

生活環境の具体的な部分が、各出席者によって明らかにされ、互いの考えが出会う中で、さまざまな対話が生まれてきました。ひとり一人考えは異なるが、年代別に眺めると、同じ年代での共通点もありそうです。農作業後の夜9時過ぎという時間にもかかわらず、会場のあちこちで笑い声も上がり始めました。

#### 4) 4番目の質問：自分の健康について

『特に自分の健康に関連して大切なこと、秘訣などがあれば教えてください』

##### 70歳台

「17年前に心筋梗塞を患い、心臓の冠状動脈を金属で開いて血行をよくしているので、過激な労働を避けている。散歩」

「3度の食事をきちんととる。とくに野菜を。朝のラジオ体操の継続（3時も）。睡眠時間は6～8時間」

「食生活、休養」

「体重を減らす。運動をする。歩く。減塩。食事に注意」

「朝の新聞配達。歩いて1時間」

「働くこと」

「幸福な生活を義務づけられる」

「食生活に注意」

「常に健康診断をしチェックする」

##### 40歳台前半

「快食。快眠。適度な運動。くよくよしない」

「暴飲暴食に気をつける。睡眠を十分にとる」

「友達とのおしゃべり」

「自然食品で生活して、ストレスをためないように生活したい」

「くよくよしない。体を動かすこと。楽しく食事する。食べることに楽しみを見つける」

「大声、大口開けて笑うこと。皆でワイワイ、楽しく食べる。よく眠ること。ストレスをためない」

「腹八分。ストレス発散」

「食生活を見直す。ストレスをためない。ウォーキングを続ける」

「食事、3食きちんと食べる。十分な睡眠をとる。友人とのおしゃべり。心地よい通じがある。

心より笑える。家族とのだんらん。心地よい汗をかく」

「よく動いて太らないように気をつける。食べたいものは食べる」

#### 5) 5番目の質問：町の健康について

『S町の健康を考えたときに、大切なことは何でしょうか。目標にしたいのは何でしょうか』

##### 70歳台

「心の「触れ合い」」

「自分の健康は自分で守ると考えるように仕向ける。健康診断は進んで受けるという意識を高める」

「健康講座」

「食事に注意。食べ過ぎ。減塩。運動」

「自然を大切にすること（環境）。他人を大切にすること」

「ある村では働き過ぎだと思う」

「郷土の潤いがみられ、S町に生を受けたことを誇りに思う。住み良い郷土」

「町の検診を受けること」

「健康診断に積極的に参加する。よりよい食事内容を知らせる」

##### 40歳台前半

「安全な食べ物ときれいな海と、自然」

「現在の自然を残す。運動をする。コミュニケーションをとる」

「難しい!!」

「粗食、自然食を大切にして無理のない食事をする（食品にこだわらずに、食べられるものを食べる）。若者の健康をもっと重視して若年齢の健康に力を入れる」

「季節の野菜や魚を食べたり、食事に十分気を配って食事をとること。隣・近所、楽しく仲良く」

「一人ひとりが生きがいを持つ（趣味でもスポーツでも）」

「定期健診を受ける」

「自分の体を知る。楽しい家庭生活。近隣の声かけ。自分らしい生活ができる。生まれてから死ぬまで自宅で生活できる。近所の子供をしかることが出来る地域社会」

「運動をする。趣味を持つ。近隣と仲良くする」  
これまで町が力を入れてきた定期健診受診率の上昇や減塩運動などを挙げた人もいました。さらに、人と人との、あるいは人と環境との“より良い関係”を挙げた人が多いことが印象的でした。

## おわりに

今回は、生活習慣という言葉に頼らず、「人々が大切にしている毎日の暮らし・生活の過程を考える」という原点に立って、生活と健康の可視化を試みました。

生活マップを作ってみて、この簡単な方法で多くの気づきを得られることが改めて分かります。メタボリックシンドロームに対するキャンペーンにさらされていると、生活習慣は自明のここのように感じられますが、アドラーが lifestyle という言葉を使い始めて以来、生活には、意識される部分と意識されない部分があることも事実です。

