Japan Youth Risk Behavior Survey (JYRBS 2011)

Youth risk behaviors tend to start at the youth period and seriously affect the current and future health and life of oneself and others (NOZU Yuji et al., 2006).

This is the second national youth risk behavior survey, carried out 10 years after JYRBS 2001.
JYRBS 2011 was conducted among approximately 10,000 students in grades 10-12 from high schools randomly sampled nationwide.
The results of JYRBS 2011 are compared with those of the 2011 national YRBS conducted by CDC in the USA.

I. Background (Issues on youth health in Japan / Significance of comprehensively understanding youth risk behaviors / Definition of youth risk behaviors)

II. Purposes

III. Methods (Sampling / Data collection / Survey items / Analytical methods)

IV. Overall view of prevalences of risk behaviors  Change over 10 years  Comparison between Japan and the USA

V. Prevalence of each risk behavior

1. Physical activity (Vigorous physical activity, Muscle strengthening exercises, Muscle stretching exercises, At least 60 minutes of moderate physical activity per day)  Change over 10 years  Comparison between Japan and the USA

2. Dietary behaviors (Had breakfast, Ate vegetables and fruits, Did not eat for ≥24 hours, Vomited or took laxatives, Took diet pills, powders, or liquids)  Change over 10 years  Comparison between Japan and the USA

3. Cigarette smoking (Ever smoked cigarettes, Current cigarette use, Current frequent cigarette use, Smoked >10 cigarettes/day)  Change over 10 years  Comparison between Japan and the USA

4. Alcohol drinking (Ever drank alcohol, Current alcohol use, Current frequent alcohol use, Acute drinking in a gulp)  Change over 10 years  Comparison between Japan and the USA

5. Drug abuse (Ever used thinner, Ever used methamphetamine, Ever used marijuana, Ever used MDMA)  Change over 10 years  Comparison between Japan and the USA

6. Sexual behaviors (Ever had sexual intercourse, Condom use)  Change over 10 years  Comparison between Japan and the USA

7. Traffic-related behaviors (Rarely or never wore a bicycle helmet, Rode a bicycle after drinking alcohol, Rarely or never wore a motorcycle helmet, Rarely or never wore a seatbelt, Rode with a driver who had been drinking alcohol)  Change over 10 years  Comparison between Japan and the USA

8. Violence and carrying a weapon (Carried a weapon, Carried a weapon on school property, Carried a weapon on school property, In a physical fight, In a physical fight on school property)  Change over 10 years  Comparison between Japan and the USA

9. Self-harm behaviors (Felt sad or hopeless, Seriously considered attempting suicide)  Change over 10 years  Comparison between Japan and the USA

VI. Correlation between prevalences of risk behaviors and resilience

(Supported by JSPS KAKENHI Grant Number 22500622.)
Issues on Youth Health in Japan

- The most frequent cause of death for adolescents aged 15-19 years is suicide, followed by unexpected accidents including traffic accidents.

- The three major causes of death for Japanese are malignant neoplasm, cardiac disease, and cerebrovascular disease, which are caused by lifestyle-related behaviors, such as cigarette smoking, alcohol drinking, unhealthy dietary behaviors, and inadequate physical activity from adolescence.

- Recently, violent crimes, drug abuse, promiscuous sexual behaviors, and unhealthy dietary behaviors have become social problems among youth.
Significance of Comprehensively Understanding Youth Risk Behaviors

The correlation between different risk behaviors, and common factors and background that contribute to them can be clarified.

- A continuous and comprehensive program to prevent risk behaviors can be developed on the basis of a consistent philosophy.
- Highly efficient and effective measures can be established.
Youth risk behaviors tend to start at the youth period and seriously affect the current and future health and life of oneself and others.

1. Physical activity
2. Dietary behaviors
3. Cigarette smoking
4. Alcohol drinking
5. Drug abuse
6. Sexual behaviors
7. Traffic-related behaviors
8. Violence and carrying a weapon
9. Self-harm behaviors

(Definition of Youth Risk Behaviors by NOZU Yuji et al., NOZU Yuji, 2006)
Youth Risk Behavior Surveillance (YRBS) conducted by Centers for Disease Control and Prevention (CDC) in the USA

Priority health-risk behaviors:
which contribute to the leading causes of morbidity and mortality among youth and adults

1. Behaviors that contribute to unintentional injuries and violence
2. Tobacco use
3. Alcohol and other drug use
4. Sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases (STDs), including human immunodeficiency virus (HIV) infections
5. Unhealthy dietary behaviors
6. Physical inactivity
Purposes of JYRBS 2011

1. To observe changes in youth risk behaviors among Japanese high school students over ten years by comparing the results of JYRBS 2011 with those of JYRBS 2001.

2. To clarify the current characteristics of youth risk behaviors among Japanese high school students by comparison with the results of the 2011 YRBS conducted by CDC in the USA.

