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The social costs of child abuse in Japan

Ichiro Wada [a,*], Ataru Igarashi [b]

[a] Child and Family Welfare Research Department, Child and Family Research Institute, Tokyo, Japan
[b] Drug Policy Management (DPM), Graduate School of Pharmaceutical Sciences, The University of Tokyo, Japan

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ABSTRACT

The present study calculates the social costs of child abuse in Japan. The items calculated included the direct costs of dealing with abuse and the indirect costs related to long-term damage from abuse during the fiscal year 2012 (April 1, 2012, to March 31, 2013). Based on previous studies on the social costs of child abuse and peripheral matters conducted in other countries, the present study created items for the estimable direct costs and indirect costs of child abuse, and calculated the cost of each item. Among indirect costs, future losses owing to child abuse were calculated using extra costs with a discount rate of 3%. The social cost of child abuse in Japan in the fiscal year 2012 was at least ¥1.6 trillion ($16 billion). The direct costs totaled ¥99 billion ($1 billion), and the indirect costs totaled ¥1.5 trillion ($15 billion). This sum of ¥1.6 trillion for only the year 2012 is almost equal to the total amount of damages of ¥1.9 trillion caused by the 2011 Tohoku Earthquake and Tsunami in Fukushima Prefecture. Moreover, abuse is a serious problem that occurs every year and has recurring costs, unlike a natural calamity. However, Japan has no system for calculating the long-term effects of abuse. Therefore, owing to the scarcity of data, the calculations in the present study may underestimate the true costs.

1. Introduction

1.1. The state of child abuse in Japan

In Japan, the primary agency that deals with child abuse is the child consultation center. As of fiscal year (FY) 2012, there were 207 child consultation centers throughout Japan. The child consultation centers had 9827 employees, 2670 of whom were juvenile welfare officers who deal with children (Japan Ministry of Health, Labour and Welfare, 2013a). In FY 2012 (April 1, 2012, to March 31, 2013), the child consultation centers handled 384,261 cases related to child guidance, 66,807 of which were related to child abuse (Japan Ministry of Health, Labour and Welfare, 2013b). Thus, each juvenile welfare officer handled 143 cases in FY 2012, 25 of which were related to child abuse. These numbers of child abuse cases were the highest since the enactment of the Child Abuse Prevention Law in November 2000 (Japan Ministry of Health, Labour and Welfare, 2013c). In addition, approximately 46,468 children used the Child social welfare services, whose official duty is to provide care for children who require protection owing to abuse and other domestic problems (Japan Ministry of Health, Labour and Welfare, 2013d). These figures demonstrate that child abuse is a major growing problem in Japan.

1.2. Summary of the estimated costs of abuse

Because child abuse is considered to have a major effect on society, many countries have been researching the effects of child abuse from an economic perspective, particularly in terms of its so-called "social costs." In the United States, this social cost has been calculated at $55 billion (Miller, Cohen, & Wiersema, 1996). Various studies have calculated the total direct costs (losses owing to the abuse itself) and indirect costs (long-term effects of abuse) of child abuse as $94,076,882,529 (Fromm, 2001), $103,754,017,492 (Wang & Holton, 2007), and $80,260,411,087 (Gelles & Perlman, 2012). Yet another study estimated this cost to be $123,811,794,000, using a discount rate of 3% to reflect the present value (Fang, Brown, Florence, & Mercy, 2012). Similar studies on the social costs of child abuse have also been conducted in Canada (Bowlus, McKenna, Day, & Wright, 2003), Australia (Taylor et al., 2008), and Germany (Meier-Gräwe & Wagenknecht, 2011). The rationale behind our study was to lend impact to policies concerning child abuse by quantifying the extent of damage caused by child abuse to the Japanese society, by expressing the costs of child abuse in monetary figures to allow for cross-disciplinary comparisons, or by serving as basic resource for policy decisions.

