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CHILD EMOTIONAL AND PHYSICAL MALTREATMENT AND ADOLESCENT PSYCHOPATHOLOGY: A COMMUNITY STUDY IN JAPAN

Makiko Yamamoto
Yokohama International College of Social Welfare, Japan

Noboru Iwata
University of Occupational and Environmental Health, Kitakyushu, Japan

Atsuko Tomoda
Tokyo Metropolitan University, and Japanese Society for the Promotion of Science

Shiho Tanaka
University of Tokyo

Kaori Fujimaki
Yokohama National University, Kanagawa, Japan

Toshinori Kitamura
National Institute of Mental Health, NCNP, Chiba, Japan

The rate of different types of maltreatment of children younger than the age of 16 by parents was investigated among a sample of 119 Japanese nonconsulting adolescents. Emotional neglect, threat, putting to shame, slapping, punching with a fist, hitting with an implement, and burning by

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Correspondence to: T. Kitamura, Department of Sociocultural Environmental Research, National Institute of Mental Health, NCNP, 1-7-3 Kohnodai, Ichikawa, Chiba 272-0827, Japan.

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the father or the mother were reported to have occurred at least several times a year by 21.0%, 26.1%, 14.3%, 40.3%, 25.2%, 14.3%, and 0.8% of the participants, respectively. These figures were much higher than previous estimates from medical and social agency reports in Japan. Some associations were found between specific categories of child maltreatment and the lifetime prevalence of different types of DSM-III-R psychopathology. Among male adolescents, Generalized Anxiety Disorder was associated with being put to shame, punched, or hit with an implement by the mother, while chronic/recurrent Major Depression was associated with being put to shame by either the father or by the mother. Among female adolescents, chronic/recurrent Major Depression was associated with being emotionally neglected or threatened by the father and being slapped by the mother, while single-episode Major Depression was associated only with being slapped by the mother. These figures suggest that childhood maltreatment has effects on psychopathology among adolescents, particularly emotional maltreatment associated with chronic/recurrent Major Depression. *© 1999 John Wiley & Sons, Inc.*

INTRODUCTION

Since Kempe, Silverman, Steele, Droegemueller, and Silver (1962) reported children who were injured nonaccidentally as "the battered child syndrome," child maltreatment has been attracting the attention of researchers in a variety of fields—medicine, psychology, education, politics, and law. Research indicates that child maltreatment may have undesirable effects upon child development (Burgess & Conger, 1978; Egeland & Sroufe, 1981; Egeland, Sroufe, & Erikson, 1983; George & Main, 1979; Grusec & Goodnow, 1994; Smetana & Kelly, 1989; Wolfe & Mosk, 1983). Despite its importance in terms of child care, most studies on child maltreatment have involved only individuals who consulted at clinics or allied social agencies.

A drawback of studies using a consulting population is the possible underestimation of the rate of child maltreatment. For example, reviewing data reported by social agencies, Giovannoni (1989) estimated the annual incidence of child maltreatment in the U.S. as between 3.4 and 10.5 children per 1,000. In contrast, in a community population in the U.S. studied by Straus and Gelles (1986), 3.2% of parents reported having kicked or hit with their fist children aged between 3 and 16; 13.4% having hit their children with some object; 1.3% having beaten up their children; and 0.1% having used a gun or a knife. In Straus and Gelles' (1986) study, the rate of minor violent acts of parents toward their children was even higher—31.8% of the parents reported having pushed, grabbed, or shoved their children, and 58.2% having slapped or spanked them. These figures were derived from a survey conducted in 1975. The figures showed a slight reduction in another population survey in 1985, but it was still higher than that reported by social agencies.

In Japan, it has long been believed that child maltreatment is an extremely rare phenomenon (Ikeda, 1987). A nationwide survey was undertaken, with data collected through all the Consultation Offices for Children from April, 1983 to March, 1984. The number of maltreatment cases found in the total offices was only 416 in a year (Ikeda,

1987). Recently, Shoji (1992), reviewing the Japanese literature, reported that the estimated annual incidence of child maltreatment reported to medical and social agencies in Japan was around 6.6 per 100,000. However, a recent epidemiological study of a community population showed that 7.2% and 4.8% of the adult subjects retrospectively reported having been slapped frequently by mother and hit with an implement by mother, respectively (Kitamura et al., 1995). As stated by Giovannoni (1989), the only answer as to how many children are maltreated annually may be, "it all depends on to whom you are talking and what the discussion is about." Now that a doubt has been cast on the notion that child maltreatment is a rare occurrence in Japan, further study on the rate of child maltreatment may be warranted. As a first step, we conducted a survey on an adult population, viewing their childhood experience retrospectively, because we believed that it would be less intrusive than asking parents about their current parenting styles.