3. To clarify the correlation between the prevalences of youth risk behaviors and resilience of Japanese high school students.
Sampling

- Database “2011 version of National School Data (High School)”
- Randomly sampled from among high schools throughout Japan excluding correspondence schools.
- The number of schools surveyed was set to two for Tottori Prefecture, which has the smallest population of high school students, and that for the other prefectures was determined following the ratio of the number of high school students in each prefecture to that in Tottori Prefecture.
- Required number of schools surveyed: 223 high schools
- In principle, all students of one class in 10-12 grades of each school were targeted.

- School sample size: 102
  (Sufficiency rate to required number of schools surveyed: 45.7%)
- Student sample size: 9,778 (male, 5,027; female, 4,751)
- Valid response rate: 99.9%

Tsukuba Health Education (THE) Study

(lecture title and author information)

Back to top (index)
Data collection

- Survey period: October - December 2011
- Anonymous self-administered questionnaire
- Computer-scannable answer sheet
Main survey items

- 34 items regarding risk behaviors (9 categories)
  - 26 out of the 34 items can be compared with the items in the 2011 YRBS conducted by CDC in the USA.
- Resilience
  - Adolescent resilience scale: 21 items (Oshio et al., 2002)
  - Three subdomains:
    - Novelty Seeking, Emotional Regulation, Positive Future Orientation

(NOZU Yuji, 2012)
Criteria for evaluating risk behaviors

<table>
<thead>
<tr>
<th>Item</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Physical activity</td>
<td></td>
</tr>
<tr>
<td>1. Vigorous physical activity</td>
<td>Participated on ≥3 of the 7 days before the survey</td>
</tr>
<tr>
<td>2. Muscle strengthening exercises</td>
<td>Participated on ≥3 of the 7 days before the survey</td>
</tr>
<tr>
<td>3. Muscle stretching exercises</td>
<td>Participated on ≥3 of the 7 days before the survey</td>
</tr>
<tr>
<td>4. At least 60 minutes of moderate physical activity per day</td>
<td>Participated on ≥3 of the 7 days before the survey</td>
</tr>
<tr>
<td>2. Dietary behaviors</td>
<td></td>
</tr>
<tr>
<td>5. Had breakfast</td>
<td>On all 7 days before the survey</td>
</tr>
<tr>
<td>6. Ate vegetables and fruits</td>
<td>≥5 servings on the day before the survey</td>
</tr>
<tr>
<td>7. Did not eat for ≥24 hours</td>
<td>During the 30 days before the survey</td>
</tr>
<tr>
<td>8. Vomited or took laxatives</td>
<td>During the 30 days before the survey</td>
</tr>
<tr>
<td>9. Took diet pills, powders, or liquids</td>
<td>During the 30 days before the survey</td>
</tr>
<tr>
<td>3. Cigarette smoking</td>
<td></td>
</tr>
<tr>
<td>10. Ever smoked cigarettes</td>
<td>One or more times during the life</td>
</tr>
<tr>
<td>11. Current cigarette use</td>
<td>Smoked cigarettes on ≥1 of the 30 days before the survey</td>
</tr>
<tr>
<td>12. Current frequent cigarette use</td>
<td>Smoked cigarettes on ≥20 of the 30 days before the survey</td>
</tr>
<tr>
<td>13. Smoked &gt;10 cigarettes/day</td>
<td>Smoked &gt;10 cigarettes/day during the 30 days before the survey</td>
</tr>
<tr>
<td>4. Alcohol drinking</td>
<td></td>
</tr>
<tr>
<td>14. Ever drank alcohol</td>
<td>One or more times during the life</td>
</tr>
<tr>
<td>15. Current alcohol use</td>
<td>Drank alcohol on ≥1 of the 30 days before the survey</td>
</tr>
<tr>
<td>16. Current frequent alcohol use</td>
<td>Drank alcohol on ≥10 of the 30 days before the survey</td>
</tr>
<tr>
<td>17. Acute drinking in a gulp</td>
<td>One or more times during the life</td>
</tr>
<tr>
<td>5. Drug abuse</td>
<td></td>
</tr>
<tr>
<td>18. Ever used thinner</td>
<td>One or more times during the life</td>
</tr>
<tr>
<td>19. Ever used methamphetamine</td>
<td>One or more times during the life</td>
</tr>
<tr>
<td>20. Ever used marijuana</td>
<td>One or more times during the life</td>
</tr>
<tr>
<td>21. Ever used MDMA</td>
<td>One or more times during the life</td>
</tr>
<tr>
<td>6. Sexual behaviors</td>
<td></td>
</tr>
<tr>
<td>22. Ever had sexual intercourse</td>
<td>One or more times during the life</td>
</tr>
<tr>
<td>23. Condom use*</td>
<td>During last sexual intercourse</td>
</tr>
<tr>
<td>7. Traffic-related behaviors</td>
<td></td>
</tr>
<tr>
<td>24. Rarely or never wore a bicycle helmet§</td>
<td>During the 12 months before the survey</td>
</tr>
<tr>
<td>25. Rode a bicycle after drinking alcohol</td>
<td>During the 30 days before the survey</td>
</tr>
<tr>
<td>26. Rarely or never wore a motorcycle helmet¶</td>
<td>During the 12 months before the survey</td>
</tr>
<tr>
<td>27. Rarely or never wore a seatbelt</td>
<td>When riding in a car driven by someone else</td>
</tr>
<tr>
<td>28. Rode with a driver who had been drinking alcohol</td>
<td>During the 30 days before the survey</td>
</tr>
<tr>
<td>8. Violence and carrying a weapon</td>
<td></td>
</tr>
<tr>
<td>29. Carried a weapon</td>
<td>During the 30 days before the survey</td>
</tr>
<tr>
<td>30. Carried a weapon on school property</td>
<td>During the 30 days before the survey</td>
</tr>
<tr>
<td>31. In a physical fight</td>
<td>During the 12 months before the survey</td>
</tr>
<tr>
<td>32. In a physical fight on school property</td>
<td>During the 12 months before the survey</td>
</tr>
<tr>
<td>9. Self-harm behaviors</td>
<td></td>
</tr>
<tr>
<td>33. Felt sad or hopeless</td>
<td>During the 12 months before the survey</td>
</tr>
<tr>
<td>34. Seriously considered attempting suicide</td>
<td>During the 12 months before the survey</td>
</tr>
</tbody>
</table>

