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# Home safety practices to prevent child injury and its association with family and children's daily routines in Japan: A cross-sectional study

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**Abstract**

**Aim:** To investigate the association between children and their families' daily life routines and the implementation of safety practices in their homes.

**Methods:** A cross-sectional study was conducted using a self-administered questionnaire among parents of 3-year-old children, who visited a public health center in Tokyo for their health checkups. Associations between the implementation of safety practices and family and children's basic daily routines were assessed using a multivariate logistic regression.

**Results:** Data from 336 parents were analyzed. Three items were found to be significantly related to the non-implementation of safety practices, such as "television-watching behavior: after 8:00 p.m." (adjusted odds ratio = 1.88, $p = .02$), "washing hands: not every time after getting home" (adjusted odds ratio = 2.24, $p = .02$), and "Family Routines Inventory: lower score" (a measurement of the routinization of a family's daily life; adjusted odds ratio = .83, $p = .01$).

**Conclusion:** The cumulative results suggest that the lack of safety practices implementation signify nonadherence to daily routine practices by parents.

**KEYWORDS**

accident prevention, child rearing, parent–child relations, public health nurses

## 1 | INTRODUCTION

Child unintentional injuries are a significant public health problem (World Health Organization, 2008). In Japan, it has been the main cause of death among children aged 1–9 years (Ministry of Health, Labour and Welfare, 2016a). According to child death reviews from Tokyo in 2006–2010, 87% of deaths due to unintentional injury, excluding those involving traffic accidents, were preventable (Suzuki, Hikiji, Tanifuji, Abe, & Fukunaga, 2014). Among children aged ≤4 years, >78% of unintentional injuries (except for traffic accidents) occurred at home (Ministry of Health, Labour and Welfare, 2016b). One of the major public health strategies to prevent child injuries at home is by promoting safety practices among parents (World Health Organization, 2008). To provide effective safety practices, identification of parents who implement less safety practices in the community is essential.

The Japanese government encourages parents' home safety practices for children via the "Healthy Parents and Children 21"— a nation-wide campaign aimed at parent–child health and health promotion (Ministry of Health, Labour and Welfare, 2001). The Japanese public health nurses who work in public health centers are expected to play a role in the promotion of safety practices. Because

  

health checkups at 3–4 months, 18 months, and 3 years cover >95% of families (Ministry of Health, Labour and Welfare, 2016c), they may be the best opportunities to obtain and provide information (Osamura et al., 2004a) as well as to identify parents who undertake fewer safety practices. Public health nurses ask parents about their own daily safety practices, and when they find a lack of or insufficient safety concerns, the nurses provide information and individual education. However, in cases wherein the parents do not report true responses, the public health nurses cannot detect the risk for unsafe child rearing. Therefore, self-report by parents who were unaware of safer child-rearing practices has less validity. The characteristics of parents, whether not following or following safety practices, should be clarified with observable proxy variables.

In this study, we focused on children's basic daily routines and family routines. The basic daily routines such as eating, sleeping, toilet use, hygiene, and clothing help develop children's physical and mental health. Moreover, basic daily routines require adequate discipline and repeated teaching for their successful implementation by children (Foster, Hunsberger, & Anderson, 1989). We considered that parents who are more caring of their child would better implement basic daily routines and safety practices.

Family routines are defined as "behaviors that are repeatedly observable, involve two or more family members, and occur in the day-to-day and week-to-week life of the family with predictability" (Jensen, James, Boyce, & Hartnett, 1983). Family routine has been reported in other research to strengthen parental role competence (Sprunger, Boyce, & Gaines, 1985), because these routines help promote and foster a sense of stability, cohesion, and continuity among family members (Boyce, Jensen, & James, 1983). In addition, having a family routine encourages parents to understand their child's physical and mental conditions more proactively (Fiese, 2007; Murphy, Marelich, Herbeck, & Payne, 2009; Spagnola & Fiese, 2007). This means that when parents perform their day-to-day activities with their children in a regular pattern and under strict observation, parents can notice even small changes or developments in their children. This practice, when consistently performed, may help parents predict how their children move in the home and their risk status to injury. We considered that parents who implement family routines more seriously would be involved with their child, making way for better implementation of safety practices.

