

ANXIETY OVER RADIATION EXPOSURE AND
PSYCHOLOGICAL STRESS IN FUKUSHIMA
RESIDENTS #1:

SURVEY OF ELEMENTARY SCHOOL
STUDENTS AND KINDERGARTEN CHILDREN

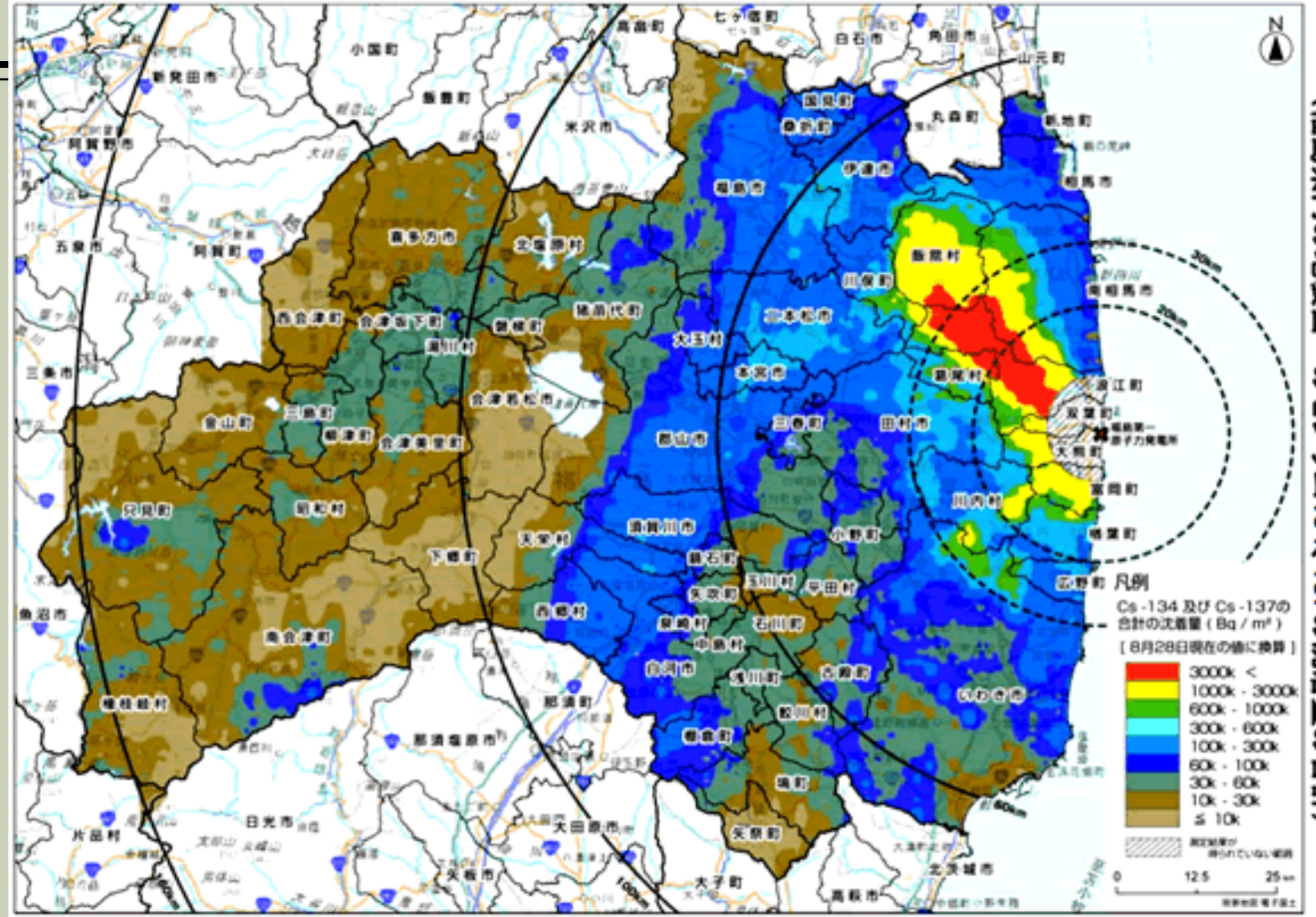
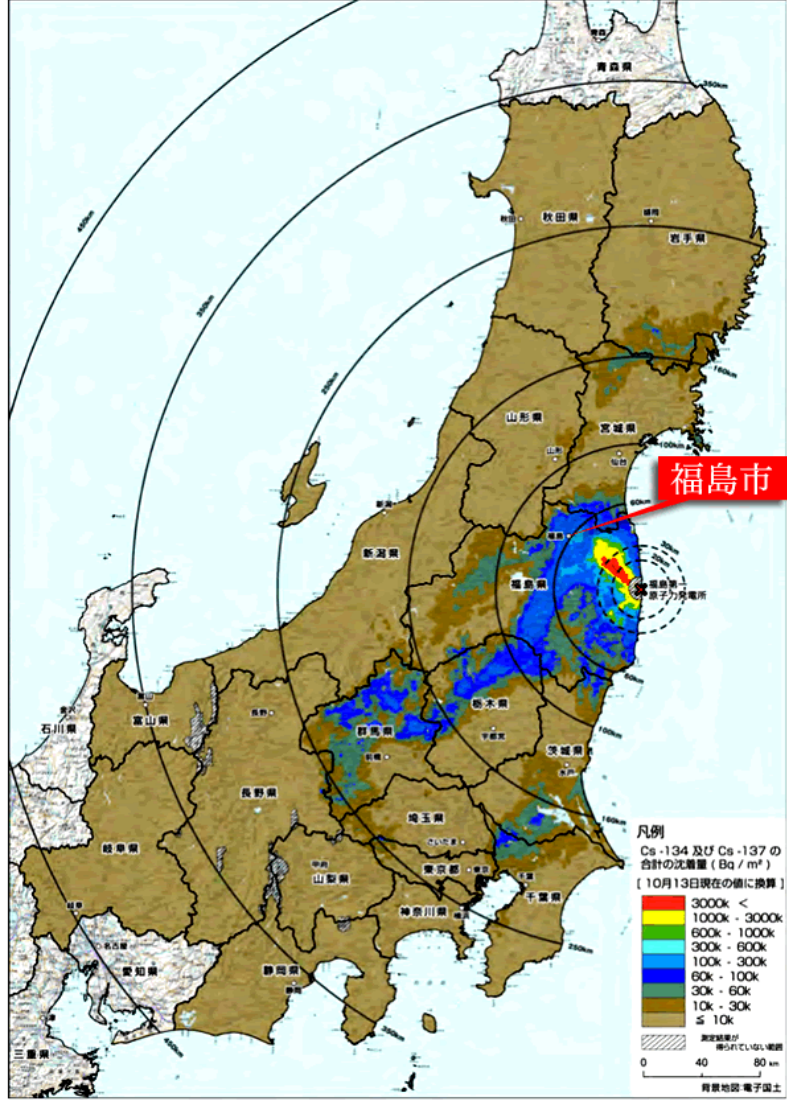
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Faculty of Human Development and Culture
Fukushima University



Purpose

- To understand the emotional state of children (and their parents/guardians) living in Fukushima following the Great East Japan Earthquake. The focus will be on psychological stress.
- To clarify how the psychological stress of the Fukushima children and their parents/guardians is changing with the passage of time.
- To estimate the level of stress linked to the natural disaster and the Fukushima Daiichi nuclear disaster, by making comparisons with children from other prefectures.