1.3. Study objective

Very few cohort studies, such as those in other countries that investigate the long-term effects of abuse, have been undertaken in Japan; thus, there is an extreme scarcity of basic data on the subject. Neither

* Corresponding author at: Child and Family Welfare Research Department, Child and Family Research Institute, 5-6-8, Minamiazabu, Minato-ku, Tokyo 106-8580, Japan. Tel./fax: +81 3 3473 8341.
E-mail address: wada@aiiku.or.jp (I. Wada).

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the federal government nor local administrations have databases related to the effects of abuse. Thus, social cost research in Japan lags far behind similar research in other countries; hence, no studies have calculated the social costs of child abuse in Japan. Therefore, the objective of the present study is to calculate the social costs of child abuse in Japan based on the results of the few existing studies related to child abuse.

2. Methods

2.1. Selection of items

We used not only social welfare data but also all kinds of data related to child abuse to estimate the prevalence of latent abuse and the effects of abuse on income; these estimates are presented as the social costs of child abuse. Basic statistical data on child abuse before FY 2010 were unreliable because of the Tohoku Earthquake and Tsunami (March 11, 2011), when most of the data were destroyed. Therefore, approximately 90% of the data used in the present study are from FY 2012, and this study calculates the social costs of child abuse in that year. In calculating these costs, we referred to multidisciplinary studies of social cost calculations from Japan and other countries. After determining which items in Japan were estimable, we calculated the direct and indirect costs of those items.

2.2. Direct costs

The items calculated as direct costs were those for which we were able to obtain data: (1) Child social welfare services, (2) administrative costs, (3) private group costs and (4) research expenses. Of these direct costs, the amount related to the child welfare services system was the highest. We were then able to conclude fairly confidently that the next highest costs were medical expenses (Fromm, 2001; Gelles & Perlman, 2012; Wang & Holton, 2007). However, Japan suffers from the fatal flaw of having no database for medical expenses related to the effects of child abuse itself. Neither incidence studies on serious accidents involving children nor child death reviews have been performed or even legislated. Therefore, we were unable to estimate medical expenses as direct costs in the present study.

2.2.1. Child social welfare services system

The child social welfare services system has several types of facilities for receiving children who need them. Children living on welfare services in domestic environments included 4295 children living with foster parents (usually in a private home of a married couple with 1–4 foster children) and 671 children living in family homes (small child-care businesses operated in individual residences with one or more caregivers [usually not a married couple] and 5–6 children). Children living on welfare services in facilities include 29,399 children in foster homes, 3000 children in infant homes, 6028 children in unwed mother support centers, 1286 children in short-term therapeutic facilities for emotionally disturbed children, 1525 children in children's self-reliance support facilities, and 390 children in children's self-reliance aftercare facilities (Japan Ministry of Health, Labour and Welfare, 2013d). No official data exist for the annual costs per child for each of these types of facilities in Japan. Therefore, from among the local governments administering the child welfare services listed above, we used data from 16 local governments that evaluate child welfare service policies. Calculations of per-child costs were based on policy evaluations from FY 2012. The results were as follows: ¥1.38 million ($13,800) per child with foster parents, ¥3.11 million ($31,100) per child in family homes, ¥3.61 million ($36,100) per child in foster homes, ¥8.84 million ($88,400) per child in infant homes, ¥3.18 million ($31,800) per child in unwed mother support centers, ¥5.26 million ($52, 600) per child in short-term therapeutic facilities for emotionally disturbed children, ¥5.72 million ($57,200) per child in children's self-reliance support facilities, and ¥3.27 million ($32,700) per child in children's self-reliance aftercare facilities. Next, the percentage of costs related to child abuse and shouldered by the child social welfare services was calculated by using the percentage of children in each type of facility who had suffered abuse. The results were as follows: 31.5% for foster parents, 53.4% for foster homes, 32.3% for infant homes, 41.4% for unwed mother support centers, 71.6% for short-term therapeutic facilities for emotionally disturbed children, and 65.9% for children in children's self-reliance support facilities. No data are available for the costs of child abuse in family homes and children's self-reliance aftercare facilities; therefore, zero percentage was used for these estimations and could have underestimated the actual costs.