意識されない生活の部分に一步近づくことで、どのような発見や洞察が得られるかについては、21世紀の現在でも探究を続ける必要があります。

生活の延長線上にある健康についても、「完全完璧な健康」という理想を前に思考停止するのではなく、考え続けることが大切です。

## 文 献

- 1) 文部科学省：今なぜ「心の健康と生活習慣に関

- する指導」なのか。心の健康と生活習慣に関する指導，実践事例集，6-22。文部科学省，2003
- 2) 守山正樹：全体像の可視化—食のイメージマップ。理学療法 28(6)：810-815，2011
- 3) 守山正樹：環境観・世界観を可視化・言語化する問いかけ Wify の開発。理学療法 28(9)：1149-1160，2011
- 4) 文部科学省：展開例1，学級活動（保健指導）。心の健康と生活習慣に関する指導，実践事例集，30-39。文部科学省，2003
- 5) 守山正樹：心の健康と生活習慣に関するアンケート調査を補完するための補足用対話教材，1-12。福岡大学医学部衛生・公衆衛生学教室，1999
- 6) 守山正樹：“参加”を重視した子どもの健康づくりとは？生活教育 45(3)：42-48，2001
- 7) 奈良先端科学技術大学院大学松本研究室：日本語形態素解析システム ChaSen (<http://chasen-legacy.sourceforge.jp/>)
- 8) 文部科学省：展開例11，指導資料からの出発。心の健康と生活習慣に関する指導，実践事例集，82-91。文部科学省，2003
- 9) WHO：Constitution of the World Health Organization. WHO, 1946
- 10) WHO：The Ottawa Charter for Health Promotion. First International Conference on Health Promotion, Ottawa, 1986
- 11) 守山正樹：住民の立場から作り上げる目標値とは？週刊保健衛生ニュース 1083：10-14，2000

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## 理学療法(士)からみた生活と健康の可視化

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私たちはこれまで、二次元イメージ展開法を用いた生活マップの作成や Wify の問いかけを通じ

て、私たちの日常・暮らしの場面で私たち自身の内面に湧き上がる“ことば”や“イメージ”を可視化する試みを続けています。今回は「生活と健康」をテーマに、これらの“ことば”や“イメー

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## 異なる二つの言葉とそこからの展開 —“健康”と“民族衛生”をめぐって—

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歴史ある民族衛生誌の巻頭言を書く機会をいただいた。これをきっかけに、改めて「言葉」について考えてみたい。書き始めてやはり気になるのは、本誌の和文名にある「民族衛生」、英文名にある「Human Ecology」などの言葉の意味である。しかし1930年の学会創設以来、80年にわたって本学会の看板として用いられて来た言葉、諸先輩が論じて来たこの言葉について、直接に語ることは筆者の手に余る。そこでやや側面から、言葉について考えてみたい。さて言葉 Word とは何だろうか？

Collins の英英辞典を見ると、幾つもの Word の捉え方がある。たとえば；

- ・そこから情報を得る機能「If there is word of something, people receive news or information about it.」
- ・何かを行うことを示す機能「If you give your word, you promise to do something.」
- ・特定のことを指し示す機能「To word something in a particular way means to choose or use particular words to express it.」

これらの Word の用法から、今さらながら確認できるのは、ある言葉を選ぶことで、現象の理解、現象への態度、関連する行動の全てが影響される、という事実である。

言葉の意味として、特に最近気になっているのが健康の定義だ。健康 Health は WHO により、以下のように定義された。

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. (WHO 憲章前文, 1948 年)

1951 年の官報によれば、上記の健康の定義は、「完全な肉体的、精神的及び社会的福祉の状態であ

り、単に疾病又は病弱の存在しないことではない。」と和訳された。この和訳で特に多くの意見が出たのは「well-being」の意味であり、「福祉の状態」だけでなく、「安寧な状態」、「良好な状態」など複数の訳語が当てはめられた。しかし今回、筆者が気にしている言葉は「well-being」ではなく、「complete」である。複数の訳語がある well-being に比較して、complete は筆者がこれまでに参照した限りの文献においては、全て「完全な」と和訳されている。complete を「完全な」と和訳すると、現実にはほとんどあり得ないような理想的な状態を示すことになる。たとえば高校の保健体育科用のある教科書は、「WHO の考え方はすばらしいものですが、とても難しいことでもあります。実際、あまりにも完全な状態を求めすぎているのではないかとされています。」と記載している。しかし本当に「complete=完全な」でいいのだろうか。

再び Collins の辞書で complete を見ると、最初に出てくるのは以下の二つの用法である。

1. If something is complete, it contains all the parts that it should contain.
2. You use complete to emphasize that something is as great in degree or amount as it possibly can be.