文科科学省による福島県西部の航空機モニタリングの測定結果について
(福島県内の地表面へのセシウム134、137の沈着量の合計)

Time and Locations

Subjects:

Kindergarten and elementary school children and their parents

Location:

Fukushima City
Koriyama City
(both Fukushima Pref.)

Location:

Fukushima City
(Fukushima Pref.)

Location:

Fukushima City
(Fukushima Pref.)
+
Akita Pref., Fukui Pref., Hyougo Pref.



Locations of 3rd Survey

Location:

Fukushima City
(Fukushima Pref.)

+

Akita Pref. 220.8km

Fukui Pref. 422.0km

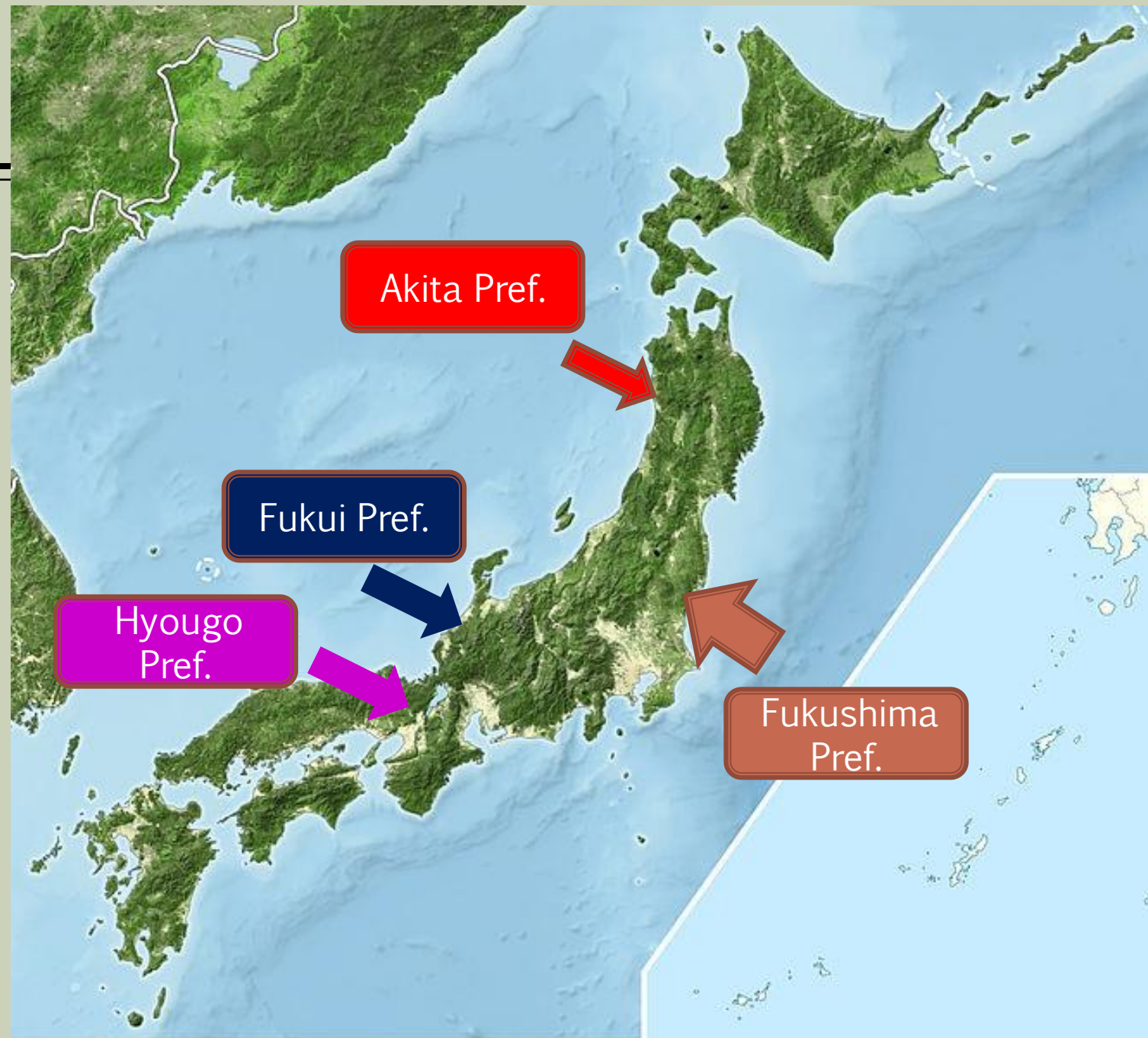
Hyougo Pref. 583.8km



3rd Survey 3

Jan.

2013





Question items

- ◆ Parents' anxiety about radiation (9 items)
 - Original questionnaire
 - Three-point scale: "Always...as I used to," "sometimes," "Have stopped doing it."
- ◆ Parents' stress (8 items)
 - Created based on the stress scale developed by Takata et al. (1999)
 - Four-point scale: from "Often" to "Never"
- ◆ Children's stress (19 items)
 - Created by referring to the Parent Report of the Child's Reaction Stress, by Fletcher (1996)
 - Four-point scale: from "Often" to "Never"

Parents' anxiety about radiation (9 items)

Q1. Do you dry your wash outside?

Q2. Do you use a ventilating fan?

Q3. Do you open a window to ventilate your room?

Q4. Do you let your child drink tap water?

Q5. Do you make your child wear a mask when he/she goes out?

Q6. Do you let your child play outside?

Q7. Do you check environmental dose rates?

Q8. Have you studied about radiation effects?

Q9. Do you buy vegetables from Fukushima?

Parents' stress (8 items)

Q1. Do you get irritated or get angry quickly?

Q2. Do you jump at sounds?

Q3. Do you feel down?

Q4. Do you have difficulty concentrating on your daily work?

Q5. Do you suddenly remember about the earthquake?

Q6. Do you have little appetite or are you unable to control your appetite?

Q7. Do you get tired easily or feel weak?

