Introduction

- Regular physical activities, such as walking and exercising, are closely related to the prevention and improvement of pelvic floor dysfunction because they help maintain an appropriate body weight.

- In addition, gait function, as measured by the Timed Up Go (TUG) test that assesses gait speed and functional mobility, is a factor that is related to urinary incontinence.

- Although studies have shown that the number of steps that one has walked (i.e., step count) is negatively related to various health problems, the relationship between step count and urinary incontinence and physical ability remains unclear.

- The purpose of the study is to examine the relationship between step count, urinary incontinence, and physical ability among middle-aged and older women.

Methods and Materials

- **The study design**: A cohort research

- **Subjects**: The subjects were 23 women (Urinary Incontinence Prevention Program during the period of July-December 2018)

- **Exclusion criteria**
  - Missing data
  - Receiving treatment of urologic, gynecologic, or cardiovascular diseases at the time of the study
  - With a history of urologic and gynecologic severe diseases
  - Medical conditions that clearly prevent participation in the study

- **Survey items**
  1. Basic demographic details (i.e., age, height, weight, Body Mass Index [BMI], number of deliveries, presence or absence of urine leakage during the day and night, frequency of urination per day)
  2. ICIQ-SF
  3. The Sakamoto Muscle Mass Index (SMI)
  4. Triaxial accelerometer (Figure 1) (OMRON Co., Ltd., Kyoto)

- **Comfortable walking speed (m/s), maximum walking speed (m/s), and Time up and go test (TUG)**

- **Statistical analysis**

  - A limitation of this study is related to sampling bias, as the sample consisted of participants who were probably interested in urinary incontinence.

Results

Table 1. Characteristics of the participants

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Height (cm)</th>
<th>Weight (kg)</th>
<th>BMI (kg/m²)</th>
<th>History of deliveries</th>
<th>Incontinence (yes/no)</th>
<th>Mean step count</th>
</tr>
</thead>
<tbody>
<tr>
<td>64.3 ± 11.1</td>
<td>157.0 ± 7.5</td>
<td>64.3 ± 11.1</td>
<td>64.3 ± 11.1</td>
<td>1.0 ± 1.2</td>
<td>0 ± 2</td>
<td>8,927 ± 1,120 steps</td>
</tr>
</tbody>
</table>

Figure 1. Active Style Pro (HIS-750C)

Discussion

- **Exercise**
  - Sample’s mean step count: 6,820 ± 2,419 steps
  - Exceed that of Japanese women’s mean step count (5,867).
  - Tend to be more careful about their health than the average woman.

- **ICIQ-SF**
  - Low step count group may have higher anxiety about the impact of urinary incontinence on daily functioning.

- **TUG**
  - Low step count group showed a larger TUG value than the high step count group. This suggested that there may be differences in overall physical abilities.

Conclusions

- A limitation of this study is related to sampling bias, as the sample consisted of participants who were probably interested in urinary incontinence.

- In order to prevent or manage urinary incontinence, it is important to regularly and long time engage in exercises such as walking everyday.