Items showing preferable behaviors

- Items comparable with 2011 YRBS by CDC in the USA (26 items)
- New items in JYRBS 2011 (2 items)

*Among students who had ever had sexual intercourse.

§Among students who had ridden a bicycle during the 12 months before the survey.

¶Among students who had ridden a motorcycle during the 12 months before the survey.
Analytical methods

1. Change in prevalences of risk behaviors over ten years
   - Summarize data by gender and grade, and calculate 95% confidence intervals (CIs) to examine significant differences.

2. Comparison between prevalences of risk behaviors in Japan and those in the USA
   - Summarize data by gender and grade, and calculate 95% CIs to examine significant differences.

3. Correlation between prevalences of risk behaviors and resilience
   - Calculate the score on resilience scale for cases with or without risk behaviors, each from 9 categories, and examine their correlations using t-tests.

- The statistical significance level is 5% for all correlations.
Significance test using 95% CI

Principle
If 95% CIs overlap, differences between prevalence estimates are not considered statistically significant.
If 95% CIs do not overlap, differences between prevalence estimates are considered statistically significant.

Reference
## Change in prevalences of risk behaviors over ten years (male)

### 1. Physical activity
- **Vigorous physical activity**
- **Muscle strengthening exercises**
- **Muscle stretching exercises**

### 2. Dietary behaviors
- **Had breakfast**
- **Ate vegetables and fruits**
- **Did not eat for ≥24 hours**
- **Vomited or took laxatives**
- **Took diet pills, powders, or liquids**

### 3. Cigarette smoking
- **Ever smoked cigarettes**
- **Current cigarette use**
- **Current frequent cigarette use**
- **Smoked >10 cigarettes/day**

### 4. Alcohol drinking
- **Ever drank alcohol**
- **Current alcohol use**
- **Current frequent alcohol use**
- **Acute drinking in a gulp**

### 5. Drug abuse
- **Ever used thinner**
- **Ever used methamphetamine**
- **Ever used marijuana**

### 6. Sexual behaviors
- **Ever had sexual intercourse**
- **Condom use**

### 7. Traffic-related behaviors
- **Rarely or never wore a bicycle helmet**
- **Rode a bicycle after drinking alcohol**
- **Rarely or never wore a motorcycle helmet**
- **Rode with a driver who had been drinking alcohol**
- **Rarely or never wore a seatbelt**

### 8. Violence and carrying a weapon
- **Carried a weapon**
- **Carried a weapon on school property**
- **In a physical fight**
- **In a physical fight on school property**

### 9. Self-harm behaviors
- **Felt sad or hopeless**
- **Seriously considered attempting suicide**

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[NOZU Yuji, 2012]
### Change in prevalences of risk behaviors over ten years (female)

<table>
<thead>
<tr>
<th>1. Physical activity</th>
<th>Vigorous physical activity</th>
<th>Muscle strengthening exercises</th>
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<td>In a physical fight</td>
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<td></td>
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<td></td>
<td>In a physical fight on school property</td>
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<tr>
<td>9. Self-harm behaviors</td>
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</tr>
</tbody>
</table>