2.2.2. Estimation of administrative costs

In the administrative costs, we included child consultation center costs, local government costs, and other administrative expenses.

The data sources for the child consultation center (prefectures and ordinance-designated cities) costs were the 20 municipalities that evaluate relevant policies. Based on the operating expenses (including business expenses and personnel expenses) of these child consultation centers and the number of abuse cases they handled, we calculated that the annual cost per case was ¥90,000 ($900). This figure was then multiplied by the number of abuse cases nationwide.

In terms of local government, the municipalities that exercise jurisdiction over these child consultation centers also provide support to victims of child abuse. There are 27 such municipalities in Japan. The calculation method used here was identical to that for the cost per case shouldered by child consultation centers. Based on consultation data from the 27 municipalities with policy evaluations available to the public, we calculated the cost per case as ¥11,000 ($110). This figure was multiplied by the number of child abuse cases over the same fiscal year.

The costs described above are welfare division costs. Administrative costs in other fields amounted to ¥10.12 billion ($101.2 million), which comprised the following: ¥120 million ($1.2 million) for police, ¥190 million ($1.9 million) for legal affairs, and ¥9.81 billion ($98.1 million) for education (Japan Ministry of Internal Affairs and Communications, 2012a).

2.2.3. Private groups and research expenses

For private group expenses, we ascertained the FY 2012 costs paid by the 26 private child abuse prevention groups throughout Japan and calculated the total amount of these costs.

In Japan, every year expenses for research related to child abuse are appropriated by the Ministry of Education, Culture, Sports, Science and Technology (National Institute of Informatics) and the Ministry of Health, Labour and Welfare (National Institute of Public Health). The term ‘research’ covers academic research, research done by public officers, or any work done to check the status of abused children. From these databases, we extracted and totaled the amount allotted to all research related to child abuse. A search for FY 2012 yielded 95 hits. The research expenses per case were ¥1.48 million ($14,800) per year.

2.3. Indirect costs

We needed to use child abuse incidence rates as the basis for our calculation as previous studies have done (Libby et al., 2012), but there are no official data in Japan on the incidence of abuse. Therefore, using the same estimation method as Ae, Nakamura, Tsuboi, Kojo, and Yoshida (2012), the present study estimated percentages of child abuse experience by gender and age group (ages 20–64). These estimated values were multiplied by the respective numbers of children of those genders and age group in the overall population to calculate the numbers of people who had experienced abuse. According to these calculations,

976,000 males and 2,789,000 females had experienced child abuse, a total of 3,766,000 people (5.0% of the population).

In addition, based on medical expense data related to the presence or absence of child abuse (head trauma), cost-of-illness analysis has previously been used in Japan to estimate that, at certain hospitals, medical expenses for abused children were 10 times higher than expenses for children who were not abused (Ueda, 2013). However, Japan suffers from a lack of basic data on such items as the percentage of children with head trauma who have suffered child abuse; thus the application of an incidence-based approach is limited. Furthermore, in estimating the social costs associated with exposure to some factor (such as the onset of illness or suffering child abuse), it is appropriate to base the estimate on the extent of the additional loss resulting from said exposure. However, making an estimation simply using "total costs incurred by exposed individuals" would mean that unexposed individuals incur no costs whatsoever, potentially resulting in an overestimation. The use of an incidence-based approach may thus be rather ill-suited to estimating the costs of a widespread phenomenon such as abuse.

Therefore, based on the extra-cost approach used in the social costs of mental disorders (Ikegami, 2003) and smoking cessation (Association for Health Economics Research and Social Insurance and Welfare Report, 2010; Florence, Brown, Fang, & Thompson, 2013; Perou et al., 2013; Takahashi, 2007) in Japan, we estimated the costs of child abuse by calculating extra risk. Indirect costs comprised items related to the following categories, for which extra costs could be calculated: (1) death, (2) medical costs, (3) productivity loss associated with academic ability, (4) divorce, (5) crime and (6) public assistance. Data from FY 2012 were used in these calculations, and the effect of future fault was calculated with a 3% discount rate. Furthermore, owing to the existence of a fairly large gender difference in these underlying data, we calculated costs by gender.