Q8. Do you have difficulty falling asleep or wake up during the night?

Children's stress (19 items)

Depression (9 items)

Insecurity (4 items)

Regression (4 items)

Irritation (2 items)

Children's stress (19 items)

Depression (9 items)

Continues to have poor appetite

Gets confused after remembering something

Gets tongue-tied and dislikes talking

Has little interest in new activities that other children are willing to join in

Shows regression after the earthquake disaster

Plays something related to a specific event (such as the disaster)

Suppresses his/her feelings

Blames himself/herself for a specific event (such as the disaster)

Complains of a stomachache, headache, nausea or weariness

when something reminds him/her of an event (such as the disaster)

Children's stress (19 items)

Depression (9 items)

Continues to have poor appetite

Plays something related to a specific event (such as the disaster)

Gets confused after remembering something

Gets tongue-tied and dislikes talking

Has little interest in new activities that other children are willing to join in

Shows regression after the earthquake disaster

Suppresses his/her feelings

Blames himself/herself for a specific event (such as the disaster)

Complains of a stomachache, headache, nausea or weariness

when something reminds him/her of an event (such as the disaster)

Children's stress (19 items)

Insecurity (4 items)

Gets terrified when something happens

Afraid that a specific event (such as a disaster) will occur again

Jumps at sudden sounds

Talks repeatedly about a specific event (such as the disaster)

Regression (4 items)

Follows an adult around (never strays far from his/her guardian)

Looks lonely and all alone

Dislikes being alone

(dislikes going to kindergarten or school, or follows you to the toilet or bath)

Has difficulty remembering about nasty events related to the disaster

Children's stress (19 items)

Irritation (2 items)

Gets irritated and angry, or loses his/her temper

Does not concentrate on study and play

Parents' anxiety about radiation

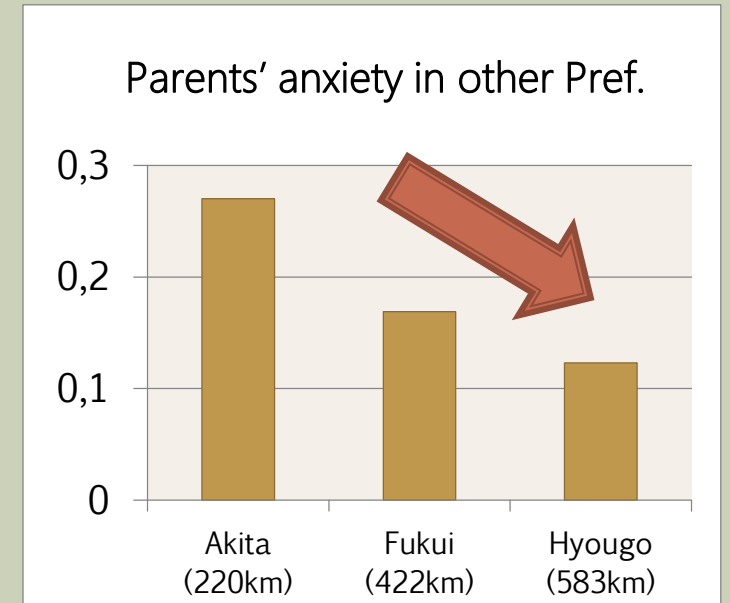
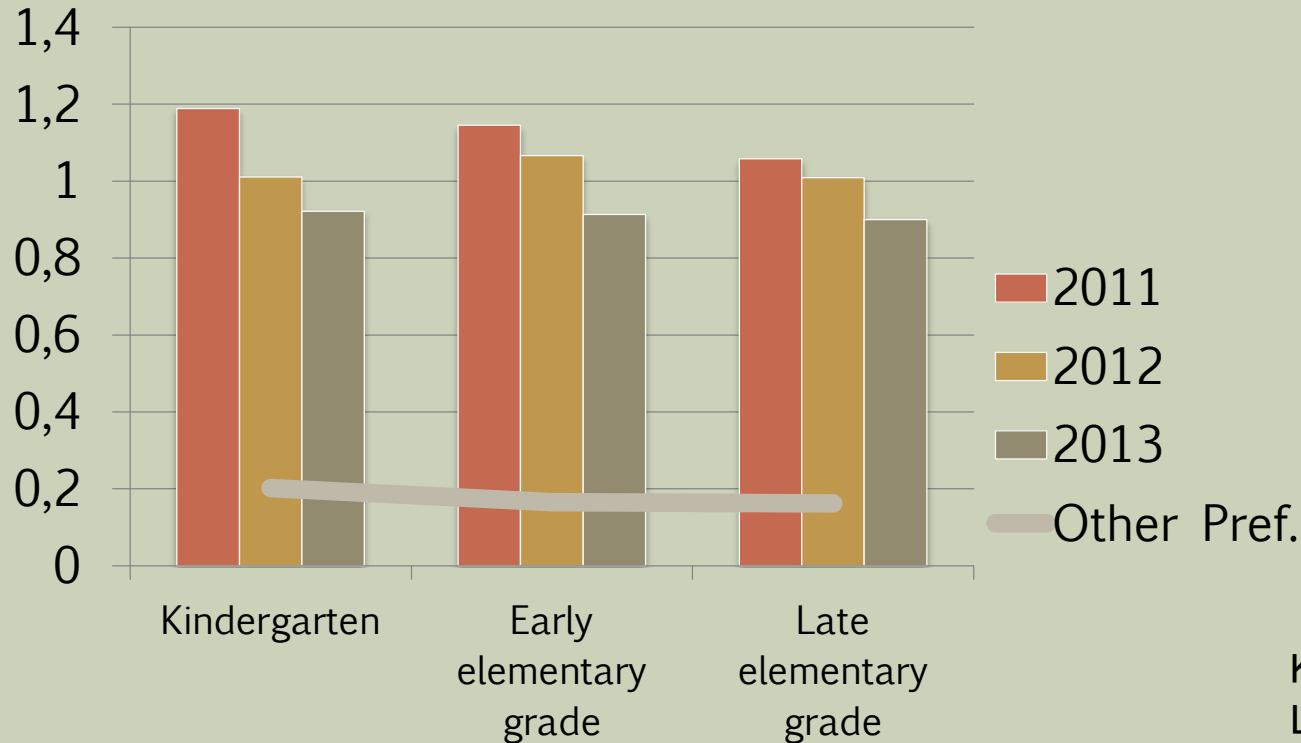
e.g. Do you let your child play outside?