Another drawback of consulting population studies is their emphasis on physical maltreatment, with less attention to emotional maltreatment. Evidence of maltreatment among consulting children is usually based on physical injuries such as bruising, burns, and bone fractures. Cases of child psychological maltreatment may be hidden in a community. Despite the difficulty of its objective definition, Brassard, Hart, and Hardy (1993) defined "psychological maltreatment" as a repeated pattern of parental behavior that conveys to children that they are worthless, unloved, unwanted, or only of value in meeting another's needs. Little has been studied on the rate of emotional/psychological child maltreatment; in Japan such work is nonexistent.

In addition to the immediate effects of child maltreatment on child development and mental health, its longterm effects on adult psychopathology has been a focus of research (Carlin et al., 1994; Kessler & Magee, 1993; Muenzenmaier, Meyer, Struening, & Ferber, 1993; Saxe et al., 1993; Straus, 1991, 1995; Straus & Kaufman Kantor, 1994; Walling et al., 1994; Wind & Silvern, 1994). Among a variety types of psychopathology, depression has drawn attention, possibly due to its high prevalence and incidence in any community. Those studies (Carlin et al., 1994; Kessler & Magee, 1993; Straus, 1995; Wind & Silvern, 1994), however, examined only effects of child physical abuse. Again, little attention has been paid to the effects of emotional maltreatment. Also, these studies did not employ structured diagnostic interview and operational diagnostic criteria such as the Diagnostic and Statistical Manual for Mental Disorders, 3rd Edition Revised (DSM-III-R; American Psychiatric Association, 1987) except for Kessler and Magee (1993) using the Diagnostic Interview Schedule (DIS) and DSM-III. Carlin et al. (1994), Straus (1995), and Wind and Silvern (1994) all used self-rating questionnaires. Such questionnaires may not be ideal for assessing depression because (a) they only cover a short time period prior to the examination (an exception is the use of Lifetime Version of Inventory to Diagnose Depression); (b) their positive predictive value is usually low, compared to their negative predictive value (Kitamura, Shima, Sugawara, & Toda, 1994) so that individuals identified as cases by them may contain false positives; and (c) they cannot subcategorize cases into different types of depressive illness, e.g., chronic or acute, and recurrent or single episode. We, therefore, examined effects of child maltreatment on different types of depression among a community population.

To investigate the longterm effects of childhood experience of maltreatment on later psychopathology— depression and anxiety in particular— we focused on an adolescent population because (a) the longterm effects of child maltreatment, should they be observed, would be more likely to be identified among adolescents than the middle-aged

and the elderly; (b) adolescents are at particular risk of developing depression; and (c) among a Japanese population, a younger population is more likely to have experienced child maltreatment (Kitamura et al., 1996).

The purpose of the present study is to: (a) examine lifetime rates of emotional and physical maltreatment among a community adolescent population; and (b) identify differential effects of child maltreatment on depression and anxiety disorders, together with the subcategories of depression.

METHOD

This study is part of a larger longitudinal epidemiological study on mental health and illness among adolescents who lived in a provincial town in Japan (Tomoda et al., submitted). A total of 1,473 adolescents aged 18 to 21, who had participated in the first part of this study in 1988 (Iwata, Saito & Roberts, 1994) when they were attending junior high schools in the city of Gotemba, Shizuoka Prefecture, were approached to take a part in the present study. The study was approved by the Ethical Committee of the National Center of Neurology and Psychiatry (Kohnodai Campus).

According to the addresses printed in the list of alumni members, we sent an invitation letter with a self-administered questionnaire to the parents' home of all alumni members who had attended the schools at the first study. It had more than 3 to 5 years since the students'graduation from junior high school. Thus, addresses of the predominant subjects seemed different from their parents: they were students in universities, colleges, or vocational schools outside of Shizuoka prefecture or workers, and the remaining few subjects were neither. It is plausible that more than a few families had moved sometime during 1988 to 1991, and that many parents did not forward the survey to their child (the alumni member) for various reasons, e.g., negative attitudes toward a "mental health" study in Japan. Therefore, we unfortunately could not estimate how many letters and questionnaires successfully reached the alumni members.