(NOZU Yuji, 2012)
# Comparison of prevalences of risk behaviors in Japan and the USA (10th-grade male)

<table>
<thead>
<tr>
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<th>Muscle strengthening exercises</th>
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<td>Rarely or never wore a bicycle helmet</td>
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<td></td>
<td>Rode with a driver who had been drinking alcohol</td>
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<td>8. Violence and carrying a weapon</td>
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<td>Carried a weapon on school property</td>
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<td></td>
<td>In a physical fight on school property</td>
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</tbody>
</table>

Comparison of prevalences of risk behaviors in Japan and the USA (10th-grade male) (NOZU Yuji, 2012)

- Worse in Japan
- Worse in the USA
- Negligible difference ($p<.05$)
## Comparison of prevalences of risk behaviors in Japan and the USA (10th-grade female)

<table>
<thead>
<tr>
<th>1. Physical activity</th>
<th>Muscle strengthening exercises</th>
<th>At least 60 minutes of moderate physical activity per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Dietary behaviors</td>
<td>Had breakfast</td>
<td>Did not eat for ≥24 hours</td>
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<td>3. Cigarette smoking</td>
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</tr>
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<td>7. Traffic-related behaviors</td>
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</tr>
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<td>9. Self-harm behaviors</td>
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</tr>
</tbody>
</table>

(NOZU Yuji, 2012)
Comparison of prevalences of risk behaviors in Japan and the USA (11th-grade male)

<table>
<thead>
<tr>
<th>Risk Behaviors</th>
<th>Japan</th>
<th>USA</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Physical activity</strong></td>
<td>Muscle strengthening exercises</td>
<td>At least 60 minutes of moderate physical activity per day</td>
<td>Worse in the USA</td>
</tr>
<tr>
<td><strong>2. Dietary behaviors</strong></td>
<td>Had breakfast</td>
<td>Did not eat for ≥24 hours</td>
<td>Vomited or took laxatives</td>
</tr>
<tr>
<td><strong>3. Cigarette smoking</strong></td>
<td>Ever smoked cigarettes</td>
<td>Current cigarette use</td>
<td>Current frequent cigarette use</td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>7. Traffic-related behaviors</strong></td>
<td>Rarely or never wore a bicycle helmet</td>
<td>Rarely or never wore a seatbelt</td>
<td>Rode with a driver who had been drinking alcohol</td>
</tr>
<tr>
<td><strong>8. Violence and carrying a weapon</strong></td>
<td>Carried a weapon</td>
<td>Carried a weapon on school property</td>
<td>In a physical fight</td>
</tr>
<tr>
<td><strong>9. Self-harm behaviors</strong></td>
<td>Felt sad or hopeless</td>
<td>Seriously considered attempting suicide</td>
<td></td>
</tr>
</tbody>
</table>

Tsukuba Health Education (THE) Study

Comparison of prevalences of risk behaviors in Japan and the USA (11th-grade male) (NOZU Yuji, 2012)
### Comparison of prevalences of risk behaviors in Japan and the USA (11th-grade female)

<table>
<thead>
<tr>
<th></th>
<th>Japan</th>
<th>USA</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Physical activity</td>
<td>Muscle strengthening exercises</td>
<td>At least 60 minutes of moderate physical activity per day</td>
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<td>Ever had sexual intercourse</td>
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</tr>
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<td>7. Traffic-related behaviors</td>
<td>Rarely or never wore a bicycle helmet</td>
<td>Rarely or never wore a seatbelt</td>
<td>Rode with a driver who had been drinking alcohol</td>
</tr>
<tr>
<td>8. Violence and carrying a weapon</td>
<td>Carried a weapon</td>
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<td>9. Self-harm behaviors</td>
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<td>Seriously considered attempting suicide</td>
<td></td>
</tr>
</tbody>
</table>

(Nozu Yuji, 2012)
### Comparison of prevalences of risk behaviors in Japan and the USA (12th-grade male)

<table>
<thead>
<tr>
<th>1. Physical activity</th>
<th>Muscle strengthening exercises</th>
<th>At least 60 minutes of moderate physical activity per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Dietary behaviors</td>
<td>Had breakfast</td>
<td>Did not eat for ≥24 hours</td>
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<td></td>
<td></td>
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<td></td>
<td>Ever used marijuana</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ever used MDMA</td>
</tr>
<tr>
<td>6. Sexual behaviors</td>
<td>Ever had sexual intercourse</td>
<td></td>
</tr>
<tr>
<td>7. Traffic-related behaviors</td>
<td>Rarely or never wore a bicycle helmet</td>
<td>Rarely or never wore a seatbelt</td>
</tr>
<tr>
<td>8. Violence and carrying a weapon</td>
<td>Carried a weapon</td>
<td>Carried a weapon on school property</td>
</tr>
<tr>
<td>9. Self-harm behaviors</td>
<td>Felt sad or hopeless</td>
<td>Seriously considered attempting suicide</td>
</tr>
</tbody>
</table>