Calculation of anxiety score

- Always 0 points
- Sometimes 1 points
- Never 2 points

Average of all items

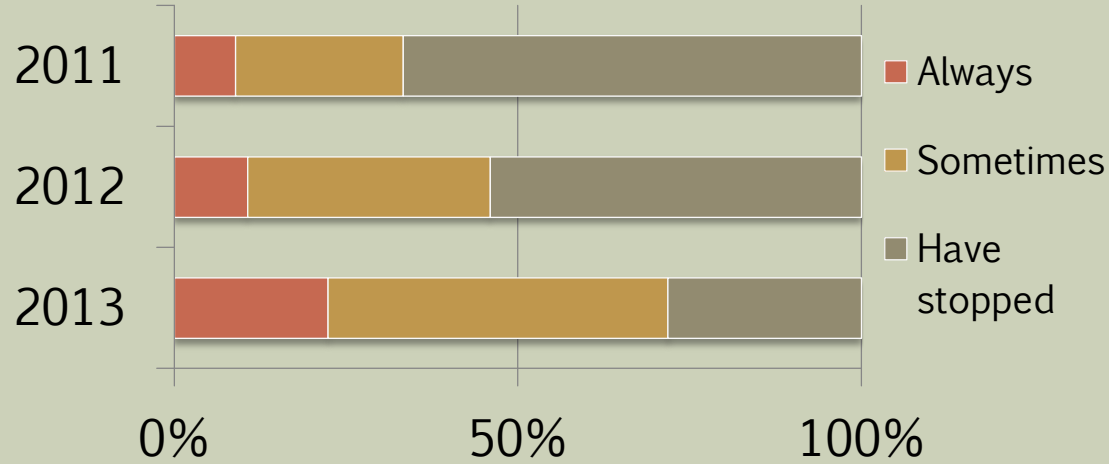
Max2.0



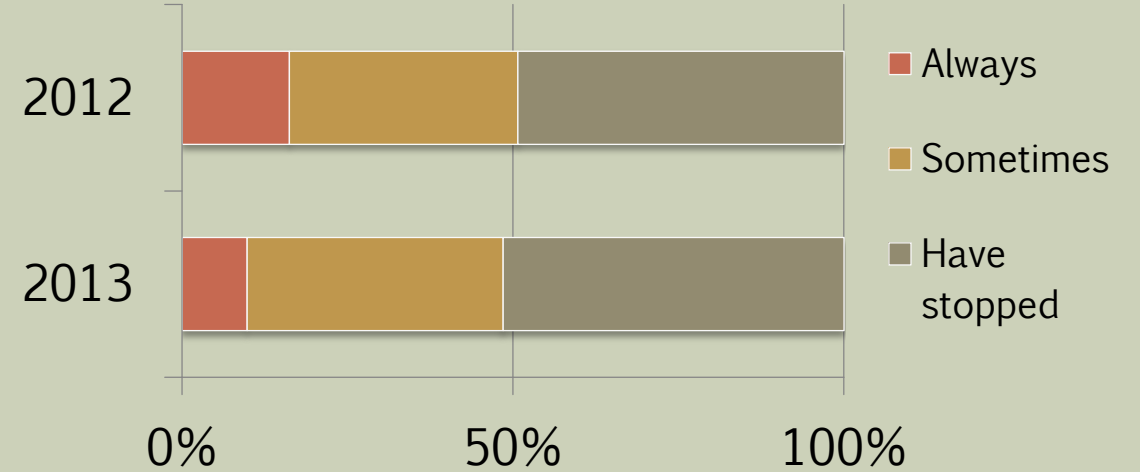
Kindergarten, Early elementary grade 2011 > 2012 > 2013
 Late elementary grade 2011, 2012 > 2013

Parents' anxiety about radiation

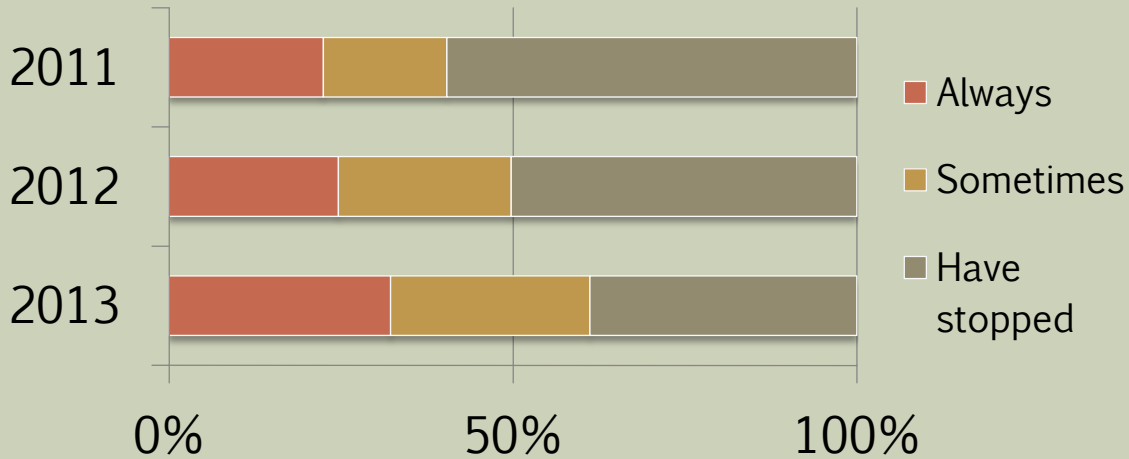
Do you let your child play outside?



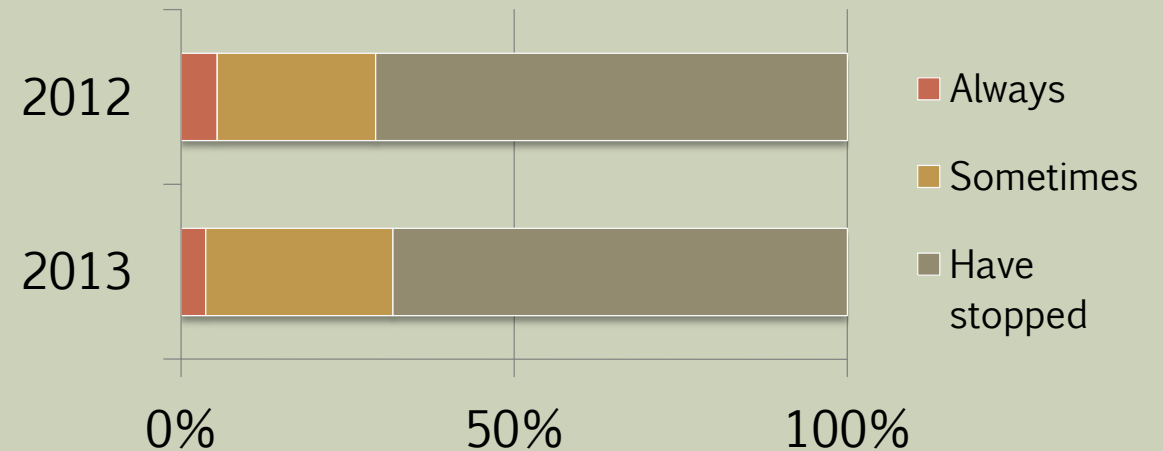
Do you let your child drink tap water?