Out of a cohort of 1,473 adolescents at time 1 survey, questionnaire responses were obtained from 304 members, and 119 (34%) agreed to be interviewed in 1994; 45 males and 74 females. The mean age was 19.3 years old (range: 18 to 21, *SD:* 0.9). Sociodemographic characteristics of the subjects who participated in time 2 survey are shown in Table 1. As a whole, sociodemographics did not differ between the overall sample at time 1 survey and participants at time 2 survey with an exception of more females in the latter subjects.

Each subject gave written, informed consent before the interview. The interview was conducted in a subject's home, the junior high school, or a public hall according to the subject's preference, using a comprehensive schedule, the Time Ordered Stress and Health Interview (Kitamura, 1992), which covers a variety of items including mental health and mental illness.

In the Time Ordered Stress and Health Interview, the participant was asked whether he/she had experienced in his/her life each of key diagnostic symptoms of nonpsychotic nonsubstance major DSM-III-R (American Psychiatric Association, 1987) psychiatric disorders (General Anxiety Disorder, Panic Disorder, Major Depressive Episode, Dysthymia, Manic Episode, Agoraphobia, Social Phobia, Simple Phobia, and Obsessive–Compulsive Disorder). The diagnoses of lifetime prevalence of psychiatric disorders were made according to the DSM-III-R. The key diagnostic symptoms are, for example, unrealistic or excessive anxiety for Generalized Anxiety Disorder, depressed mood and di-

Table 1. Sample Characteristics: Subjects Who Were Surveyed in Young and Late Adolescence

	Time 1 (1988)			*Time 2 (1994)*
Sociodemographics	*Full younger adolescent sample (a) (n = 1.473)*	*Younger adolescent sample (b) (n = 304)*	*Younger adolescent sample (c) (n = 119)*	*Late adolescent sample (c) (n = 119)*
Mean age (SD)	13.6 (0.9)	13.5 (0.9)	13.5 (0.9)	19.3 (0.9)
Age range	12–15	12–15	12–15	18–21
Male (%)	50.4	37.4	37.8	37.8
Father in the household (%)	96.1	97.4	97.0	—
Mother in the household (%)	98.5	97.9	99.0	—
An only child (%)	13.8	13.7	16.7	—

Note. (a) Includes all subjects in time 1 (1988) sample. (b) Includes only subjects in time 1 (1988) and time 2 (1994) sample, who responded to survey questionnaire. (c) Includes only subjects in time 1 (1988) and time 2 (1994) sample, who responded to interview.

minished interest or pleasure in almost all activities for Major Depressive Episode, etc. If the participant affirmed the symptom, then probe questions were asked in a structured format. Any psychiatric episodes identified were further defined as to its onset and offset time and their time sequence with major life events within 12 months before and after the onset. Of the 119 participants, 24 were interviewed by two raters in the same agreement of 0.89 for Major Depressive Episode, 0.60 for Manic Episode, and 0.90 for Phobic Disorders.

As a part of the life-history section, the participant was asked whether he/she had experienced any of seven categories of maltreatment from the father or the mother, before the age of 16. These were (1) emotional neglect, e.g. saying "you are not my child"; (2) threat, e.g., not giving meals and disrupting participants' cherished pets or toys; (3) putting to shame, e.g., scolding cruelly and making fun of the child in front of others; (4) slapping; (5) punching with a fist; (6) hitting with an object, e.g., with a club; and (7) burning, e.g., with a cigarette. Each maltreatment was rated for its frequency from both parents separately on a 5-point scale: never (1); once in the lifetime (2); several times a year (3); several times a month (4); and several times a week (5).

The prevalence of DSM-III-R mental disorders was compared between those adolescents who reported having never experienced each maltreatment, or only once in the lifetime, and those who reported having experienced it several times a year or more, by using the Fisher's exact probability test (Cochran, 1954).