### 1.1 | Purpose

This study aimed to clarify the implementation status of safety practices for preventable unintentional injury by parents and the association of safe practices with family and children's basic daily routines, as well as to obtain an insight to educate parents who do not implement safety practices.

For the purpose of this study, we examined our study factors on 3-year-old children and their parents. As compared to that for 18-month-old children, only few parents implemented home safety practices for their 3-year-old children (Osamura et al., 2004b; Yamamoto, Honda, & Nagata, 2016). As a result, the rate of occurrence of home injury in 3-year-old children is high (Tokyo Fire Department, 2016). From the view point of public health nurses, the age of 3 years is the last health checkup visit, when parents' poor safety practices in child rearing can be studied.

If this study indicates that children and family routine is associated with safety practices, it may become possible for public health nurses to identify parents who do not undertake safety practices, which in turn may develop and promote family routine as an interventional activity that can increase adoption of safety practices in households.

## 2 | METHODS

### 2.1 | Design and sample

A cross-sectional study was conducted using a self-administered questionnaire between August 4, 2015 and November 24, 2015 at two public health centers in a ward of the Tokyo metropolitan area.

Health checkups for 3-year-old children were held at two public health centers (main center and branch) in this ward. We extracted the children's health checkup data from the public health center with the parents' consent and with the understanding to keep the information confidential.

The questionnaires, documents that explained the aim and procedure of the study, and consent forms to the parents of the children were enclosed in the child health checkup notification, which the ward mailed to parents before the respective checkup. The parent participants brought their completed questionnaires and consent forms at the time of their visit for their child's health checkups. We collected these forms directly and gave small gifts (worth approximately $1) to the participants as a sign of gratitude for their participation. The parents who did not bring the completed questionnaire to the health center were asked to participate in the study and provided with the questionnaire on their agreement to participate.

This study was approved by the Ethics Review Board of our university and was conducted in accordance with the Declaration of Helsinki.

### 2.2 | Measures

#### 2.2.1 | Dependent variables

Implementation of home safety practices were inquired via an originally developed questionnaire (Table 1). The items

**TABLE 1** The distribution of safety practice implementation (N = 336)

| | Implementing | | Not implementing | |
|---|---|---|---|---|
| **Safety practices** | **Always (%)** | **Sometimes (%)** | **Rarely (%)** | **Not at all (%)** |
| Fall: Prevention for climbing up | 202 (64.5) | 56 (17.9) | 19 (6.1) | 36 (11.5) |
| Ingestion: Safer feeding | 269 (80.1) | 54 (16.1) | 8 (2.4) | 5 (1.5) |
| Ingestion: Safe storage of small products | 151 (44.9) | 126 (37.5) | 33 (9.8) | 26 (7.7) |
| Burn: Avoiding something hot | 181 (53.9) | 131 (39.0) | 17 (5.1) | 7 (2.1) |
| Burn: Safe storage of hot households | 226 (67.3) | 72 (21.4) | 27 (8.0) | 11 (3.3) |
| Near drowning: Supervised bathing and playing with water | 256 (76.2) | 66 (19.6) | 11 (3.3) | 3 (0.9) |
| ALL: Above six safety practices | 52 (15.5) | 168 (40.0) | 115 (34.2) | 1 (0.0) |

*Note.* Missing data/data of "neither agree nor disagree" were excluded from this table.

included in the questionnaire referred to significant safety practices for preventing four injuries: falls, accidental ingestions, burns, and near drowning. These four injuries are the common unintentional home injuries reported worldwide (World Health Organization, 2008), and their severity tend to be higher than that of others (Tokyo Fire Department, 2016). The safety practice items were obtained from previous studies, leaflets, and educational materials for safety in Japan (Tokyo Metropolitan Government Bureau of Social Welfare and Public Health, 2013; Yamanaka, 2009).