Do you dry your wash outside?

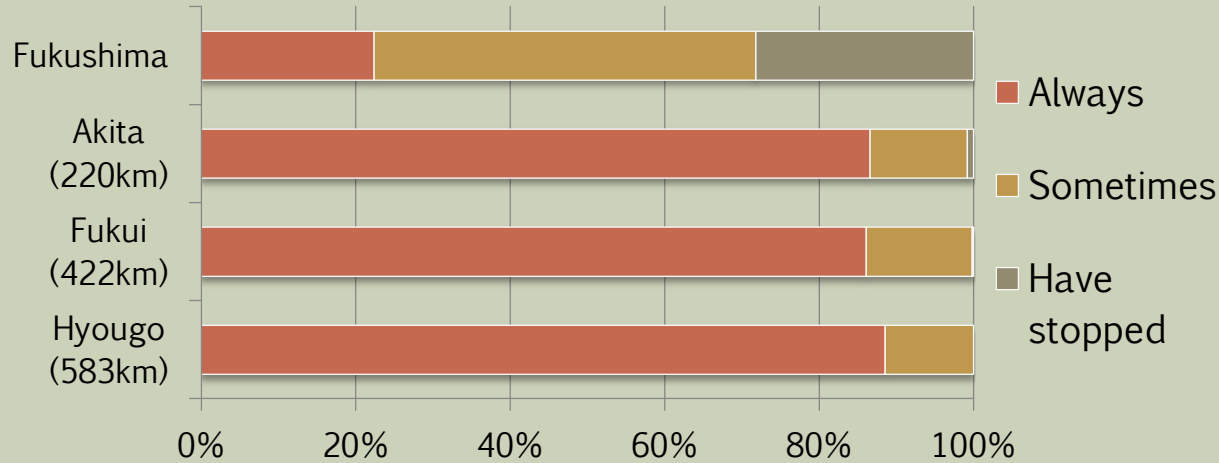


Do you buy vegetables from Fukushima?