RESULTS

Emotional neglect, threatening, putting to shame, slapping, punching, hitting, and burning from either parent were reported to have occurred at least several times a year by 25 (21.0%), 31 (26.1%), 17 (14.3%), 48 (40.3%), 30 (25.2%), 17 (14.3%) participants, and 1 (0.8%) participant, respectively. Female subjects who claimed emotional or physical abuse at least several times a year before the age of 16 reported their experiences at a slightly higher rate (Table 2). A total of 25.7% of the female subjects, while 13.3% of the male subjects ($\chi^2 = 2.569$, $p = .109$), reported having been emotionally neglected by either parent. A total of 28.4% of the female subjects versus 20.0% of the male subjects ($\chi^2 = 1.042$, $p = .307$) reported having been punched by either parent; 18.9% of the female subjects versus 6.7% of the male subjects ($\chi^2 = 3.431$, $p = .103$) reported having been hit with an implement by either parent. However, none of them reached statistical significance. As expected, the distribution of the frequency of abusive parental behavior was skewed; fewer subjects reported a high frequency of being abused.

The lifetime prevalence of DSM-III-R mental disorders were: Generalized Anxiety Disorder (GAD)–3.4%; Major Depressive Episode (MDE) –24.4%; Panic Disorder–1.7%; Dysthymia–2.5%; Phobic Disorder–16.0%; and Obsessive–Compulsive Disorder (OCD) – 2.5%. The lifetime prevalence and the 12-month prevalence of these disorders have been discussed elsewhere (Tomoda et al., 1995).

For further analyses, we excluded cases of Panic Disorder, Dysthymia, and Obsessive–Compulsive Disorder because of their low prevalence, and Phobic Disorder—its much younger onset would make the temporal sequence of the onset of abuse and disorder difficult to observe. We also divided cases of DSM-III-R Major Depressive Episode into those with only a single episode of a duration of less than 2 years ($n = 7$), and those with either chronic (duration of 2 years or more) or recurrent (two episodes or more) ($n = 4$) episodes.

The lifetime prevalence of GAD and two subcategories of MDE in the male and female subjects are compared between those subjects who reported different abusive behavior and those who reported no maltreatment by either parent in Tables 3–6. Type-1 error was not controlled for because the purpose of this study was exploratory rather than confirmatory.

Among male adolescents, the lifetime prevalence of GAD was significantly higher among those subjects who reported having been put to shame, punched, or hit with an implement by the father at least several times a year. Also, the lifetime prevalence of chronic/recurrent Major Depression (chronic/recurrent MD) was significantly higher among those subjects who reported having been put to shame several times a year by the father and the mother, than those who reported never having the experience or experiencing it only once in the lifetime. Other abusive experiences were not associated with an episode of chronic/recurrent MD among male adolescents. None of the childhood maltreatment experiences were associated with the lifetime prevalence of single-episode Major Depression (single-episode MD) among male adolescents.

Among female adolescents, the lifetime prevalence of chronic/recurrent MD was significantly higher among those subjects who reported having been emotionally neglected or threatened by the father. The lifetime prevalence of single-episode MD was significantly higher among those subjects who reported having been slapped by the mother. None of the childhood maltreatment experiences was associated with the lifetime prevalence of GAD.

Because the mood or anxiety disorders present at the time of interview may have distorted the recall of past events (Blaney, 1986), we reanalyzed the data after excluding those subjects who were in episodes of GAD, Panic Disorder, MDE, or OCD; four males and one female were thus excluded. One of the four excluded male adolescents suffered from current GAD, making it impossible to analyze male subjects' association of GAD with abuse experiences. A similar tendency was found with some associations that lost statistical significance, possibly due to the reduced number of subjects (table not shown, but available from the first author on request). The associations of chronic/recurrent MD with the father's emotional neglect and threat among females, and the association of single-episode MD with mother's slapping, also among females, remained significant.

DISCUSSION

Among the adolescent population that was surveyed, the rates of maltreatment experienced at least several times a year during childhood were higher than previously estimated by using data collected from social and medical agencies. This difference might be caused by the difference in the definitions of "maltreatment"; children were identified as maltreated if they appeared at social agencies with noticeable physical injuries, while we measured the maltreatment in terms of specific rearing behavior. Children maltreated frequently who have no noticeable injuries may seldom be identified as such by medical or social professionals.