Some of the items included, "prevention for climbing up" as a fall-prevention behavior for which parents do not place things on the side of the window or on the balcony onto which children could climb. The items "safer feeding" and "safe storage of small products" referred to accidental ingestion-prevention behaviors; for the former behavior, parents could cut the foods for the children into suitable bite sizes or let them eat slowly, while, for the latter behavior, the parents could keep small items at a height to which a child cannot reach or in a locked place. The items "avoiding something hot" and "safe storage of hot households" referred to burn-prevention behaviors; for the former behavior, the parents should not handle hot things while holding a child or when a child is nearby, while, for the latter behavior, parents should keep hot items such as an iron or electric kettle at a height to which a child cannot reach or in a locked place. The items "supervised bathing or playing with water" referred to drowning-prevention behavior, for which parents should not leave a child alone to take a bath or let the child play with water unattended.

The participants responded to the questions on a 4-point Likert scale (not at all, rarely, sometimes, and always). Parents were categorized as "implemented (0)" if they responded with "always" or "sometimes" when they implement all six items of safety practices and as "not implemented (1)" otherwise.

## 2.3 | Major independent variables

### 2.3.1 | Family routines

A Japanese version of the Family Routines Inventory (JFRI) was used to measure the family routines. The JFRI is a self-reported measurement of how a family maintains regular routines in their daily life. It is a 25-item, five-dimensional questionnaire (Cronbach's $\alpha = .81$ in a Japanese family sample) (Sato et al., 2014). In this study, we used the dimension termed "parent–child involvement" which included items such as "parents read a story to their child or speak to him/her" and "parents play with their child sometime during the day." The items were scored on a 4-point Likert scale ranging from 1 (almost always) to 4 (almost never), with higher scores indicating more frequent involvement in each family routine. The Cronbach's α of the dimension used in this study was .642.

### 2.3.2 | Basic daily routines for children

Data on children's basic daily routine items were collected from the guideline of health checkups and health guidance for children (Tamazaki et al., 2014). These items included "breakfast eating", "brushing teeth under parental guidance", "using a diaper", "TV-watching behavior", "hand washing", "wake-up time", and "bedtime". The answers were dichotomized.

### 2.3.3 | Other independent variables

Children's and parents' variables that contributed to the safety practices in previous research were selected (Kendrick et al., 2013).

### 2.3.4 | Children's characteristics

Data on sex, birth weight, birth order, and the need for professional follow-up were obtained from the health checkup.

Information about injury experiences (e.g., falls, accidental ingestions, burns, and near drowning) were queried by the researcher-designed questionnaire.

### 2.3.5 | Parent characteristics

Data on age, mother's educational level, subjective economic status, job status, relationship with partner, and past opportunities of receiving information about injury prevention were obtained from the researchers' questionnaires. The self-rated health conditions and information on difficulty experienced in child rearing were obtained from the public health center questionnaire.

### 2.3.6 | Home environmental characteristics

Data on the house size (<50 $m^2$/50–69 $m^2$/>70 $m^2$), whether a younger sibling lives together, and whether a grandparent(s) lives together were obtained by the researcher-designed questionnaire. Parent preference to continue child rearing in the study ward was also obtained from the public health center questionnaire.

## 2.4 | Analytic strategy

First, descriptive statistics (mean and standard deviation [SD] for continuous variables and the total number and percent for categorical variables) was performed. Second, a logistic bivariate regression analysis was conducted to evaluate the association between safety practice implementation and other variables. Finally, a logistic multivariate regression analysis was conducted to investigate the associations with the implementation of safety practices, and the basic daily routines and family routines were deemed to be empirically or statistically important. The data were checked for multicollinearity using tolerance figures and the variance inflation factor. The statistical significance was set at $P < .05$. SPSS version 23.0 (IBM, Armonk, NY, USA) for Windows was used for all statistical data analysis.

# 3 | RESULTS

Figure 1 presents the flow chart of the participant collection. Among the 550 parents requested, 369 (58.3%) responded by returning completed questionnaires. We excluded 33 participants from these 369 questionnaires for analysis as 31 participants missed responding to one or more safety practice items and two were parents to twins. The latter exclusion was made because the quantity and quality of parenting twins are different from those of parenting a single child (Leonard & Denton, 2006).