2.3.1. Death-related costs

2.3.1.1. Suicide. Previous research in Japan has shown that whether or not a girl is abused as a child significantly affects whether she will attempt suicide adulthood (Fujino, 2007). Unfortunately, similar data are not reported for men. This present study makes somewhat conservative estimates; therefore, we used the small child abuse risk ratio of 2.8 times for girls under 10 years old, which is lower than for abused children of other ages. Using this value and the abuse prevalence rates by gender and age group, we estimated the percentages of extra suicides caused by being abused as a child by gender and age group. These values were multiplied by the number of suicides in FY 2012 (Cabinet Office, Government of Japan, 2013; Japan National Police Agency, 2014) to calculate the numbers of extra suicides. We also determined the amount of productivity losses owing to suicide up to the age of 64 from the 2012 wage census (Japan Ministry of Health, Labour and Welfare, 2013d). For example, for ages 20–29, assuming suicide at age 25 as a median value, we calculated the total amount of cumulative productivity losses up to the age of 64 (for males: ¥124,320,000 [$1.24 million]/year; for females: ¥86,030,000 [$860,300]/year). The above data of actual suicides in FY 2012 show a higher rate for men than for women, thus, our model tends to underestimate rather than overestimate the associated costs of suicide.

2.3.1.2. Death because of abuse. The most recent statistics indicate a total of 99 child-abuse deaths in Japan in the 2012 fiscal year, 41 of which were part of collective suicides and 58 of which were not (Japan Ministry of Health, Labour and Welfare, 2013f). Although children aged 2 or younger accounted for 67.2% of abuse deaths that were not part of collective suicides (median age: 1 year), the abuse deaths as a part of collective suicides showed a wide age distribution of 0–17 years (median age: 5 years). Using these median values, the amount of productivity loss per person was calculated as ¥82.23 million ($822,300)/year for collective suicide abuse deaths and ¥70.93 million ($709,300)/year for non-collective suicide abuse deaths.

2.3.2. Medical costs

2.3.2.1. Self-harm. The costs of self-harm are broadly divided into emergency transport costs and self-harm treatment expenses. Costs for the latter were largely scattered, and no data could be obtained; therefore, only the former was estimated. We determined that 45,000 (0.85%) of the 5.249 million emergency transportation personnel were involved with cases of self-harm (Japan Ministry of Internal Affairs and Communications, 2012c). Based on these data and a self-harm risk ratio of 3.37 times higher than normal, we estimated the number of extra annual emergency transportation personnel needed for self-harm cases (716.4 cases). We used this value to estimate the number of extra self-harm cases owing to child abuse, and we multiplied that number by the ¥500,000 cost per emergency transport case (National Institute for Land and Infrastructure Management, 2009). Medical expenses and productivity losses must be estimated not only for self-harm associated with abuse, but also for lingering disorders resulting from self-harm and abuse. However, the outcomes of physical impediments resulting from self-harm were unclear, as was the direction of the causal relationship between such impediments and the occurrence of abuse. Therefore, the present study did not include those estimates.

2.3.2.2. Mental disorders. We estimated the social cost of mental disorders in Japan based on patient surveys and a report from a survey of medical care activities in public health insurance (Fukuda, 2012). These estimates included the costs of mood disorders (including bipolar disorder), which were ¥310.2 billion ($3.10 billion) in medical expenses and ¥2.105 trillion ($21.05 billion) in productivity losses. These productivity losses do not include those owing to early death. Dividing these costs by 1,014,000 (the number of patients in the patient survey of mood disorders) yields per-person costs of ¥308,000 ($3,080)/year in medical expenses and ¥2.076 million ($20,760)/year in productivity losses. The 12-month prevalence of depression is reported here as 1.17% in males and 3.06% in females, whereas the 12-month risk ratio owing to abuse is reported as 3.6 times higher than normal (Kawakami, 2007). We used these data to calculate the extra annual costs of depression onset associated with abuse. We did not include a wider variety of mental disorders such as posttraumatic stress disorder, alcohol abuse or drug addiction, because no national data for Japan were available for these disorders.