In a previous epidemiological study in Japan (Kitamura et al., 1995), where the definition of the maltreatment used was similar to ours, father's scolding, slapping, punching, hitting, and burning were experienced at least several times a year by 22%, 15%, 8%, 2%, and 0% of the subjects, respectively. The corresponding figures for mothers' in this study were 15%, 4%, 2%, 2%, and 1%, respectively. Our figures were still higher than Kitamura et al.'s (1995). The difference may be due to the cohort characteristics: Kitamura et al.'s subjects were much older (the mean age was 53.9 years old and *SD,* 16.6)

Table 2. Experienced Maltreatments by Frequencies

		1 (%)[a]	*2 (%)*	*3 (%)*	*4 (%)*	*5 (%)*
Emotional neglect	Males (n = 45)	38 (84.4)	1 (2.2)	3 (6.7)	3 (6.7)	0 (0.0)
	Females (n = 74)	46 (62.2)	9 (12.2)	6 (8.1)	7 (9.5)	6 (8.1)
Threat	Males	28 (62.2)	5 (11.1)	8 (17.8)	4 (8.9)	0 (0.0)
	Females	49 (66.2)	6 (8.1)	8 (10.8)	6 (8.1)	5 (6.8)
Putting to shame	Males	35 (77.8)	3 (6.7)	4 (8.9)	2 (4.4)	1 (2.2)
	Females	61 (82.4)	3 (4.1)	8 (10.8)	1 (1.4)	1 (1.4)
Slapping	Males	18 (40.0)	10 (22.2)	9 (20.0)	6 (13.3)	2 (4.4)
	Females	31 (41.9)	12 (16.2)	12 (16.2)	9 (12.2)	10 (13.5)
Punching	Males	34 (75.6)	2 (4.4)	5 (11.1)	2 (4.4)	2 (4.4)
	Females	50 (67.6)	3 (4.1)	11 (14.9)	6 (8.1)	4 (5.4)
Hitting with an implement	Males	38 (84.4)	4 (8.9)	2 (4.4)	1 (2.2)	0 (0.0)
	Females	56 (75.7)	4 (5.4)	8 (10.8)	4 (5.4)	2 (2.7)
Burning	Males	42 (93.3)	2 (4.4)	1 (2.2)	0 (0.0)	0 (0.0)
	Females	72 (97.3)	2 (2.7)	0 (0.0)	0 (0.0)	0 (0.0)

[a]1 = never, 2 = once in the lifetime, 3 = several times a year, 4 = several times a month, 5 = several times a week.

Table 3. Lifetime Prevalence of Generalized Anxiety Disorder (GAD) and Major Depression (MD) by the Father's Abusive Behavior Among Male Subjects

Father's abusive behavior	*n*	*GAD (%)*	*MD single episode (%)*	*MD Chronic/recurrent (%)*	*MD combined (%)*
Emotional neglect					
Never/once in the lifetime	43	1 (2)	7 (16)	4 (9)	11 (26)
Several times a year +	2	0 (0)	0 (0)	0 (0)	0 (0)
Threat					
Never/once in the lifetime	40	1 (3)	5 (13)	4 (10)	9 (23)
Several times a year +	5	0 (0)	2 (40)	0 (0)	2 (40)
Putting to shame					
Never/once in the lifetime	39	0 (0)	7 (18)	2 (5)*	9 (23)
Several times a year +	6	1 (17)	0 (0)	2 (33)	2 (33)
Slapping					
Never/once in the lifetime	32	0 (0)	5 (16)	2 (6)	7 (22)
Several times a year +	13	1 (8)	2 (15)	2 (15)	4 (31)
Punching					
Never/once in the lifetime	36	0 (0)	5 (14)	3 (8)	8 (22)
Several times a year +	9	1 (11)	2 (22)	1 (11)	3 (33)
Hitting with an implement					
Never/once in the lifetime	44	1 (2)	6 (14)	4 (9)	10 (23)
Several times a year +	1	0 (0)	1 (100)	0 (0)	1 (100)
Burning					
Never/once in the lifetime	45	1 (2)	7 (16)	4 (9)	11 (24)
Several times a year +	0	0 (—)	0 (—)	0 (—)	0 (—)

*$p < .01$

Table 4. Lifetime Prevalence of Generalized Anxiety Disorder (GAD) and Major Depression (MD) by the Father's Abusive Behavior Among Female Subjects