上記を対比して考えるなら、complete には 1「完結した」、2「完全な」と、二つの訳語を当てはめられる。

もし、complete に従来から用いられてきた「完全な」ではなく、「完結した」を当てはめることが許されるなら、WHO の定義は、現実には存在しがたい理想を述べているのではなく、現実に存在する多様な、それぞれに完結した健康像を示す

ことになる。一つの言葉の訳語を変えるだけで、WHO の定義は、理想的な定義から等身大の定義へと変質する。

もしそうであるなら、WHO の健康の定義をさらに展開/発展させたプライマリヘルスケアの定義（アルマアタ宣言、1975年）も、ヘルスプロモーションの定義（オタワ憲章、1986年）も、また WHO が1977年以来掲げ続けている HFA（Health for All）の目標も、日本語の世界に生きる者にとっては、これまでとはやや異なった、より現実的で実践的な受け止め方が可能になるかもしれない。

実際には、complete の意味として、1と2のどちらが正しいのだろうか。あるいは両方の意味を含みながら、時代と共に意味的な比重が変容して来ているのだろうか。complete の意味が気になりだして以来、周辺の人々から意見を聞き始めた。今までのところ、筆者と同様の問題意識を持つ人が多く、complete の意味を「完結した」と捉える方に、より多くの賛同が得られている。しかし日本の友人とだけ議論して、結論が出る話ではない。IUHPE（ヘルスプロモーション健康教育世界連合）に関連して、韓国、香港、あるいは WHO 西太平洋事務局の友人にも、意見を聞く作業を開始している。この complete の和訳を通して、「日本語の世界における健康認識や世界認識を、日本の中だけで完結できない」という当たり前の事実、改めて気づかされた。

ここで再度、民族衛生という言葉の問題に戻る。日本民族衛生学会は1930年、学会誌「民族衛生」（英語名；Race Hygiene）は1931年に誕生した。第1巻の巻頭言には、「人生のあらゆるものの源泉たる生命、そしてその生命の根本を浄化し培養せんとするのが、吾が日本民族衛生学会の使命である（1号）」、「人間を人為的に向上させることは全然不可能であるかといえば、それには二つの路があると思う。その一つは昨今欧米で多々行われているように有害な素質を社会から除去することである（2号）」などの記述が並んでいる。その後、歴史の荒波を経て1964年の第30巻1号から

雑誌の英語名が「Human Ecology and Race Hygiene」へと変更された。1982年に至って、さらに英語名の Race Hygiene が削除され、意味の異なる二つの名称「民族衛生、Health and Human Ecology」を持つ現在の状態に至った。民族衛生の語源となった Race Hygiene の発想が世界的には否定される中で、民族衛生という言葉が現代の私たちがどう位置付けるか、問題はまだ解決していない。民族衛生学会がさらに国際的に発展・展開して行くのであれば、国外の友人の意見にも、耳を傾ける必要があろう。

80年の歴史の中で、民族衛生学会総会はずっと一度だけ日本本土を離れ、1939年に台北で開催された。当時の学会抄録によると、20演題中、日本本土に住む日本人を対象とした発表が17演題、満州に住む日本人を対象とした発表が2題、台湾の Paiwan 族を対象とした発表が1題であり、全発表者が日本人だった。

台北開催から72年後の2011年11月、福岡で民族衛生学会をお引き受けするに当たり、学会初日を福岡で行った後、学会二日目の午後には高速艇で玄界灘を越え、釜山で韓国の研究者との交流を計画している。先日、事前準備として延世大学の Nam Eun Woo 先生に、学会の名称について伺ったところ、「民族衛生という名称を特に強調しなければ、韓国人はもうその言葉を気にすることはないでしょう。Health and Human Ecology の名称があるのだから、それでよいのでは。」との返答が得られた。名称がある限り、単なる記号として、その意味を無視するわけにはいかない。歴史的な名称を選んで使い続けることは、その名称に伴う伝統の一端を継承し、責任の一端をも担うことを意味する。しかしその一方で、もう民族衛生という言葉にこだわらないで、東アジアの友人と共に、あらたなヘルスサイエンスを構築すべき時代になったことも感じられる。2011年には多くの皆さまのご参加を得て、韓国の友人たちとの間にも研究と交流と討論の輪が広がることを期待している。

Title:

**Parental views of food-safety education in Japanese primary school**

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## **Abstract**

**Objective:** This study examined Japanese mothers' satisfaction with food-safety education in primary schools, compared the characteristics of mothers who were not satisfied, and identified topics that should be included in food-safety education, according to mothers.