2.3.2.3. Other medical expenses. Here, we examined the total amount of past medical expenses not related to mental disorders. People who have previously experienced abuse have significantly higher annual average medical expenses per person (¥37,800 ($378)) than those with no past history of abuse (Machino, 2014). Multiplying this amount by 3,766,000 (the number of people who have experienced abuse) yields total extra medical expenses of more than ¥142.35 billion ($1.42 billion). However, this estimate may overestimate the ¥72.02 billion ($720.2 million) in extra medical expenses related to mental disorders, as calculated above. Because the present study uses somewhat conservative estimates, we subtracted the overlap and included ¥70.33 billion ($703.3 million) as "extra medical expenses not related to mental disorders."

2.3.3. Productivity losses associated with academic ability (reduced lifetime earnings)

We first weighted data from surveys of people who had spent time in welfare facilities, examining the highest levels of education they had completed (City of Osaka, 2012; Kyusharen Association of Foster Home, Kyusharen Association of Foster Home Survey Study Committee, 2013; Saitama Prefectural Government Social Welfare Division, Department of

Child Safety, 2013; Shizuoka Association of Foster Home, 2012; Tokyo Metropolitan Government Bureau of Social Welfare and Public Health, 2011). We then created a distribution of lifetime earnings by academic background calculated from a wage census (Japan Ministry of Health, Labour and Welfare, 2013e), as well as a nationwide distribution of the highest levels of education completed, which was determined from an employment status survey (Japan Ministry of Internal Affairs and Communications, 2013). Lifetime earnings for junior high school graduates, high school graduates, technical school/junior college graduates, and university graduates were estimated to be ¥84.77 million ($847,300), ¥96.34 million ($963,400), ¥96.83 million ($968,300), and ¥116.87 million ($1.17 million), respectively.

2.3.4. Divorce

We calculated the number of extra divorces rising from abuse per 10,000 people according to the overall prevalence of abuse among females. Our calculations used the relative risk ratio of divorce of 2.41 times higher for women who have experienced abuse (Fujino, 2007), as well as the annual number of divorces and the divorce rate per 10,000 people (Japan Ministry of Health, Labour and Welfare, 2010). We thus calculated 4 extra divorces per 10,000 people. In addition, currently married women in their first marriage have 1.84 times as much income as currently unmarried women who are divorced (Tanaka, 2010). Unfortunately, data from the Japan Ministry of Health, Labour and Welfare are not complete for women under the age of 40, for the past 25 years. Therefore, setting an average age of 40 years at divorce, we estimated the difference in income from age 40 to age 64 based on the wage census. Using a 3% discount rate, the total earnings for women aged 40–64 years are ¥66.91 million ($669,100). Setting a standard employment rate at 40 years of 69%, divorce results in productivity losses of ¥25.09 million ($250,900). The sources of the above estimates presented data for women only. Therefore, we did not calculate divorce-related costs for men.

2.3.5. Crime

Here, "increase in crime" refers to the increase in crimes committed by adults who were abused as a child. The risk ratio of arrest for those who were abused versus non-abused people is 4.0 times higher (Fujino, 2007). Based on these data and arrest numbers by gender and age (Japan Ministry of Justice, 2013), we estimated that an extra 9770 people are questioned for suspected crimes as a result of abuse. We multiplied this figure by each of the following per-person judicial costs (Ikegami, 2003): ¥11,571 ($115)/year for cases with no arrest or detention (2950.5 cases), ¥92,572 ($925)/year for cases with an arrest but no detention (559.2 cases), and ¥555,433 ($5554)/year for cases with an arrest and detention (6260.1 cases).