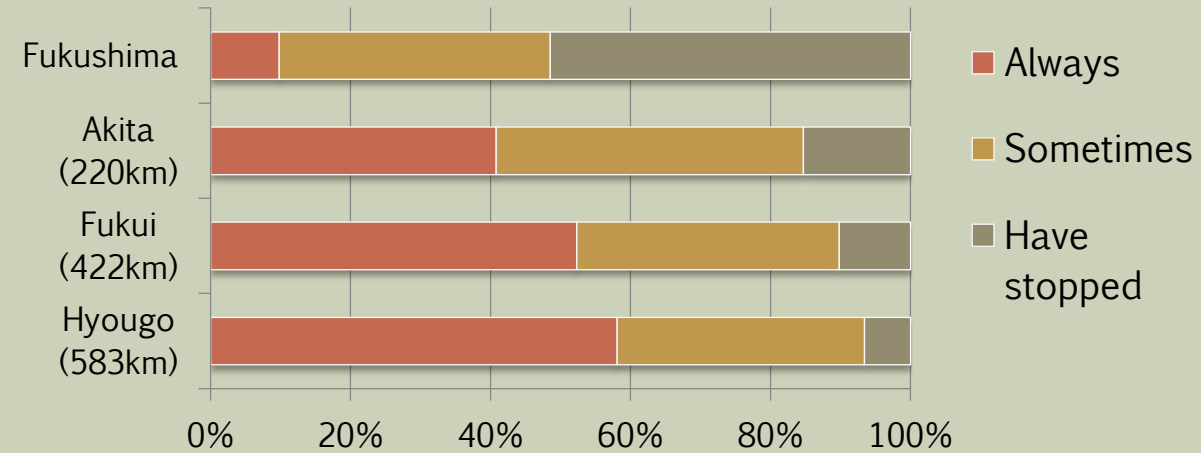


Parents' anxiety about radiation

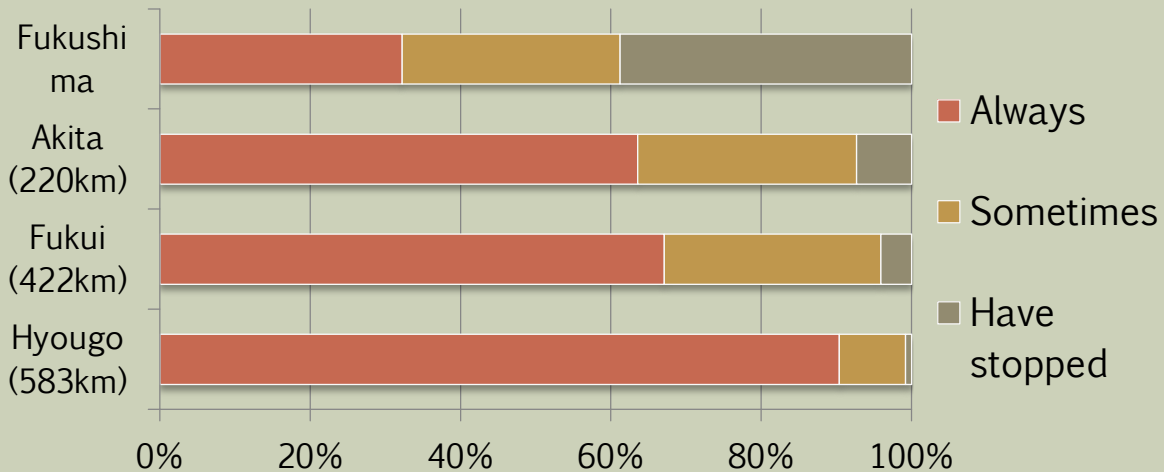
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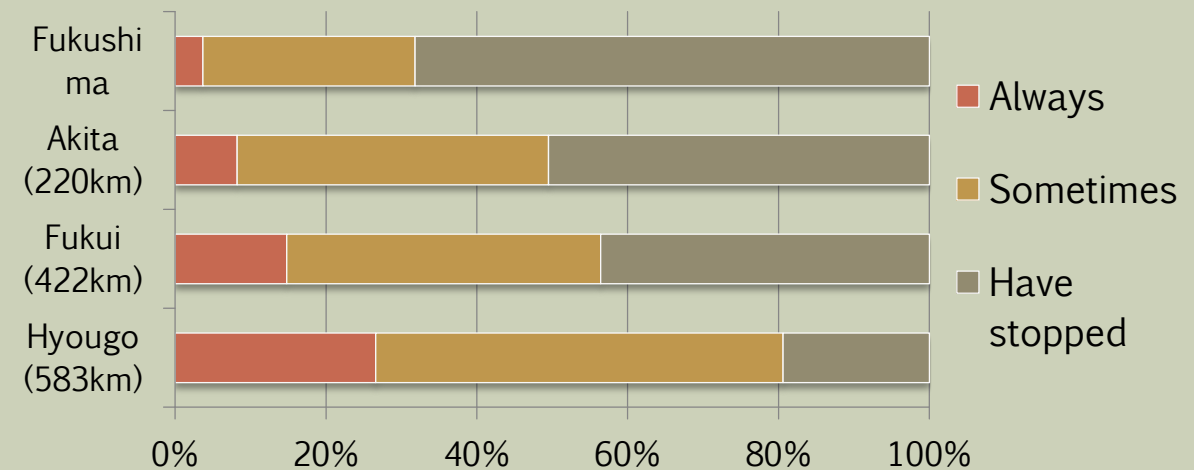
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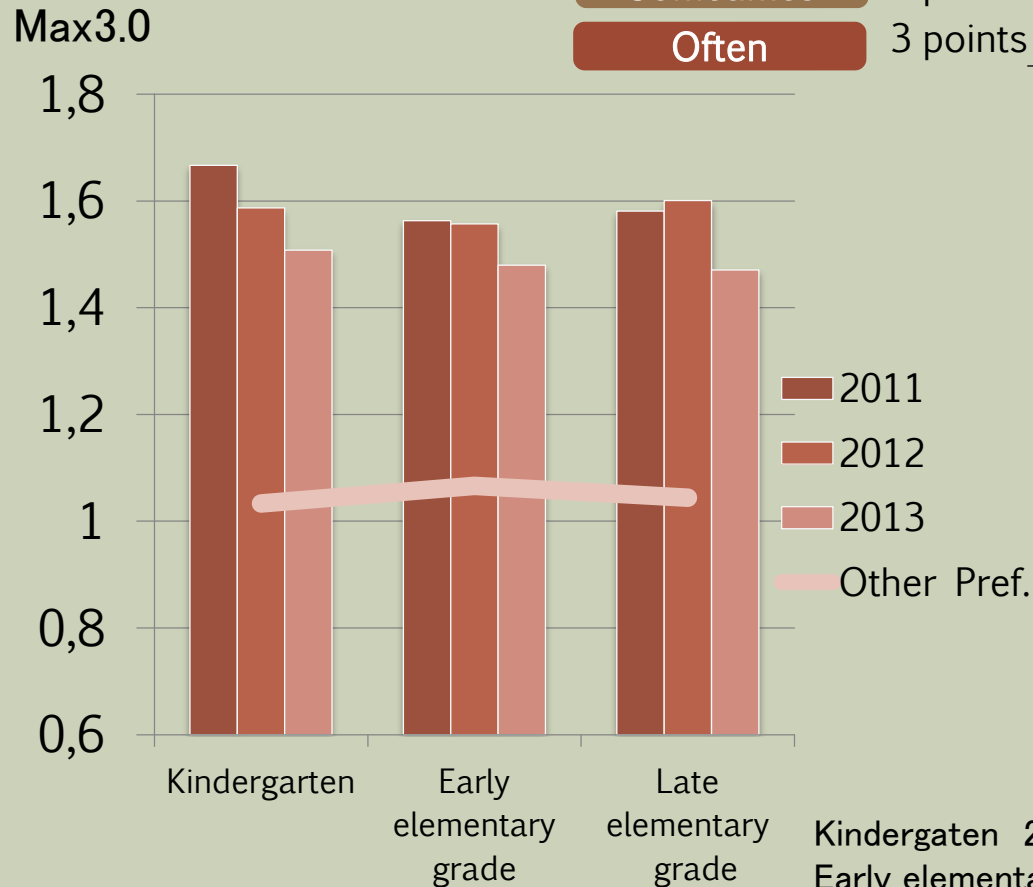
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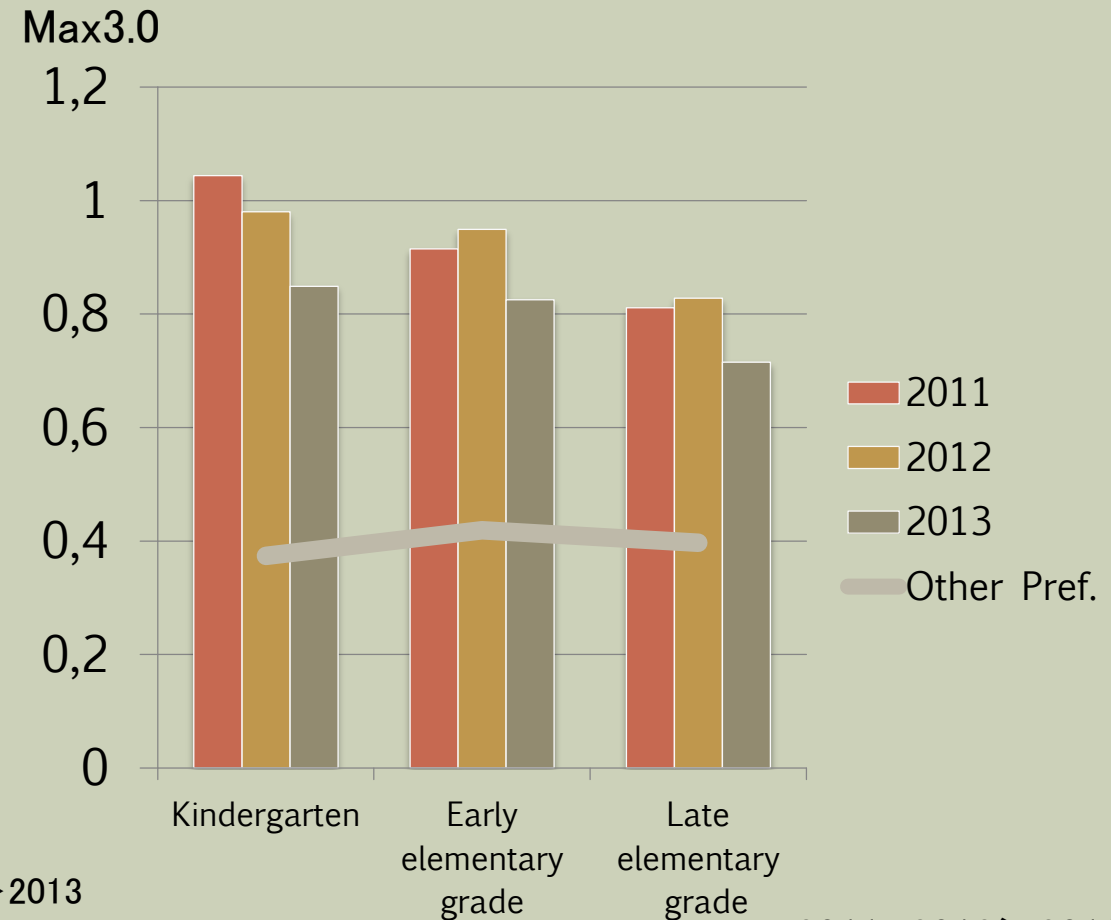
Parents' stress

Children's stress

e.g. Do you jump at sounds?