**Design:** An online survey was conducted in March 2011 in Japan. The questionnaire included topics related to food-safety education and satisfaction regarding food-safety education.

**Setting:** Japanese mothers with children attending primary school were asked to complete an online questionnaire.

**Method:** A total of 1,300 mothers completed questionnaires. The sample was divided into two groups according to median scores for satisfaction with food-safety education, and *chi*-square tests were used to compare data related to other questions. The numbers of mothers who selected each topic for inclusion in food-safety education were calculated.

**Results:** Participants were divided into two groups; high satisfaction ( $n = 796$ , 61.2 per cent) and low satisfaction ( $n = 504$ , 38.8 per cent). The low-satisfaction group consisted of mothers who described government action related to the food-safety problem as "inadequate" ( $n = 305$ , 60.5 per cent) and who disagreed with the notion that food items can be 100 per cent safe ( $n = 146$ , 29.0 per cent). More than half of the mothers endorsed "judging freshness", "reading food labels", and "food additives" as important topics to include in food-safety education.

**Conclusion:** Japanese mothers who were not satisfied with food-safety education were more likely to consider government actions inadequate and to disagree with the

notion that food items can be 100 per cent safe. Mothers wanted schools to teach not only the prevention of food-borne illnesses but also other topics related to food safety.

**Key words**

food safety education, primary school, children, parents, Japan

## **Introduction**

Food safety has emerged as a major issue for consumers during recent years. In Japan, school-aged children are expected to learn how to judge the quality and safety of food based on the facts and information in the Manual of Food Educational Guidelines issued by the Ministry of Education, Culture, Sports, Science and Technology in Japan<sup>1</sup>.

School-aged children should learn about food safety for several reasons. First, they will likely prepare food for themselves and for others, including their children and parents, in the future<sup>2-4</sup>. Second, behaviours, attitudes, and beliefs are most likely to be established and most susceptible to change when individuals are young, and these attitudes and beliefs often continue into adulthood<sup>4-10</sup>. Third, knowledge and practices learned at school may be implemented at home and may catalyse changes at home and in the wider community<sup>4, 8-10</sup>.

Thus, several studies of food-safety education in schools have been conducted. Studies of food-hygiene education in the United Kingdom<sup>8, 9</sup> have indicated that hand-washing, personal hygiene, and cleanliness were the topics most commonly taught in primary schools<sup>8</sup> and that the proper cooking of food, cleanliness, and refrigeration were the topics that were most commonly taught in secondary schools<sup>9</sup>. In the United States, an interdisciplinary food-safety curriculum targeted at middle-school students was designed and has been shown to be effective with respect to increasing knowledge and appropriate behaviours<sup>11</sup>. In Japan, focus-group interviews with staff members at primary schools indicated that food-safety education was a broad concept that included a wide range of specific subject areas (e.g., food-borne illnesses, food allergies, food additives)<sup>12</sup>.



Additionally, previous studies have examined the attitudes and perceptions about food-related safety and risk held by consumers with children<sup>13-15</sup>. Dosman et al. found that respondents with more children living in the home were more likely to acknowledge risks associated with food safety including bacteria, additives, and pesticides<sup>13</sup>. Kornelis et al. focused on consumer preferences for different sources of food-safety information and suggested that having children is one of the reasons that consumers rely on many sources for food-safety information<sup>14</sup>. However, Tucker et al. indicated that consumers with children in the household tended to perceive less risk associated with food, including with regard to bacteria, genetically modified foods, and pesticide residues<sup>15</sup>. Thus, the attitudes or perceptions about food safety held by consumers with children remain unclear.