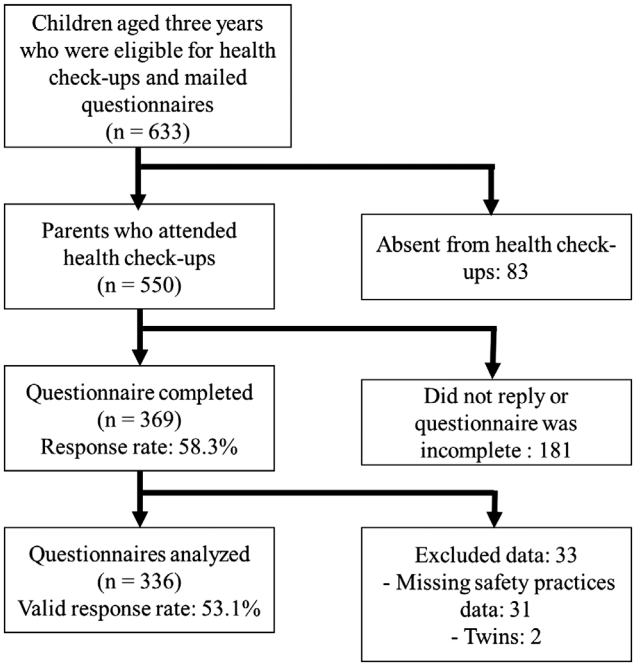


**FIGURE 1** Flow chart of the study participation process

Table 1 shows the participants' implementation of safety practices. The percentages of parents who did not implement "safer feeding," "avoiding something hot," and "supervised bathing and playing with water" were 3.9, 7.2, and 4.2%, respectively. Otherwise, the percentages of parents who did not implement "prevention for climbing up," "safe storage of small products," and "safe storage of hot households" were 17.6, 17.5, and 11.3%, respectively.

Table 2 presents the participant's demographic characteristics by safety practice implementation. Half of the children of the participants were boys (49.4%), and the rates of children who experienced injuries (e.g., fall, accidental ingestion, burn, and near drowning) and were treated for the same at either home or a hospital from birth to 3 years of age were 58.6% and 13.1%, respectively. Of the 336 participants, 319 participants were mothers (95.8%). The mean age of the mothers was 35.9 years (SD = 4.71). Over half of the mothers were university graduates. The results from a bivariate analysis revealed that the following characteristics were more likely to result in a failure to implement safety practices: "Boy" (odds ratio [OR] = 1.86), "Relationship with partner: bad" (OR = 2.80), "Breakfast: not every morning" (OR = 3.62), "TV-watching behavior: after 8:00 p.m." (OR = 2.90), and "Hand washing: not every time at getting home" (OR = 2.64). "Family routines" were less likely to result in not implementing safety practices (OR = 0.80).

Table 3 shows the multivariate logistic regression analysis results for safety practices. We entered "child's sex", "relationship with partner", "breakfast eating", "TV-watching behavior", "hand washing", and "score of family

routines" as independent variables, and adjusted for the potential covariates: mother's education level, economic status, and mother's job status. After adjusting for these aspects, the safety practices were associated with the following factors: "Boy" gender (adjusted OR [AOR] = 1.95), "TV-watching behavior: after 8:00 p.m." (AOR = 1.88), "Hand washing: not every time (AOR = 2.24), and "Lower score of family routines" (AOR = 0.83).