2.3.6. Public assistance

2.3.6.1. Payment Increase. In Japan, 2.091 million people, 1.64% of the overall population, receive public assistance (Japan Ministry of Health, Labour and Welfare, Social Welfare and War Victims' Relief Bureau, 2013). The amount of public assistance received per year per person is ¥1.7 million ($17,000) (Japan Ministry of Internal Affairs and Communications, 2012b). Of all the people currently receiving public assistance, 21.1% of males and 25.0% of females have experienced abuse (Machino, 2014). Based on these data and the prevalence of abuse by gender and age, we calculated the extra numbers of people receiving public assistance and the extra amount of that assistance by gender and age.

2.3.6.2. Support reduction. Among people currently receiving public assistance, those who have abused their children in the past receive significantly less support (a difference of ¥18,571 ($185)/year) from their families (primarily their children) now than those who have not (Machino, 2014). Any support such persons receive results in an equal reduction in public assistance payments. Therefore, we calculated this cost as "the opportunity cost of abuse." Using the report by Machino, we calculated a total of 18,378 people who were complicit in abuse and have children who are receiving public assistance.

3. Results

As shown in Table 1, the total direct cost of child social welfare services is ¥82.7 billion ($827 million). This total is comprised of the following: ¥1.9 billion ($19 million) for foster parents, 5.6 billion ($567 million) for foster homes, ¥8.6 billion ($86 million) for infant homes, ¥4.9 billion ($49 million) for unwed mother support centers, ¥4.9 billion ($49 million) for short-term therapeutic facilities for emotionally disturbed children, and ¥5.8 billion ($58 million) for children's self-reliance support facilities. Administrative costs amounted to ¥17 billion ($170 million), including ¥6.1 billion ($61 million) for child consultation centers, ¥700 million ($7 million) for local governments, and ¥10.1 billion ($101 million) for other administrative costs. Other costs included ¥100 million ($100,000) in private group costs and ¥100 million ($100,000) in research expenses. All direct costs totaled ¥999 billion ($1 billion) (Table 1).

As shown in Table 2, indirect costs included the following: ¥89.1 billion ($891 million) in death-related costs (¥51.9 billion [$519 million] for males, ¥37.2 billion [$372 million] for females), ¥579.9 billion ($5.79 billion) in medical costs (¥84.1 billion [$841 million] for males, ¥495.7 billion [$4.95 billion] for females), ¥140.3 billion ($1.40 billion) in productivity losses (education) (¥36.4 billion [$364 million] for males, ¥103.9 billion [$1.03 billion] for females), ¥377 billion ($3.77 billion) in divorce-related costs (0 for males, ¥377 billion [$3.77 billion] for females), ¥3.6 billion ($36 million) in crime-related costs (¥2.6 billion [$26 million] for males, ¥900 million [$9 million] for females), and ¥312 billion ($3.12 billion) in public assistance (¥166 billion [$1.66 billion] for males, ¥146 billion [$1.46 billion] for females). The total of all indirect costs was ¥1.5018 trillion ($15.01 billion) (Table 2).

By adding the total direct and indirect costs, we found that the total social cost of child abuse in Japan in FY 2012 was ¥1.6 trillion ($16 billion).

4. Discussion and conclusions

The United States has begun to use certain comparisons, such as comparing child abuse costs to those incurred by diabetics (Fang et al.,

Table 1
Direct costs.

Item	People	Per-unit cost ($1000)	Extra costs ($1 million)
(1) Child social welfare services			827
Foster parents	4295	4.4	19
Family homes[a]	671	ND	0
Foster homes[a]	29,399	19.3	567
Infant homes[a]	3000	28.6	86
Unwed mother support centers	3714	13.2	49
Short-term therapeutic facilities for emotionally disturbed children	1286	37.7	49
Children's self-reliance support facilities	1525	37.7	58
Children's self-reliance aftercare facilities	390	ND	0
(2) Administrative costs			170
Child consultation centers	67,604	0.9	61
Local governments	73,200	0.1	7
Other costs			
Police	ND	ND	1
Legal affairs	ND	ND	2
Education	ND	ND	98
(3) Private group costs	26	50.9	1
(4) Research expenses	95	14.8	1
Total direct costs			999

Note: Sums of individual items may not match totals owing to rounding.
ND = no data was available.
[a] Please note that in the Japanese context, 'homes' means facilities for many children, not private homes in the western sense, i.e., not a house where a child lives with foster parents.