As described above, children have been expected to practice the food-safety behaviour learnt at school and to change their parents' attitude and behaviours accordingly. However, no research on parental attitudes and needs about food safety have been conducted. That is, the degrees to which parents are satisfied with present food-safety education, their attitudes about food safety, and the characteristics of those parents who are not satisfied with such education have not been elucidated. This study examined Japanese mothers' satisfaction with the food-safety education provided in primary schools, compared the characteristics of mothers who were not satisfied with those of mothers who were satisfied and identified the topics that should be included in food-safety education according to the mothers.

## **Methods**

### *Sample collection*

Data were collected via online surveys administered by an Internet research company, Goo (Tokyo, Japan), which employs approximately 370,000 “consumer monitors”. Approximately 14,000 Japanese mothers living in one of five cities (Tokyo, Kanagawa, Osaka, Aichi, or Saitama) with children in primary schools were recruited from these consumer monitors. In total, 5,000 questionnaires were sent randomly via email to potential participants to invite them to participate by accessing the online questionnaire between March 16 and March 18, 2011.

### *Questionnaire*

The survey included questions about the following topics: (1) satisfaction with the current education; (2) perceptions about government actions related to the food-safety problem; (3) beliefs about food-related risks; (4) topics that should be included in food-safety education; and (5) demographic characteristics. The wording of all questions was tailored to the online format by Goo staff members and the researchers. The following sections present the questions posed in each area.

#### (1) Satisfaction with the current education

“Do you think the food-safety education provided in schools is adequate?” Respondents used the following response categories: agree, slightly agree, slightly disagree, and disagree.

#### (2) Perceptions about government actions related to the food-safety problem

“How do you think government actions are related to the food-safety problem?” Respondents used the following response categories: excessive, adequate, inadequate, and don’t know.

#### (3) Beliefs about food-related risks

“Do you think that any food items are 100 per cent safe?” Respondents used the

following response categories: yes, probably, probably not, and no.

#### (4) Topics that should be included in food-safety education, according to mothers

The following 20 items were selected from several sources including previous research<sup>12, 16, 17</sup>, data from the Food Safety Commission<sup>18</sup>, and Japanese curriculum guidelines<sup>19, 20</sup> as potential topics for inclusion in food-safety education: “reading food labels”, “judging freshness”, “‘best-before’ and ‘use-by’ dates”, “food additives”, “pesticide residues”, “local production for local consumption”, “imported food”, “health-food products”, “processed and prepared foods”, “genetically modified food”, “food allergies”, “prevention of food-borne illnesses”, “natural toxins”, “the concept of risk”, “the difference between reassurance and safety”, “the importance of scientific evidence”, “the relationship between the amount ingested and the reaction to chemical substances”, “the roles and responsibilities of consumers”, “the advantages and disadvantages of the media”, and “information literacy”.

Mothers were asked to select the five most important items for inclusion in a school curriculum.

#### (5) Demographic characteristics

We collected data about city of residence, age of respondent, and number, sex, and ages of children.

#### *Statistical analysis*

We categorised respondents into groups according to their own age (20s, 30s, 40s, and 50s) and the ages of their children (children aged 10–12 in the later grades of primary school and others). We next calculated the number of mothers who selected each topic for inclusion in food-safety education. Descriptive statistics were used to

analyse all data.

Responses to satisfaction with the current education were divided into two groups with scores on either side of the median. *Chi-square* tests were used to compare the perceptions about government actions, beliefs about food-related risks, and demographic characteristics of the two groups to identify the characteristics of mothers who were not satisfied with food-safety education. Topics related to food-safety education were analysed in the same way.

All statistical analyses were performed using SPSS ver. 19.0 for windows. *P* values <0.05 were considered significant.

## **Results**

### *Satisfaction with the current education*

A total of 1,300 Japanese mothers completed the questionnaire [response rate to questionnaires: 26.0 per cent (1,300/5,000); response rate to parent population: 9.3 per cent (1,300/14,000)]. The distribution of responses to the question about satisfaction with food-safety education in schools was as follows: agree: 143 (11.0 per cent), slightly agree: 653 (50.2 per cent), slightly disagree: 430 (33.1 per cent), and disagree: 74 (5.7 per cent). Mothers were divided into two groups: the “high-satisfaction” group, which had 796 (61.2 per cent) members, and the “low-satisfaction” group, which had 504 (38.8 per cent) members.