**TABLE 2** Sample characteristics and the association with safety practice implementation (N = 336)

| | Total (n = 336) | | Implemented[a] (n = 220) | | Not implemented[b] (n = 116) | | Regression[c] | | |
|---|---|---|---|---|---|---|---|---|---|
| **Variables** | **n** | **(%)** | **n** | **(%)** | **n** | **(%)** | **OR** | **(95% CI)** | ***P* value** |
| **Children's characteristics** | | | | | | | | | |
| Sex: Male | 166 | (49.4) | 97 | (44.1) | 69 | (59.5) | 1.86 | (1.18–2.94) | .01 |
| Birth weight: ≥2,500 g | 307 | (92.7) | 199 | (91.7) | 108 | (94.7) | 1.63 | (0.63–4.22) | .32 |
| Birth order: Second or later | 135 | (40.3) | 83 | (37.9) | 52 | (44.8) | 1.33 | (0.84–2.10) | .22 |
| Result of health check-ups: No problem | 276 | (82.1) | 183 | (83.2) | 93 | (80.2) | 0.82 | (0.46–1.46) | .49 |
| Experience of injury (total): Yes | 197 | (58.6) | 131 | (59.5) | 66 | (56.9) | 0.90 | (0.57–1.41) | .64 |
| Experience of injury (visited hospital): Yes | 44 | (13.1) | 31 | (14.1) | 13 | (11.2) | 0.77 | (0.39–1.54) | .46 |
| **Parents' characteristics'** | | | | | | | | | |
| Numbers of mothers | 319 | (95.8) | 207 | (95.0) | 112 | (97.4) | 0.50 | (0.14–1.84) | .30 |
| Age of mother, mean (SD) | 35.9 | (4.71) | 35.9 | (4.80) | 35.9 | (4.57) | 1.00 | (0.95–1.05) | .98 |
| Age of father, mean (SD) | 38.1 | (5.61) | 38.2 | (5.72) | 38.0 | (5.43) | 0.99 | (0.95–1.04) | .77 |
| Mother's health condition: Good | 293 | (89.3) | 191 | (88.4) | 102 | (91.1) | 1.34 | (0.62–2.89) | .46 |
| Mother's educational level: Middle or high school | 147 | (44.4) | 90 | (41.5) | 57 | (50.0) | 1.41 | (0.90–2.23) | .14 |
| Subjective economic status: Able to manage[d] | 181 | (54.4) | 111 | (50.9) | 70 | (60.9) | 1.73 | (1.00–3.02) | .05 |
| Subjective economic status: Difficult to manage or unstable[d] | 62 | (18.6) | 41 | (18.8) | 21 | (18.3) | 1.41 | (0.69–2.85) | .34 |
| Mothers' job status: Employed | 178 | (54.8) | 114 | (53.0) | 64 | (58.2) | 1.23 | (0.78–1.96) | 0.38 |
| Relationship with partner: Single[e] | 13 | (3.9) | 8 | (3.7) | 5 | (4.3) | 1.27 | (0.41–3.98) | .68 |
| Relationship with partner: Bad[e] | 19 | (5.7) | 8 | (3.7) | 11 | (9.6) | 2.80 | (1.10–7.16) | .03 |
| Received information about injury prevention: Did not | 21 | (6.3) | 12 | (5.5) | 9 | (7.8) | 1.47 | (0.60–3.59) | .40 |
| Mother's perception of difficulty in child rearing: Yes | 146 | (43.6) | 97 | (44.3) | 49 | (42.2) | 0.92 | (0.58–1.45) | .72 |
| **Home environment** | | | | | | | | | |
| Size of house: Less than 49 $m^2$ [f] | 85 | (28.0) | 51 | (25.8) | 34 | (32.1) | 1.40 | (0.79–2.48) | .25 |
| Size of house: 50–69 $m^2$ [f] | 92 | (30.3) | 61 | (30.8) | 31 | (29.2) | 1.07 | (0.60–1.89) | .83 |
| Living with younger siblings: No | 264 | (78.6) | 171 | (77.7) | 93 | (80.2) | 1.16 | (0.66–2.02) | .60 |
| Living with grandparents: No | 300 | (89.8) | 201 | (91.8) | 99 | (86.1) | 0.55 | (0.27–1.13) | .11 |
| Preference to continue child rearing in this area: No | 47 | (14.3) | 28 | (13.0) | 19 | (16.8) | 1.35 | (0.72–2.54) | .35 |
| **Basic daily routines for child** | | | | | | | | | |
| Breakfast: Not every morning | 14 | (4.2) | 5 | (2.3) | 9 | (7.8) | 3.62 | (1.18–11.1) | .02 |
| Brushing teeth with parents' check: Not every time | 294 | (87.8) | 195 | (88.6) | 99 | (86.1) | 1.26 | (0.64–2.47) | .50 |
| Using diaper: Yes | 67 | (20.1) | 41 | (18.7) | 26 | (22.8) | 1.28 | (0.74–2.23) | .38 |
| TV-watching behavior: After 8:00 p.m. | 135 | (41.0) | 70 | (32.3) | 65 | (58.0) | 2.90 | (1.81–4.65) | <.001 |
| Hand washing: Not every time | 64 | (19.2) | 30 | (13.7) | 34 | (29.6) | 2.64 | (1.52–4.61) | <.001 |