(NOZU Yuji, 2012)
## Comparison of prevalences of risk behaviors in Japan and the USA (12th-grade female)

<table>
<thead>
<tr>
<th>Category</th>
<th>Japan</th>
<th>USA</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Physical activity</td>
<td>Muscle strengthening exercises</td>
<td>At least 60 minutes of moderate physical activity per day</td>
<td></td>
</tr>
<tr>
<td>2. Dietary behaviors</td>
<td>Had breakfast</td>
<td>Did not eat for ≥24 hours</td>
<td>Vomited or took laxatives</td>
</tr>
<tr>
<td>3. Cigarette smoking</td>
<td>Ever smoked cigarettes</td>
<td>Current cigarette use</td>
<td>Current frequent cigarette use</td>
</tr>
<tr>
<td>4. Alcohol drinking</td>
<td>Ever drank alcohol</td>
<td>Current alcohol use</td>
<td></td>
</tr>
<tr>
<td>5. Drug abuse</td>
<td>Ever used thinner</td>
<td>Ever used methamphetamine</td>
<td>Ever used marijuana</td>
</tr>
<tr>
<td>6. Sexual behaviors</td>
<td>Ever had sexual intercourse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Traffic-related behaviors</td>
<td>Rarely or never wore a bicycle helmet</td>
<td>Rarely or never wore a seatbelt</td>
<td>Rode with a driver who had been drinking alcohol</td>
</tr>
<tr>
<td>8. Violence and carrying a weapon</td>
<td>Carried a weapon</td>
<td>Carried a weapon on school property</td>
<td>In a physical fight</td>
</tr>
<tr>
<td>9. Self-harm behaviors</td>
<td>Felt sad or hopeless</td>
<td>Seriously considered attempting suicide</td>
<td></td>
</tr>
</tbody>
</table>

(NOZU Yuji, 2012)
The percentages of 10th- and 11th-grade male and 11th-grade female students significantly increased over 10 years.
- The percentage of 12th-grade female students significantly decreased.

The percentage of students who participated in vigorous physical activity on at least 3 days during the 7 days before the survey decreased over the 10-year period. The decrease was most evident among female students in the 12th grade.

*(NOZU Yuji, 2012) Tsukuba Health Education (THE) Study*
The percentages of 10th-grade male and 10th- and 11th-grade female students significantly increased over 10 years.

*Non-overlapping 95% CI
The percentages of 10th- and 11th-grade male and female students significantly increased over 10 years.

**Percentage of students who participated in muscle stretching exercises on at least 3 days during the 7 days before the survey**

*Non-overlapping 95% CI*

(NOZU Yuji, 2012)
The percentages of male and female students in all grades significantly increased over 10 years.

*Non-overlapping 95% CI
Change over 10 years

Percentage of students who ate vegetables and fruits of ≥5 servings on the day before the survey

The percentages of male and female students in all grades significantly decreased over 10 years.
Change over 10 years

Percentage of students who did not eat for ≥24 hours during the 30 days before the survey

The percentage of 10th-grade female students significantly decreased over 10 years.

*Non-overlapping 95% CI

(NOZU Yuji, 2012)
Percentage of students who vomited or took laxatives during the 30 days before the survey

The percentage of 12th-grade female students significantly decreased over 10 years.

*Non-overlapping 95% CI
Percentage of students who took diet pills, powders, or liquids during the 30 days before the survey

The percentages of female students in all grades significantly decreased over 10 years.

*Non-overlapping 95% CI
Change over 10 years

Percentage of students who ever smoked cigarettes during their life

- The percentages of male and female students in all grades significantly decreased over 10 years.

*Non-overlapping 95% CI
**Tsukuba Health Education (THE) Study**

### Change over 10 years

Percentage of students who smoked cigarettes on at least 1 day during the 30 days before the survey

The percentages of male and female students in all grades significantly decreased over 10 years.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>10th</td>
<td>21.7</td>
<td>11.1</td>
</tr>
<tr>
<td>11th</td>
<td>25.2</td>
<td>14.4</td>
</tr>
<tr>
<td>12th</td>
<td>36.8</td>
<td>14.7</td>
</tr>
</tbody>
</table>

*Non-overlapping 95% CI*

(NOZU Yuji, 2012)
Percentage of students who smoked cigarettes on 20 or more days during the 30 days before the survey

The percentages of male and female students in all grades significantly decreased over 10 years.
Change over 10 years

Percentage of students who smoked more than 10 cigarettes/day during the 30 days before the survey

The percentages of 10th-, 11th-, and 12th-grade male and 11th- and 12th-grade female students significantly decreased over 10 years.
The percentages of male and female students in all grades significantly decreased over 10 years.