### *Demographic characteristics (see Table 1)*

Six-hundred eighty (52.3 per cent) mothers were in their 40s, 772 (59.4 per cent) had two children, and 723 (55.6 per cent) had children in the later grades of primary school. The average ages ( $\pm$  standard deviation) of children were as follows: first

Table 1
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child, 11.0 (3.2); second child, 8.0 (3.5); third child, 6.4 (3.8); fourth child, 6.6 (4.3); and fifth child, 7.0 (4.3). One mother had more than six children, and her sixth child was 5 years of age.

We found no significant differences between the demographic characteristics of the high- and low-satisfaction groups.

*Perceptions about government actions and beliefs about food-related risks (see Table 2)*

Table2

A total of 584 (44.9 per cent) mothers found government actions related to the food-safety problem to be inadequate; 571 (43.9 per cent) slightly disagreed and 325 (25.0 per cent) disagreed with the notion that food items could be 100 per cent safe.

Significant differences were observed between the high-satisfaction and low-satisfaction groups in terms of their perceptions about government actions and their beliefs about food-related risks. Of those in the low-satisfaction group, 305 (60.5 per cent) believed that government actions related to the food-safety problem were inadequate, but only 279 (35.1 per cent) in the high-satisfaction group held this opinion ( $\chi^2(3) = 103.84, p < 0.001$ ). Of those in the low-satisfaction group, 146 (29.0 per cent) disagreed with the notion that any food item could be 100 per cent safe, and 179 (22.5 per cent) in the high-satisfaction group held this opinion ( $\chi^2(3) = 7.86, p = 0.049$ ).

*Topics that should be included in food-safety education according to mothers (see Table 3)*

Table3

Table 3 presents the topics related to food-safety education that mothers selected for inclusion in school curricula. In total, judging freshness was selected by 758 (58.3 per cent), reading food labels was selected by 711 (54.7 per cent), and food

additives was selected by 661 (50.8 per cent). Learning about health-food products was selected by the fewest mothers.

Food additives was the most popular topic (n=283, 56.2 per cent) in the low-satisfaction group, whereas judging freshness was the most popular topic (n=493, 61.9 per cent) in the high-satisfaction group.

## **Discussion**

This study produced three main results. 1) Approximately 40 per cent of Japanese mothers were in the low-satisfaction group, indicating that they were not satisfied with the food-safety education provided in primary schools. 2) The high- and low-satisfaction groups differed with respect to perceptions about government actions and beliefs about food-related risks. 3) More than half of the mothers selected judging freshness, reading food labels, and food additives for inclusion in education directed at children.

Some mothers expressed dissatisfaction with the food-safety education provided in schools and demanded improvement. In several countries, including Japan, the curriculum for food-safety education has not been completely settled<sup>8, 9, 11</sup>. In Japan, the contents included in food educational guidelines are mainly nutrition knowledge, balanced meals, and food culture, rather than food safety<sup>1, 21</sup>. Additionally, several studies have noted the limitations that constrain food-safety education, such as lack of time, resources, facilities, staff, and funds<sup>8, 9</sup>. These issues may contribute to the dissatisfaction of some Japanese mothers who want more food-safety education.

Mothers in the low-satisfaction group were more likely to find government actions related to food safety to be inadequate and to disagree with the notion that

food items can be 100 per cent safe compared to mothers in the high-satisfaction group. Previous studies have produced conflicting results with respect to perceptions about or trust in the government in relation to food-safety issues<sup>22, 23</sup>. For example, Rao et al. identified two types of Asian Indian mothers: those believing that the government was not effective in ensuring food safety and those believing that the government was effective in this regard<sup>22</sup>. Contrasting perceptions about food safety have also been reported<sup>13-15</sup>, and the results of this study suggested that satisfaction with food-safety education at school was related to perceptions of government and beliefs about the risks related to food.

In this study, the high- and low-satisfaction groups selected similar topics for inclusion in food-safety education. More than half of mothers wanted schools to teach about judging freshness, reading food labels, and food additives. However, topics included in current food-safety curricula focus primarily on the prevention of food-borne illnesses, such as the importance of hand-washing, personal hygiene, cleanliness, and refrigeration<sup>8, 9</sup>. A nationwide study of the topics included in food-safety education in Japanese primary schools found that those most frequently taught were the prevention of food-borne illnesses and food allergies<sup>24</sup>. Additionally, home economics teachers taught more topics than school dietitians and school nurses, and teachers cooperating with others also taught more topics<sup>24</sup>. Thus, in Japan, primary schools enhance home economics programs or encourage teachers to work cooperatively to teach numerous food-safety topics.