**TABLE 2** (Continued)

| Variables | Total (n = 336) n | (%) | Implemented[a] (n = 220) n | (%) | Not implemented[b] (n = 116) n | (%) | Regression[c] OR | (95% CI) | *P* value |
|---|---|---|---|---|---|---|---|---|---|
| Wake-up time: After 8:00 a.m. | 71 | (21.2) | 49 | (22.3) | 22 | (19.1) | 0.83 | (0.47–1.45) | .50 |
| Bedtime: After 10:00 p.m. | 110 | (33.1) | 67 | (30.9) | 43 | (37.4) | 1.34 | (0.83–2.15) | .23 |
| **Score of family routine inventory, mean (SD)** | 14.4 | (1.93) | 14.7 | (1.68) | 13.9 | (2.24) | 0.80 | (0.71–0.90) | <.001 |

*Note*: Missing data were excluded from this analysis.
Abbreviations: CI, confidential interval; OR, odds ratio; SD, standard deviation.
[a]Implemented: Those who answered "sometimes" or "always" to all the safety practices.
[b]Not implemented: Those who answered "not at all" or "rarely" to do at least one of the safety practices.
[c]Bivariate logistic regression not implemented = 1, implemented = 0.
[d]Reference: Stable.
[e]Reference: Good.
[f]Reference: ≥70 $m^2$.

## 4 | DISCUSSION

Our questionnaire-based experiment in this study revealed an association between the implementation of safety practices and the state of children's daily and family routines. Most participant mothers were graduates, which is a higher education level than the general level (Statistics Bureau, Ministry of Internal Affairs and Communications, 2010), which meets the trend in an urban area. Because low maternal educational level is one of the risk factor for child injuries (Centers for Disease Control and Prevention, 2012), our results should be interpreted in this context.

The factors related to implementing safety practices included two basic routines and family routine of parents. Parents who made their children wash their hands every time they got home from outside and asked children to switch off the TV by 8:00 p.m. were implementing safety practices. This relationship is attributable to parental control. These routines are healthy behavior (Akagi, 2012; Foley et al., 2013; Freeman et al., 2014) that has been proved to be beneficial for children's health among the Japanese general population. The attitude of "implementing what seems to be good for children" such as the above-mentioned behaviors are similar to the parenting attitude called "parental control". Parental control is a component of parental attitude that refers to doing what is the best for the child, regardless of the child's intention or requests (Baumrind, 1967). A previous study revealed that parents with low parental control could not regulate children's use of media (Jago et al., 2011). Parents who did not implement hand washing and good behavior of TV watching in this study also had low parental control. Other previous studies have shown that parents who have less parental control had fewer rules about home safety for their children and were less likely to adopt supervision as a means of managing children's risks to injury (Morrongiello, Corbett, Lasenby, Johnston, & McCourt, 2006). It is thus evident that, in this study, the parents who

**TABLE 3** Related factors of safety practices implementation (N = 307)

| Variables (reference category) | OR | (95% CI) | *P* value |
|---|---|---|---|
| Sex: Male (female) | 1.95 | (1.16–3.26) | .01 |
| Mother's educational level: Middle or high school (University) | 1.39 | (0.82–2.37) | .22 |
| Subjective economic status: Able to manage (Stable) | 1.47 | (0.79–2.70) | .22 |
| Subjective economic status: Difficult to manage or unstable (Stable) | 0.97 | (0.42–2.20) | .94 |
| Mother's job status: Not employed (Employed) | 1.28 | (0.72–2.28) | .40 |
| Relationship with partner: Single (Good) | 0.55 | (0.13–2.36) | .42 |
| Relationship with partner: Bad (Good) | 1.40 | (0.44–4.46) | .57 |
| Breakfast: Not every morning (Every morning) | 1.89 | (0.53–6.75) | .33 |
| TV-watching behavior: After 8:00 p.m. (before 8:00 p.m.) | 1.88 | (1.10–3.23) | .02 |
| Hand washing: Not every time (Every time) | 2.24 | (1.17–4.32) | .02 |
| Score of family routine inventory | 0.83 | (0.72–0.96) | .01 |