*Non-overlapping 95% CI
Percentage of students who drank alcohol on at least 1 day during the 30 days before the survey

The percentages of male and female students in all grades significantly decreased over 10 years.

*Non-overlapping 95% CI

JYRBS 2001  JYRBS 2011
The percentages of male and female students in all grades significantly decreased over 10 years.

Change over 10 years

Percentage of students who drank alcohol on 10 or more days during the 30 days before the survey

*Non-overlapping 95% CI
Percentage of students who ever drank alcohol in a gulp during their life

The percentages of male and female students in all grades significantly decreased over 10 years.

*Non-overlapping 95% CI
The percentages of 10th-, 11th-, and 12th-grade male and 11th-grade female students significantly decreased over 10 years.
Change over 10 years

Percentage of students who ever used methamphetamine during their life

The percentages of male and female students in all grades did not change significantly over 10 years.
Change over 10 years

Percentage of students who ever used marijuana during their life

The percentages of male and female students in all grades did not change significantly over 10 years.
Change over 10 years

Percentage of students who ever had sexual intercourse during their life

The percentages of male and female students in all grades decreased over 10 years.
Change over 10 years

Percentage of students who used a condom* during last sexual intercourse

The percentage of 11th- and 12th-grade male and female students significantly increased over 10 years.

#Among students who had ever had sexual intercourse.
*Non-overlapping 95% CI
### Change over 10 years

Percentage of students who rarely or never wore a bicycle helmet\(^\#\) during the 12 months before the survey.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>10th</td>
<td>93.5</td>
<td>93.5</td>
</tr>
<tr>
<td>11th</td>
<td>99.1</td>
<td>99.6</td>
</tr>
<tr>
<td>12th</td>
<td>98.8</td>
<td>98.8</td>
</tr>
<tr>
<td>10th</td>
<td>91.7</td>
<td>94.5</td>
</tr>
<tr>
<td>11th</td>
<td>99.6</td>
<td>99.6</td>
</tr>
<tr>
<td>12th</td>
<td>98.2</td>
<td>98.9</td>
</tr>
</tbody>
</table>

**Legend:**
- Red bars represent JYRBS 2011.

\(^\#\) Among students who had ridden a bicycle during the 12 months before the survey.

*Non-overlapping 95% CI

The percentage of 10th-grade female students significantly increased over 10 years.
Change over 10 years

Percentage of students who rode a bicycle after drinking alcohol during the 30 days before the survey

The percentages of male and female students in all grades significantly decreased over 10 years.

*Non-overlapping 95% CI

(NOZU Yuji, 2012)
Change over 10 years

Percentage of students who rarely or never wore a motorcycle helmet* during the 12 months before the survey.

The percentages of 11th- and 12th-grade male and 10th-, 11th-, and 12th-grade female students significantly decreased over 10 years.

Among students who had ridden a motorcycle during the 12 months before the survey.

*Non-overlapping 95% CI

(NOZU Yuji, 2012)
Percentage of students who rarely or never wore a seatbelt when riding in a car driven by someone else

The percentages of male and female students in all grades significantly decreased over 10 years.

*Non-overlapping 95% CI
Change over 10 years

Percentage of students who rode with a driver who had been drinking alcohol during the 30 days before the survey

The percentages of male and female students in all grades significantly decreased over 10 years.

*Non-overlapping 95% CI
Change over 10 years

Percentage of students who carried a weapon during the 30 days before the survey

The percentage of 10th-grade female students significantly decreased over 10 years.

*Non-overlapping 95% CI
Change over 10 years

Percentage of students who carried a weapon on school property during the 30 days before the survey

The percentage of 10th-grade female students significantly decreased over 10 years.

*Non-overlapping 95% CI
Change over 10 years

Percentage of students who were in a physical fight during the 12 months before the survey

The percentages of 10th-, 11th-, and 12th-grade male and 11th- and 12th-grade female students significantly decreased over 10 years.

*Non-overlapping 95% CI

(Nozu Yuji, 2012)
Percentage of students who were in a physical fight on school property during the 12 months before the survey

The percentages of 10th- and 11th-grade male students significantly decreased over 10 years.

*Non-overlapping 95% CI
Change over 10 years

Percentage of students who felt sad or hopeless during the 12 months before the survey

The percentage of 12th-grade female students significantly decreased over 10 years.

*Non-overlapping 95% CI

(Nozu Yuji, 2012)
Change over 10 years

Percentage of students who seriously considered attempting suicide during the 12 months before the survey

The percentages of male and female students in all grades did not change significantly over 10 years.
The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001).

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**Comparison between Japan and the USA**

**Percentage of students who participated in muscle strengthening exercises on at least 3 days during the 7 days before the survey**

*Non-overlapping 95% CI*
Percentage of students who participated in at least 60 minutes of moderate physical activity per day on 5 or more days during the 7 days before the survey.