The ability to judge the freshness of foods and to check food labels enables the selection of appropriate foods and contributes to the prevention of food-borne illnesses. About 40 per cent of mothers supported education about best-before and

use-by dates and about the prevention of food-borne illnesses. Food additives and pesticide residues were selected as important topics by about 40 per cent and 30 per cent, respectively. These were also reported in previous studies aimed at the identification of consumers' perceptions about food-related safety and risks<sup>13, 15</sup>. Mothers in this study may have been conscious of broader topics in addition to the prevention of food-borne illnesses, the basic topic in current Japanese primary school food-safety education. Although the inclusion in school curricula of numerous topics related to food safety may be difficult, researchers and teachers in the domain of food-safety education should consider these results in decisions about what to teach in school.

This study had several limitations. First, the participants in this study were mothers, and neither fathers nor others with responsibility for the care of children were included. However, several previous studies focused on parents relied primarily on mothers as the respondents<sup>22, 25, 26</sup>. Because women are usually the parties most involved in the preparation of meals and the rearing of children in Japan, it seems appropriate to direct questions about food-safety education to women. Second, the sample was biased by the fact that all respondents were Internet users living in particular areas. Third, topics included in the questionnaire were limited. Other possible confounding factors such as educational levels of mothers and household income may be related to the degree of satisfaction of the mothers. These limits should be taken seriously, although several studies have indicated that online surveys produce the same responses or reliability as do paper-and-pencil questionnaires<sup>27, 28</sup>.

Despite these limitations, this study identified the satisfaction held and the priorities set by Japanese mothers in relation to food-safety education in primary



schools and may contribute to the food-safety education provided in schools.

## **Conclusion**

This study examined the satisfaction and characteristics of mothers who were not satisfied with the food-safety education provided in primary schools compared to mothers who were satisfied and identified the topics that should be included in food-safety education, according to the mothers. The results suggested that perceptions about government actions and beliefs about food-related risks differed according to level of satisfaction with food-safety education in school settings. More than half of mothers selected judging freshness, reading food labels, and food additives as topics important to the food-related education of children. This result implies that mothers want schools to focus not only on the prevention of food-borne illnesses but on other topics as well. This study may contribute to the food-safety education provided in schools.

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## **References**

1. Ministry of Education, Culture, Sports, Science and Technology in Japan.

The Manual of Food Educational Guideline.

[[http://www.mext.go.jp/a\\_menu/sports/syokuiku/1292952.htm](http://www.mext.go.jp/a_menu/sports/syokuiku/1292952.htm)] (Accessed July 2011) [Japanese]

2. Barclay M, Greathouse K, Swisher M, Tellefson S, Cales L, Koukol B. Food safety knowledge, practices, and educational needs of students in Grades 3 to 10. *Journal of Child Nutrition & Management*, 2003; 27: 1  
[<http://docs.schoolnutrition.org/newsroom/jcnm/03spring/barclay/>] (Accessed July 2011)
3. Haapala I, Probart C. Food safety knowledge, perceptions, and behaviors among middle school students. *Journal of Nutrition Education and Behavior*, 2004; 36: 71-76.
4. Gavaravarapu SR, Velma SR, Rao P, Mendu VV, Polasa K. Focus group studies on food safety knowledge, perceptions, and practices of school-going adolescent girls in south India. *Journal of Nutrition Education and Behavior*, 2009; 41: 340-346.
5. Griffith C, Redmond E. Evaluating hygiene behaviour in the domestic setting and the impact of hygiene education. *Journal of Infection*, 2001; 43: 70-74.
6. Coulson NS. Source of food safety information: whom do adolescents trust? *Appetite*, 2002; 38: 199-200.
7. De Boer M, McCarthy M, Brennan M, Kelly AL, Ritson C. Public understanding of food risk issues and food risk messages on the island of Ireland: the views of food safety experts. *Journal of Food Safety*, 2005; 25: 241-265.
8. Bielby G, Egan B, Eves A, Lumbers M. Food hygiene education in UK primary schools: a nation-wide survey of teachers' views. *British Food Journal*, 2006; 108: 721-731.
9. Egan B, Bielby G, Eves A, Lumbers M, Raats M, Adams M. Food hygiene education in UK secondary schools: a nationwide survey of teachers' views. *Health Education Journal*, 2008; 67: 110-120.