Father's abusive behavior	*n*	*GAD (%)*	*MD single episode (%)*	*MD Chronic/recurrent (%)*	*MD combined (%)*
Emotional neglect					
Never/once in the lifetime	68	3 (4)	12 (18)	3 (4)*	15 (22)
Several times a year +	6	0 (0)	1 (17)	2 (33)	3 (50)
Threat					
Never/once in the lifetime	68	3 (4)	12 (18)	3 (4)*	15 (22)
Several times a year +	6	0 (0)	1 (17)	2 (33)	3 (50)
Putting to shame					
Never/once in the lifetime	71	3 (4)	13 (18)	5 (7)	18 (25)
Several times a year +	3	0 (0)	0 (0)	0 (0)	0 (0)
Slapping					
Never/once in the lifetime	58	2 (4)	11 (19)	4 (7)	15 (26)
Several times a year +	16	1 (6)	2 (13)	1 (7)	3 (19)
Punching					
Never/once in the lifetime	61	3 (5)	10 (16)	3 (5)	13 (21)
Several times a year +	13	1 (8)	3 (23)	2 (15)	5 (39)
Hitting with an implement					
Never/once in the lifetime	69	3 (4)	12 (17)	4 (6)	16 (23)
Several times a year +	5	0 (0)	1 (20)	1 (20)	2 (40)
Burning					
Never/once in the lifetime	74	3 (4)	13 (18)	5 (7)	18 (24)
Several times a year +	0	0 (—)	0 (—)	0 (—)	0 (—)

*$p < .01$

Table 5. Lifetime Prevalence of Generalized Anxiety Disorder (GAD) and Major Depression (MD) by the Mother's Abusive Behavior Among Male Subjects

Mother's abusive behavior	*n*	*GAD (%)*	*MD single episode (%)*	*MD Chronic/recurrent (%)*	*MD combined (%)*
Emotional neglect					
Never/once in the lifetime	40	1 (3)	6 (15)	3 (8)	9 (23)
Several times a year +	5	0 (0)	1 (20)	1 (20)	2 (40)
Threat					
Never/once in the lifetime	35	1 (3)	5 (14)	3 (9)	8 (23)
Several times a year +	10	0 (0)	2 (20)	1 (10)	3 (30)
Putting to shame					
Never/once in the lifetime	42	0 (0)*	7 (17)	2 (5)*	9 (21)
Several times a year +	3	1 (33)	0 (0)	2 (67)	2 (67)
Slapping					
Never/once in the lifetime	32	0 (0)	5 (16)	3 (9)	8 (25)
Several times a year +	13	1 (8)	2 (15)	1 (8)	3 (23)
Punching					
Never/once in the lifetime	43	0 (0)*	7 (16)	3 (7)	10 (23)
Several times a year +	2	1 (50)	0 (0)	1 (50)	1 (50)
Hitting with an implement					
Never/once in the lifetime	43	0 (0)*	7 (16)	3 (7)	10 (23)
Several times a year +	2	1 (50)	0 (0)	1 (50)	1 (50)
Burning					
Never/once in the lifetime	44	1 (2)	7 (16)	4 (9)	11 (25)
Several times a year +	1	0 (0)	0 (0)	0 (0)	0 (0)

*$p < .01$

Table 6. Lifetime Prevalence of Generalized Anxiety Disorder (GAD) and Major Depression (MD) by the Mother's Abusive Behavior Among Female Subjects

Mother's abusive behavior	*n*	*GAD (%)*	*MD single episode (%)*	*MD Chronic/recurrent (%)*	*MD combined (%)*
Emotional neglect					
Never/once in the lifetime	57	2 (45)	8 (14)	3 (5)	11 (19)
Several times a year +	17	1 (6)	5 (29)	2 (12)	7 (41)
Threat					
Never/once in the lifetime	58	2 (4)	8 (14)	5 (9)	13 (22)
Several times a year +	16	1 (6)	5 (31)	0 (0)	5 (31)
Putting to shame					
Never/once in the lifetime	65	3 (5)	11 (17)	3 (5)	14 (22)
Several times a year +	9	0 (0)	2 (22)	2 (22)	4 (44)
Slapping					
Never/once in the lifetime	53	1 (2)	6 (11)*	3 (6)	9 (17)*
Several times a year +	21	2 (10)	7 (33)	2 (10)	9 (43)
Punching					
Never/once in the lifetime	61	2 (3)	10 (16)	3 (5)	13 (21)
Several times a year +	13	1 (8)	3 (23)	2 (15)	5 (39)
Hitting with an implement					
Never/once in the lifetime	65	2 (3)	12 (19)	5 (8)	17 (26)
Several times a year +	9	1 (11)	1 (11)	1 (0)	1 (11)
Burning					
Never/once in the lifetime	74	3 (4)	13 (18)	5 (7)	18 (24)
Several times a year +	0	0 (—)	0 (—)	0 (—)	0 (—)