The percentages of male and female students in all grades were significantly lower in Japan than in the USA (no data in JYRBS 2001).

*Non-overlapping 95% CI
Comparison between Japan and the USA

Percentage of students who had breakfast on all 7 days before the survey

The percentages of male and female students in all grades were significantly higher in Japan than in the USA (no data in YRBS 2001).

*Non-overlapping 95% CI

(NOZU Yuji, 2012)
Tsukuba Health Education (THE) Study

Comparison between Japan and the USA

Percentage of students who did not eat for ≥24 hours during the 30 days before the survey

The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001).

*Non-overlapping 95% CI

(Back to top (index))

(NOZU Yuji, 2012)
Comparison between Japan and the USA

Percentage of students who vomited or took laxatives during the 30 days before the survey

The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001 for 10th- and 11th-grade male and female students).

*Non-overlapping 95% CI
The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001).

Comparison between Japan and the USA

Percentage of students who took diet pills, powders, or liquids during the 30 days before the survey

*Non-overlapping 95% CI

(NOZU Yuji, 2012)
The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001).

Comparison between Japan and the USA

Percentage of students who ever smoked cigarettes during their life

- Male
  - 10th Grade: Japan, 2011 = 18.1%, USA, 2011 = 41.1%
  - 11th Grade: Japan, 2011 = 18.9%, USA, 2011 = 50.2%
  - 12th Grade: Japan, 2011 = 22.2%

- Female
  - 10th Grade: Japan, 2011 = 9.7%, USA, 2011 = 40.8%
  - 11th Grade: Japan, 2011 = 11.6%, USA, 2011 = 43.9%
  - 12th Grade: Japan, 2011 = 14.4%

*Non-overlapping 95% CI

(NOZU Yuji, 2012)
The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001 for female students in all grades).

*Non-overlapping 95% CI
The percentages of 11th- and 12th-grade male and 10th-, 11th-, and 12th-grade female students were significantly lower in Japan than in the USA (in 2001, similar results were observed for female students in all grades, but the percentage of 12th-grade male students was higher in Japan than in the USA).

*Non-overlapping 95% CI
Percentage of students who smoked more than 10 cigarettes/day during the 30 days before the survey

The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001 for 12th-grade male and female students).
The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001 for 10th- and 12th-grade female students).

*Non-overlapping 95% CI

(NOZU Yuji, 2012)
Comparison between Japan and the USA

Percentage of students who drank alcohol on at least 1 day during the 30 days before the survey

The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001).

*Non-overlapping 95% CI

Tsukuba Health Education (THE) Study

(Nozu Yuji, 2012)
The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001).

*Non-overlapping 95% CI
Comparison between Japan and the USA

Percentage of students who ever used methamphetamine during their life

The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001).

*Non-overlapping 95% CI

(NOZU Yuji, 2012)
Comparison between Japan and the USA

Percentage of students who ever used marijuana during their life

The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001).

*Non-overlapping 95% CI

(Tsukuba Health Education (THE) Study)
The percentages of male and female students in all grades (excluding 10th-grade female students, the percentage of which was zero) were significantly lower in Japan than in the USA (no data in JYRBS 2001).

*Non-overlapping 95% CI

(Nozu Yuji, 2012)
Comparison between Japan and the USA

Percentage of students who ever had sexual intercourse during their life

The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001).

*Non-overlapping 95% CI

Tsukuba Health Education (THE) Study

(Nozu Yuji, 2012)
Comparison between Japan and the USA

Percentage of students who rarely or never wore a bicycle helmet# during the 12 months before the survey

The percentages of male and female students in all grades were significantly higher in Japan than in the USA (similar to results of comparison in 2001).

*Among students who had ridden a bicycle during the 12 months before the survey.
*Non-overlapping 95% CI

# Tsukuba Health Education (THE) Study

Back to top (index)
Percentage of students who rarely or never wore a seatbelt when riding in a car driven by someone else

The percentages of male and female students in all grades were significantly higher in Japan than in the USA (similar to results of comparison in 2001).

*Non-overlapping 95% CI

(NOZU Yuji, 2012)
The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001 for 10th-, 11th-, and 12th-grade male and 10th- and 12th-grade female students).

Percentage of students who rode with a driver who had been drinking alcohol during the 30 days before the survey

*Non-overlapping 95% CI

The differences between Japan and the USA were significant (NOZU Yuji, 2012)
The percentages of 10th-, 11th- and 12th-grade male and 10th-grade female students were significantly lower in Japan than in the USA (similar to results of comparison in 2001 for male students in all grades).

