parents in raising children from those in Western countries may explain in part the clear difference between the effects of maternal loss and paternal loss on the development of depressive disorder.

The current study has several methodological limitations. First, we obtained information on parental loss by review of medical records for the depressive group, whereas the information for the control group was obtained by interview. This differential assessment of parental loss might have biased the data. However, an interview method has been generally considered to be more sensitive than a review of records. Thus, this differential assessment might, if responsible for any bias, have introduced bias towards the null hypothesis. Another aspect of the differential assessment is that interviewers were aware of which group (control or depressive) the subjects belonged to, since each of the medical patients interviewed was included into the control group unless he/she was excluded by the exclusion criteria. This non-blind assessment could introduce bias in favor of the hypothesis under the current study. Thirdly, possible confounding factors such as social class and parental age at birth, were not controlled. Low socio-economic status of the parents may increase both the risk for depression in their offspring and the risk of early parental death. However, no significant difference was found between the depressives and the controls in education history, which is highly correlated with parents' socio-economic status in Japan (Statistical Bureau, Management and Coordination Agency, Japan 1989). This indicates that the effect of socio-economic

class if any, would be minimal. Fourthly, the depressives under the current study were all inpatients, implying that their depressive illness as a whole was shifted to be relatively severe. Thus, the observed association between parental loss and the development of depressive disorder may be confined to severe depressive disorder. In fact, Birtchnell (1970) and Brown et al. (1977) found a greater incidence of early parental death in severe than in moderate depressives.

In spite of these limitations, this Japanese study is consistent with European studies by Brown and his colleagues (1977, 1986) which showed that early maternal death is a risk factor for adult depressive disorder. Furthermore, it is suggested that the permanent separation from a parent is also possibly associated with the development of depressive disorder. No association was found concerning paternal death.

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