Use of Flotation Devices for Recreational Swimming

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WA Drowning Prevention Network Meeting

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Flotation Devices vs. Life Jackets

Flotation Devices:
Fun but not designed or designated to prevent drowning.

U.S CG Approved Life Jackets:
Designed & designated to prevent drowning.
Life Jackets vs. Other Flotation Devices At Swim Areas

• Does life jacket use differ by age and gender?

• Does the close presence of an adult alter a child’s use of a life jacket?
Observational Study Methods

- Observations Conducted by JSI Research and Training Institute of Boston (JSI)
  - JSI has conducted annual boater life jacket observation studies for the U.S. Coast Guard since 1998
  - JSI has conducted observations for the National Park Service since 2013
  - JSI conducted WA State boater Life Jacket Observations during same time period
Observation Form

- Type of Body of Water
- Site Conditions
  - Water temp
- Weather observations (x3)
- Any special conditions that may have influenced swimmers.
Observation Form

<table>
<thead>
<tr>
<th>GENDER</th>
<th>AGE (years)</th>
<th>FLOATATION</th>
<th>PFD</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>0-5</td>
<td>None</td>
<td>Old</td>
</tr>
<tr>
<td>F</td>
<td>6-12</td>
<td>Floating Objects</td>
<td>New</td>
</tr>
<tr>
<td>?</td>
<td>13-17</td>
<td>Water Wings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18-64</td>
<td>Pool Toys</td>
<td></td>
</tr>
<tr>
<td></td>
<td>65+</td>
<td>Inflatable</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inner-tube</td>
<td></td>
</tr>
</tbody>
</table>

- Gender
- Arm’s-Length?
- Age
- Type of Flotation Device
- Life Jacket
Results

• 1st published observational study on the use of flotation devices among swimmers in open water settings.

• 1,967 Swimmers Observed at 10 locations
  o 212 children (under the age of 6)
  o 652 children (6 to 12 years)
  o 325 (13 to 17 years)
  o 778 Adults (18+ years)
### Rates of Types of Floatation Device Use (%), By Age of Swimmer
#### All WA Swim Sites*

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Total N</th>
<th>No Flotation Use</th>
<th>Substandard** Flotation Use</th>
<th>PFD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n)</td>
<td>(%)</td>
<td>(n)</td>
<td>(%)</td>
</tr>
<tr>
<td>Toddlers (0-5)</td>
<td>212</td>
<td>72 (34)</td>
<td>33 (15.5)</td>
<td>107 (50.5)</td>
</tr>
<tr>
<td>Preteen (6-12)</td>
<td>652</td>
<td>347 (53.2)</td>
<td>169 (25.9)</td>
<td>136 (20.9)</td>
</tr>
<tr>
<td>All Kids (0-12)</td>
<td>864</td>
<td>419 (48.5)</td>
<td>202 (23.4)</td>
<td>243 (28.1)</td>
</tr>
<tr>
<td>Teens (13-17)</td>
<td>325</td>
<td>229 (70.5)</td>
<td>86 (26.5)</td>
<td>10 (3.1)</td>
</tr>
<tr>
<td>Adults (18+)</td>
<td>778</td>
<td>595 (76.5)</td>
<td>166 (21.3)</td>
<td>17 (2.2)</td>
</tr>
</tbody>
</table>

**Significance Tests**

<table>
<thead>
<tr>
<th></th>
<th>Significant differences between age groups for each PFD status</th>
<th>Significant Differences between Age Groups for Each Type of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toddlers (0-5)   vs Preteen (6-12)</td>
<td>***</td>
<td>**</td>
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<tr>
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<td>ns</td>
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<tr>
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<td>*</td>
<td>ns</td>
</tr>
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</table>

*p<0.05, **p<0.01, ***p<0.0001

*Excluding 66 missing PFD status (59) or gender/age (7); 4 unknown gender included, not shown.

** Substandard Flotation Device Use includes using floating objects, water wings, pool toys or inner-tubes.

JSI Research & Training Institute, Inc., 2015
Results:
Gender Differences Among Age Groups

Males more likely than females to wear life jackets in the following age groups:

- Toddlers (0-5 years) (58.8% vs 42.6%)
- Preteens (6-12 years old) (25.5% vs 16.5%)
- All kids (0-12 years) (33.6% vs 22.9%)
- For all swimmers ages combined (16.6% vs 11.1%)
Results
Within Arm’s-Length vs. NOT Within Arm’s-Length

Flotation use among kids 6 yrs. and under and within arm’s-length vs. further-than-arm’s-length from an adult.

• While in the water, 58.5% of kids 6 and under were within an arm’s-length of an adult
• Life jacket use was about 50% between those within arm’s- length and further than arm’s length
Results

Within Arm’s-Length vs. NOT Within Arm’s-Length

- For kids **within arm’s-length**, boys were somewhat more likely to use life jackets than girls (54% vs 46%)
- Girls somewhat more likely to use substandard flotation devices (17.5% vs. 8%)
  - Increased use of water wings by girls (11.2% vs. 3.2%)
- For kids **further than arm’s-length**, boys were **MUCH** more likely than girls to wear life jackets (66.7% vs. 37.8%)
Results

Results rendered strong age effects and some notable gender effects.

- Other types of flotation devices (not life jackets) were used by 20-27% of kids over 6.

- Life jacket use among swimmers and those playing in open water decreased dramatically with increasing age.
Results

• Life Jackets use by teens were very low for all teenagers and adults **BUT** wear rates in boats is much greater (Mangione, et al, 2015)

  ➢ Teenagers - 45%
  ➢ Adults 15%

**Opportunity:**
Promote life jacket wear to teens and adults in recreational water situations. Focus on overcoming perception that if you can swim, you don’t need a life jacket while swimming in open water.
Study Limitations

- Study was conducted at the peak of summer during warm weather, near the shore and with favorable weather conditions.

- Did not evaluate association of flotations device use with ethnicity, race, familiarity with site or swim ability or comfort in the water.

- Although the study was conducted throughout the state, the findings may be regional due to state’s ongoing focus on life jacket use.

- Age and “arm’s-length’’ was a based on the observer’s opinion/best guess.

- Study goal to assess life jacket loan programs not possible due to inconsistent access to loaner life jackets.
Is the use of substandard flotation devices a drowning risk?

- Problem poorly defined and under-described because of lack of drowning surveillance systems to collect data regarding the use of flotation objects in fatal or nonfatal drownings.

Do parents and users recognize the difference between a tested, standards-based proven U.S. Coast Guard approved life jacket vs. toys like water wings, foam noodles, air mattresses, etc.?

- Some flotation devices are marked as “swim aids” and some even look like life jackets making it even more confusing for parents.
Summary

- Flotation device use was relatively high in designated, unguarded swim sites in natural water settings.
- People use a lot of different kinds of flotation devices, most often using life jackets for young children.
- Prevention messages need to clarify the difference between USCG approved flotation devices as providing drowning prevention AS WELL AS FUN.
Questions?

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