10. Eves A, Bielby G, Egan Bernadette, Lumbers M, Raats M, Adams M. Food safety knowledge and behaviours of children (5-7 years). *Health Education Journal*, 2010; 69: 21-30.
11. Richards J, Skolits G, Burney J, Pedigo A, Draughon A. Validation of an interdisciplinary food safety curriculum targeted at middle school students and correlated to state educational standards. *Journal of Food Science Education*, 2008; 7: 54-61.
12. Horikawa H, Akamatsu R, Iyoku Y, Horiguchi I, Marui E. Qualitative study of elementary school staffs' views on the current topic and future tasks of food-safety education. *Japanese Journal of Nutrition and Dietetics*, 2011; 69: 67-74. [Japanese]
13. Dosman DM, Adamowicz WL, Hrudehy SE. Socioeconomic determinants of health- and food safety-related risk perceptions. *Risk Analysis*, 2001; 21: 307-317.
14. Kornelis M, De Jonge J, Frewer L, Dagevos H. Consumer selection of food-safety information sources. *Risk Analysis*, 2007; 27: 327-335.
15. Tucker M, Whaley SR, Sharp JS. Consumer perceptions of food-related risks. *International Journal of Food Science and Technology*, 2006; 41: 135-146.
16. Nakagaki T, Horiguchi I, Hyou K, Akamatsu R, Tanaka H, Marui E. Qualitative study on food sanitation inspectors' views of food-safety knowledge needed by consumers. *Journal of Health and Welfare Statistics*, 2009; 56: 48-53. [Japanese]
17. Takeda S, Akamatsu R, Tanaka H, horiguchi I, Marui E. Qualitative study on dietitians' views of food-safety knowledge needed by consumers. *Japanese Journal of Nutrition and Dietetics*, 2010; 68: 31-35. [Japanese]

18. Food Safety Commission of Japan. The report of the survey conducted in July 2010 on the consumers' conscious of food safety.  
[<http://www.fsc.go.jp/monitor/2107moni-kadaihoukoku-kekka.pdf>] (Accessed July 2011) [Japanese]
19. Ministry of Education, Culture, Sports, Science and Technology in Japan.  
The curriculum guideline of primary school; home economics.  
[[http://www.mext.go.jp/component/a\\_menu/education/micro\\_detail/\\_\\_icsFiles/afielldfile/2009/06/16/1234931\\_009.pdf](http://www.mext.go.jp/component/a_menu/education/micro_detail/__icsFiles/afielldfile/2009/06/16/1234931_009.pdf)] (Accessed July 2011) [Japanese]
20. Ministry of Education, Culture, Sports, Science and Technology in Japan. The curriculum guideline of primary school; health and physical education.  
[[http://www.mext.go.jp/component/a\\_menu/education/micro\\_detail/\\_\\_icsFiles/afielldfile/2011/01/19/1234931\\_010.pdf](http://www.mext.go.jp/component/a_menu/education/micro_detail/__icsFiles/afielldfile/2011/01/19/1234931_010.pdf)] (Accessed July 2011) [Japanese]
21. Ministry of Education, Culture, Sports, Science and Technology in Japan. Food educational material for pupils and students.  
[[http://www.mext.go.jp/a\\_menu/shotou/eiyou/syokuseikatsu.htm](http://www.mext.go.jp/a_menu/shotou/eiyou/syokuseikatsu.htm)] (Accessed January 2012) [Japanese]
22. Rao S, Sudershan RV, Rao P, Rao VV, Polasa K. Food safety knowledge, attitudes and practices of mothers - Findings from focus group studies in South India. *Appetite*, 2007; 49: 441-449.
23. Henderson J, Coveney J, Ward P. Who regulates food? Australians' perceptions of responsibility for food safety. *Australian Journal of Primary Health*, 2010; 16: 344-351.
24. Horikawa H, Akamatsu R, Sugiura J, Horiguchi I, Marui E. Characteristics of elementary school staff members involved in food-safety education: a study