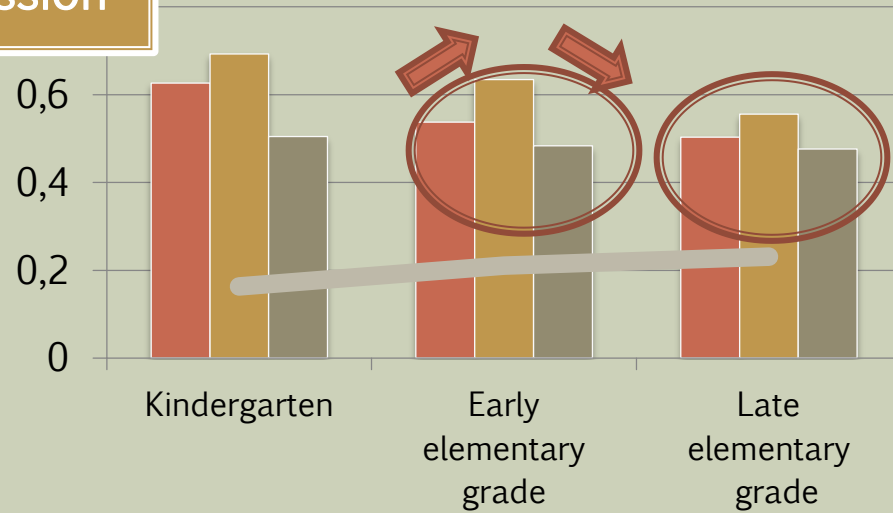
Kindergarten 2011 > 2013
 Early elementary grade 2012 > 2013
 Late elementary grade 2011, 2012 > 2013