*Note*. Missing data were excluded from this analysis.
CI, confidential interval; OR, odds ratio.
Multivariate logistic regression analysis: not implemented = 1, implemented = 0.

did not implement safety practices had low parental control. Therefore, parents who could not equip their children with good basic routines may be considered as parents who do not implement safety practice due to low parental control.

Parents who had family routines implemented safety practices more than parents who did have a family routine. Family routines make parents notice their child's daily risk patterns. Family routines can be implemented in a variety of scenes, such as in meal-time, play-time, and reading books at sleeping time. Parents can understand the current status of their children through repeated and well-established family routines. For example, when "parent talks or plays with their child sometime during the day", the parents may notice that their child is interested in carpenter tools placed on a low table and may imagine that their child may want to touch the tools. Parents found a potential risk on "carpenter tools" that were supposed to be safe until then; parents may then implement preventive behavior such as keeping carpenter tools in a safe and locked place. Meanwhile, the six safety practices tested in this study were behaviors that are implemented in various places in the house, such as the kitchen, living room, and bathroom, and in every situation such as when children are in the house or not. There is a possibility that parents found their child's physical abilities and interests due to a lot of parent–child involvement through family routines and were aware of potential risks from the environment. Therefore, parents who implemented family routines are believed to implement better safety practices.

### 4.1 | Limitations and implications

This study has some limitations. First, the data only included parents who attended health checkups and responded to the questionnaires. It is evident that parents who attended their children's health checkup and answered the questionnaires may be more interested in their children's health and safety. Consequently, our data may not represent parents with a "passive interest" in their children's safety and may thus underestimate parents who do not implement safety practices. Thus, it is important to focus on the association between family and children's daily routine and lack of implementing safety in future studies. Second, as most of the data were self-reported, social desirability bias may exist. However, the researchers collected questionnaires directly from the parents so as to avoid inconvenience to the staff of the public health center.

Despite these limitations, our findings are valuable for public health nurses and parents. First, daily routines items are indicators of whether a family implements safety practices. Identifying parents who care for their children more and who implement "good basic routines" according to the age of their children are assumed to better implement safety practices. Moreover, health checkups for a child in a public health center have been recognized as appropriate opportunities to obtain and impart information about safety practices; however, on the practical aspect, it is difficult for public health nurses to spend much time in implementing injury prevention schemes (Osamura et al., 2004a; Tanaka, Ishii, & Kato, 2001). Children's daily routines are already inquired about at health checkups in most of the Japanese public health centers; therefore, the information on safety practices can be obtained easily without incurring any cost. Second, through this study, we have shown the possibility of encouraging parents to implement safety practices as one of clues to the intervention. It is difficult to teach parents to prevent every injury, because a child may get injured in any random scene of everyday life. It is necessary to create awareness among parents regarding the development of their children and the potential environmental risks to children. Future research is therefore warranted to identify the causal relationship between family routines and safety practices toward preventing child injury.

## 5 | CONCLUSION

Family routines, TV-watching behavior, and hand-washing practices were found to be associated with safety practices. These items indicated a lack of safety practices and highlighted the risk of potential child injury. Only a few studies have focused on the daily life predictors of child safety. Family routines have the potential of increasing implementation of safety practices in households. Family routines are observable (Jensen et al., 1983), and they can act as indicators of assessing a family's daily life. Future studies on the mechanisms as well as the causal relationships between family routines and increasing parents' safety practices for their children are warranted to reduce risks of child injuries at home.

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## CONFLICT OF INTEREST

The authors declare there are no conflicts of interests.

## AUTHOR CONTRIBUTIONS

C.H, T.N, R.T-I, N.Y, and S.N. undertook the study design, data collection, analysis and interpretation of data, and manuscript writing.

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