### Percentage of students who carried a weapon during the 30 days before the survey

<table>
<thead>
<tr>
<th>Grade</th>
<th>10th Male</th>
<th>11th Male</th>
<th>12th Male</th>
<th>10th Female</th>
<th>11th Female</th>
<th>12th Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>4.4</td>
<td>3.0</td>
<td>3.2</td>
<td>2.7</td>
<td>5.0</td>
<td>4.8</td>
</tr>
<tr>
<td>USA</td>
<td>26.4</td>
<td>25.9</td>
<td>24.1</td>
<td>6.1</td>
<td>6.2</td>
<td>7.1</td>
</tr>
</tbody>
</table>

*Non-overlapping 95% CI

(NOZU Yuji, 2012)
Comparison between Japan and the USA

Percentage of students who carried a weapon on school property during the 30 days before the survey

The percentages of male students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001).

The percentage of 11th-grade female students was significantly higher in Japan than in the USA (similar to results of comparison in 2001).

<table>
<thead>
<tr>
<th>Grade</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>10th</td>
<td>3.2</td>
<td>9.4</td>
</tr>
<tr>
<td>11th</td>
<td>2.4</td>
<td>7.5</td>
</tr>
<tr>
<td>12th</td>
<td>2.6</td>
<td>8.2</td>
</tr>
<tr>
<td>10th</td>
<td>2.9</td>
<td>4.1</td>
</tr>
<tr>
<td>11th</td>
<td>2.5</td>
<td>1.8</td>
</tr>
<tr>
<td>12th</td>
<td>4.6</td>
<td>2.8</td>
</tr>
</tbody>
</table>

* Non-overlapping 95% CI

(Nozu Yuji, 2012)
**Tsukuba Health Education (THE) Study**

**Comparison between Japan and the USA**

**Percentage of students who were in a physical fight during the 12 months before the survey**

The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001).

![Bar chart showing comparison between Japan and the USA for physical fights among students](chart.png)

- **Japan, 2011**
- **USA, 2011**

* Non-overlapping 95% CI

*NOZU Yuji, 2012*
Comparison between Japan and the USA

Percentage of students who were in a physical fight on school property during the 12 months before the survey

The percentages of male and female students in all grades were significantly lower in Japan than in the USA (similar to results of comparison in 2001 excluding 12th-grade male students).

*Non-overlapping 95% CI
The percentages of 10th- and 12th-grade female students were significantly lower in Japan than in the USA (in 2001, there were no significant differences between the percentages of male and female students in all grades in Japan and those in the USA).

*Non-overlapping 95% CI
**Comparison between Japan and the USA**

Percentage of students who seriously considered attempting suicide during the 12 months before the survey

The percentages of 10th- and 12th-grade male and 10th-, 11th-, and 12th-grade female students were significantly higher in Japan than in the USA (similar to results of comparison in 2001 for female students in all grades).

*Non-overlapping 95% CI*
Resilience score for students who participated in vigorous physical activity on at least 3 days during the 7 days before the survey

![Resilience score graph](image)

*Score for students who participated in vigorous physical activity on at least 3 days during the 7 days before the survey. The graph shows the resilience scores for males and females, with asterisks indicating significance levels.

* p<.05

(Nozu Yuji, 2012)
Resilience score for students who had breakfast on all 7 days before the survey

* \( p < .05 \)
Resilience score for students who smoked cigarettes on at least 1 day during the 30 days before the survey

*\*p<.05

(NOZU Yuji, 2012)
Resilience score for students who drank alcohol on at least 1 day during the 30 days before the survey

<table>
<thead>
<tr>
<th></th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 or more days</td>
<td>70.9</td>
</tr>
<tr>
<td>None</td>
<td>70.8</td>
</tr>
<tr>
<td>1 or more days</td>
<td>69.9</td>
</tr>
<tr>
<td>None</td>
<td>67.6</td>
</tr>
</tbody>
</table>

* \( p < .05 \)
Resilience score for students who used thinner during their life

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>None</th>
<th>Female</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or more times</td>
<td>62.8</td>
<td>70.9</td>
<td>65.8</td>
<td>69.6</td>
</tr>
</tbody>
</table>

* *p<.05

(NOZU Yuji, 2012)
Resilience score for students who ever had sexual intercourse during their life

- **Male**
  - One or more times: 71.7
  - None: 70.6

- **Female**
  - One or more times: 69.8
  - None: 68.4

*p<.05*
**Resilience score for students who rarely or never wore a seatbelt when riding in a car driven by someone else**

<table>
<thead>
<tr>
<th></th>
<th>Rarely or never wore</th>
<th>Wore</th>
<th>Rarely or never wore</th>
<th>Wore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>68.3</td>
<td>71.5</td>
<td>67.7</td>
<td>70.0</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

*(NOZU Yuji, 2012)*
Resilience score for students who were in a physical fight during the 12 months before the survey

*Score

* p<.05

(Nozu Yuji, 2012)
Resilience score for students who seriously considered attempting suicide during the 12 months before the survey

*p<.05

(NOZU Yuji, 2012)