Table 2
Indirect costs.

Item	Males	Females	Extra costs ($1 million)
(1) Death-related costs	519	372	891
Suicide	481	335	816
Death because of abuse	38	37	75
(2) Medical costs	841	4957	5799
Self-harm[a]	1	3	4
Mental disorders (medical expenses)	85	572	657
Mental disorders (productivity losses)	573	3862	4435
Other medical expenses[a]	182	521	703
(3) Productivity losses (education)	364	1039	1403
(4) Divorce[b]	0	3770	3770
(5) Crime	26	9	36
(6) Public assistance	1660	1460	3120
Payment increase	1657	1460	3116
Support reduction	2	1	3
Total indirect costs	3410	11,608	15,018

Note: Sums of individual items may not match totals due to rounding.
[a] Calculated by multiplying by only male–female ratio of abuse victims.
[b] No data on child abuse and divorce for males were available.

2012), as a basis for decision-making in government policy. The amount of damage resulting from the 2011 Tohoku Earthquake and Tsunami in coastal Fukushima Prefecture (including not only damage from the earthquake itself but also other types of costs, such as evacuations owing to the nuclear disaster) totaled ¥1.9 trillion ($19 billion) (Terasaki, 2011); the cost of child abuse in Japan is comparable to the cost of damages from the tsunami. Thus, it can be said that Japan suffers huge losses equivalent to such a major disaster every year.

A review of the proportion of direct costs to indirect costs as determined in the present study shows that the proportion of direct costs is far smaller in Japan than in other countries. This fact may affect the number of people paid to deal with child abuse in Japan, as well as the budget and research expenses allocated to child abuse. Research on social costs, which is a form of policy evaluation, could form the basis of a plan-do-check-action (PDCA) cycle as grounds for the allocation of budget and personnel, as well as the establishment of related laws. Future expansion of this type of research is therefore necessary.

It is highly likely that both direct and indirect costs in the present study are underestimated. Because there are no databases or research results for medical expenses related to child abuse, this item was not included as a direct cost in the present study. Normally, as in other countries, prior research results could serve as references, making calculations for each item possible, whereas in Japan, calculations were not possible for some items. In addition to the fundamental items included in the present study, there may still be uncalculated costs for which no research or measurement has been performed. The data analysis in this study included items for which data were available only for women or only for people up to 64 years. Thus, these limitations in the scope of our estimates may have resulted in underestimations because of the complete absence of a system for the long-term assessment of the damage caused by child abuse in Japan, as well as the complete absence of a shared database among the medical, health insurance, and social welfare systems. In addition, the field of child abuse prevention is academically underdeveloped, as there have been no cost calculations for either direct or indirect costs, such as those in the present study. An absence of data or limited data that underestimates the total cost may seem to indicate that Japan has a low rate of child abuse. However, it must be noted that this bias is created from a lack of data, rather than from a lower incidence of abuse. A system for assessing the long-term effects of abuse is necessary for policymaking in the future. In particular, sufficient and accurate numbers such as national data of long-term victims, medical and legal reproduction of child abuse and educational data must be gathered allowing for a deeper understanding of child abuse in Japan, and also to allow for international comparisons.

The present study is the first to calculate the total social costs of child abuse in Japan. According to our calculations, child abuse resulted in social losses of ¥1.6 trillion ($16 billion) in FY 2012 alone. This level of damage is nearly on par with the damage to Fukushima Prefecture caused by the 2011 Tohoku Earthquake and Tsunami, even though the calculations in the present study are considered conservative owing to insufficient data. Therefore, future research in this field is necessary.

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