*$p < .01$

than ours. Younger people may also be more likely to remember incidents of being abused than elder people. Another possible explanation is that the younger cohort were abused more frequently. Further studies using a longitudinal research design are needed.

In the U.S., Straus (1995) reported that 31.7% of their community participants had experienced physical punishment several times when they were teenagers. The similarity between this and our results might mean that there is no large difference in the incidence of maltreatment between the U.S. and Japan.

It is of note that our study showed a specific relationship between maltreatment types and adolescent psychopathology. Thus, it may be seen from Tables 2–5 that: (a) the lifetime prevalence of GAD was more or less associated with experiences of being physically abused, whereas the lifetime prevalence of chronic/recurrent MD was associated with being psychologically abused, and (b) mothers' abuses were more often associated with male adolescents' psychopathology, whereas fathers' abuses were more often associated with female adolescents' psychopathology.

It has been suggested that experiencing violence from significant others would be likely to cause anxiety, while emotional neglect by significant others would be likely to cause depressive mood. Thus, Higgins (1989) predicted that the presence of a negative outcome such as punitive rearing would lead to the child's vulnerability to agitation-related emotions, whereas the absence of positive outcome, such as a neglectful mood of the caretaker, would lead to the child's vulnerability to dejection-related emotions. Because physical maltreatment is punitive in nature, it may lead to a vulnerability to agitation-related emotion, and hence make one be more likely to experience the onset of GAD. On the other hand, the onset of chronic/recurrent MD was related to psychological maltreatment. Emotional neglect would mean the psychological loss of a significant other, and generate vulnerability to depressive mood. This vulnerability to dejection-related emotion might make a subject more likely to experience the onset of MDE, and so prolong the depressive mood.

It may be assumed that the effects of different types of maltreatment would vary by cultural difference. Deater-Deckard, Dodge, Bates, and Petit (1996) reported that physical punishment raised aggression among European American children, while it did not raise aggression among African American children. This suggests that the meaning of physical punishment differs among cultures; physical punishment affects people of varied cultural backgrounds differently. While adolescents reared in an Asian culture might be susceptible to GAD by experiencing physical maltreatment as well as susceptible to MD by experiencing emotional maltreatment, adolescents reared in other cultures might not. Further investigation is needed to examine this aspect.

Determining whether children experience emotional maltreatments or minor physical maltreatments that might lead to the onset of MD and GAD may be difficult. It is not practical to expect that social agencies will detect all maltreated children, including those without noticeable injuries, because the difference between maltreatment and discipline is difficult to identify; therefore community-based protective intervention for maltreated children is important. Rather, it may be necessary to conduct programs to instruct parents in rearing, like the 6-month health screening by social agencies, which might be repeated at some future date to reduce the abusive rearing of children.

In this study, 61% of the subjects refused to be interviewed. This rate is high. In a previous study concerning mental health with a community sample in Japan (Kitamura et al., 1994), 56% of subjects also refused to be interviewed. These figures might suggest that subjects are afraid to share information about their mental health—epidemiologi-

cal studies concerning mental health are not familiar and are not understood very well. Such studies are still rare in Japan.

Other limitations of our study should be noted. The number of subjects was too small to generalize its results. Retrospective responses to questions about child maltreatment by the subject might be biased by his/her ability to recall and also by the subject's negative mental symptoms at the time of the interview. A risk for social desirability by the subject might bias his/her response. He/she might be eager to let the interviewer recognize the circumstance where he/she had been reared in a satisfactory home, to be looked upon as a socially desirable person.

However, the present study reported that the incidence of child maltreatment was not as low as expected in Japan, and that common disciplinary behavior was associated with the later onset of mental disorders. Further studies are urgently needed to what mediates the experience of maltreatment during childhood to later psychopathology.

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