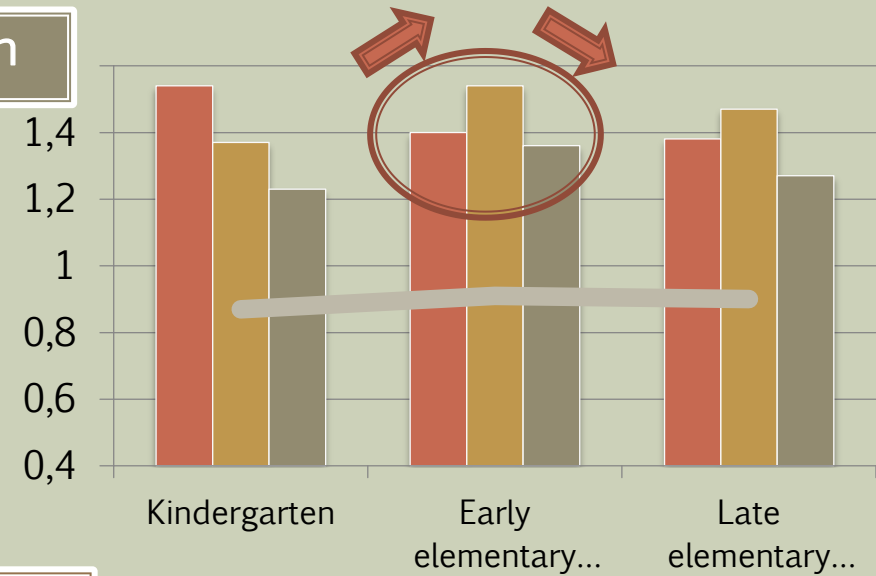
2011, 2012 > 2013

Children's stress

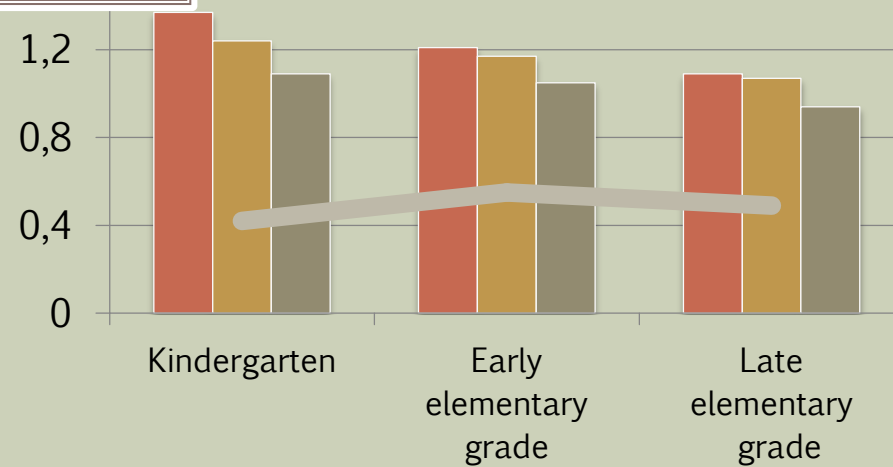
Depression



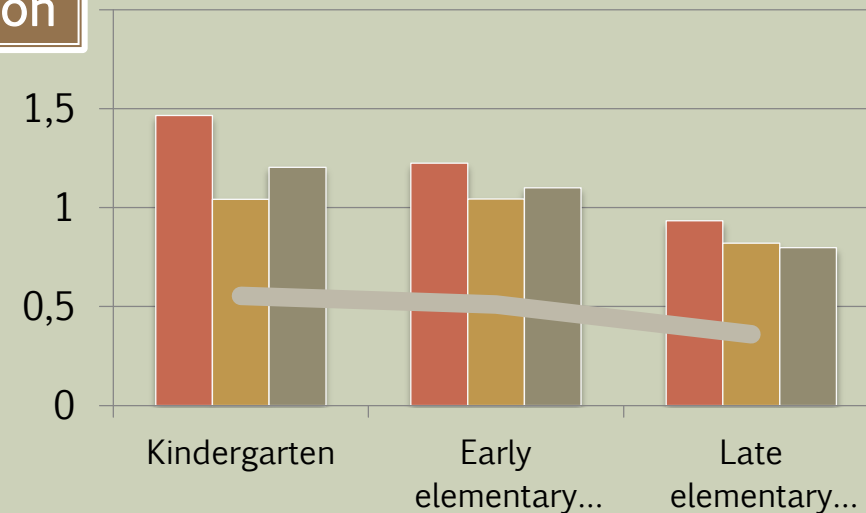
Irritation



Insecurity



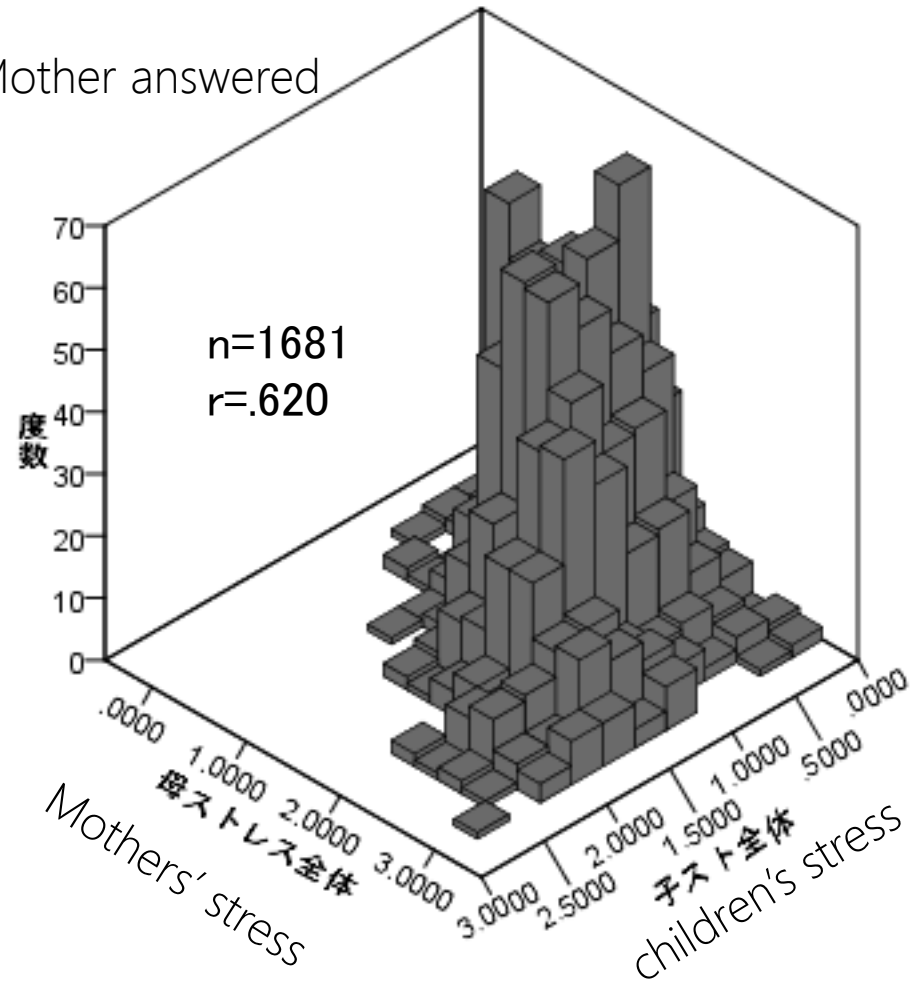
Regression



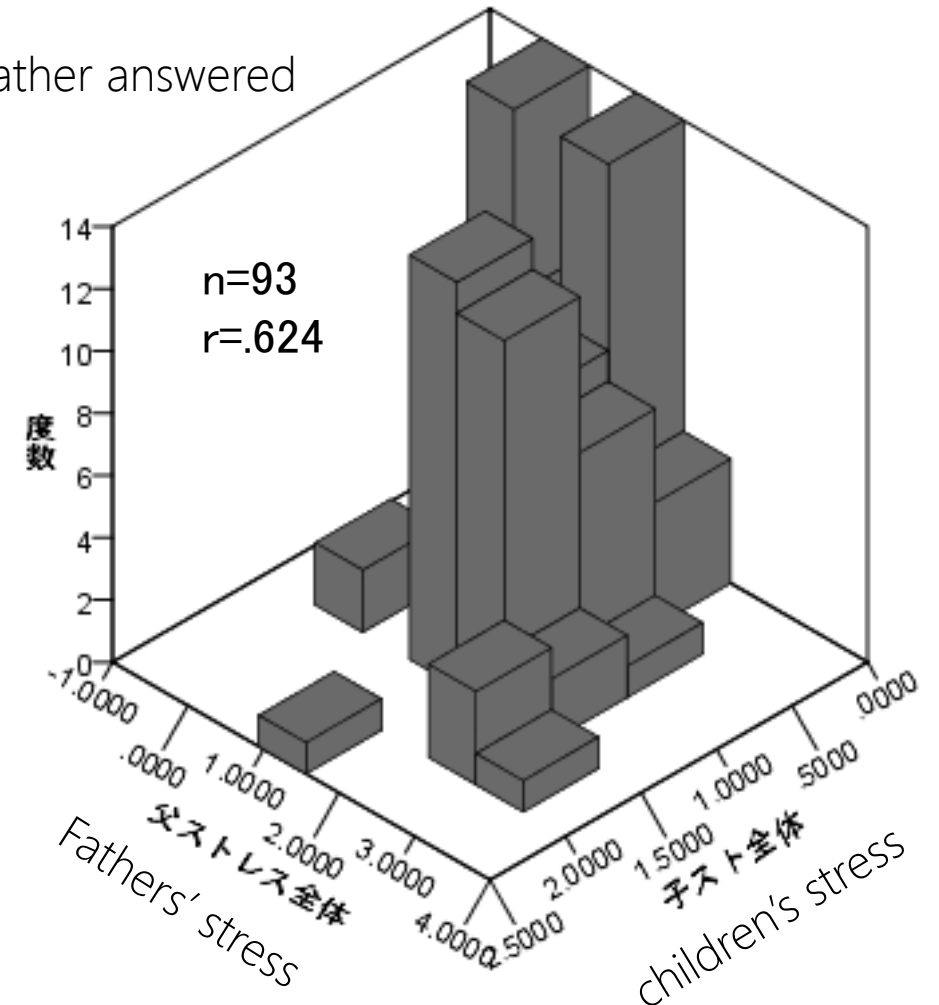
- 2011
- 2012
- 2013
- Other Pref.

Correlation between Parents' stress and Children's stress

Mother answered



Father answered



Conclusion

- Having continuously studied the stress levels of Fukushima's primary school children, pre-school children, and their parents/guardians, it can be concluded that their anxiety about radiation is decreasing.
- Figures from 2011, 2012 and 2013 show that stress levels are also decreasing.
- However, compared to other prefectures, stress levels have been persistently high. It can be said that they are being exposed to ongoing stress.



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