Female soldiers` attitudes toward physical fitness standards in soldiers: associations with military rank, age, body composition and fitness level

Jani P Vaara¹, Jarmo Viskari², Heikki Kyröläinen¹,³, Matti Santtila¹

¹ National Defence University, The Department of Leadership and Military Pedagogy, Finland
² Personnel Division of Defence Command, Finland
³ University of Jyväskylä, The Department of Biology of Physical Activity, Finland
In the Finnish Defence Forces (FDF), women have been able to voluntarily join to the military service as conscripts since 1995.

All deployments are open to women if they have the necessary military training including required mental and physical capabilities being tested within the selection process.

500 female conscripts in FDF. A total of 250 females currently serve as military personnel in FDF.
• The physiological differences between men and women place women in general at a disadvantage position for the physical fitness demands (Epstein et al. 2013).

• Women may experience health-related symptoms and other health outcomes differently compared to men, at least during deployment (Trego et al. 2010).

→ important to study experiences and attitudes of military women also on physical fitness testing and requirements
Methods

• A survey was conducted in all units in FDF.

• In a total of 362 female soldiers participated voluntarily in the study
  • (68 % conscripts, 2 % cadets, 30 % officers and NCOs).

• Response rate was 48 % among conscripts, 100 % among cadets and 39 % among officers and NCO`s.
Attitudes toward:

1. physical fitness and general physical fitness requirements
2. task related physical fitness requirements
3. perceptions about being bullied and experiencing discrimination from physical fitness

• *Statistical analysis*: tests for relative proportions were used within the cross tabulations of outcomes variable and military rank, age, physical fitness and body composition.
• **Personnel group/military rank:**
  1. Conscripts
  2. Non-commissioned officers (NCO)
  3. Officers (including cadets)

• **Age:**
  1. 18-25
  2. 26-35
  3. >35 years.

• **Physical fitness** (12 min running distance):
  1. <2200 m
  2. 2200-2600 m
  3. >2600 m.

• **Body mass index:**
  1. Normal weight (18.5-25)
  2. Overweight (<25)
RESULTS
Results among the entire study population

• 96% soldiers must have a good physical condition.

• 76 % answered that the general physical fitness requirements in the FDF are not too demanding.

• 74 % believed that the physical fitness of females is sufficient for everyday and operational duties.

• Majority of the study population (56-76 %) thought that the current minimum requirements for physical fitness are at appropriate level for females.

• However, 57 % replied that there should be different physical fitness standards for male and female soldiers, and 55 % believed that female soldiers could perform their military service or operational duties if fitness requirements would be lower for females.
Results among the entire study population

• Nearly half (48 %) reported that it creates inequality when there are the same physical fitness standards for both genders.

• 42 % felt that if fitness requirements would be lower for females this would cause lack of respect or inferior treatment by their male colleagues.

• 12 % of the females had experienced bullying about their physical fitness.

• 23 % had experienced occasional and 1 % continuous discrimination about their physical fitness.
1. Physical fitness and general physical fitness requirements

<table>
<thead>
<tr>
<th>Military rank/Personnel group</th>
<th>Age</th>
<th>12 min running test</th>
<th>Body mass index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Conscripts</td>
<td>18-25</td>
<td>26-35</td>
<td>&gt;35</td>
</tr>
<tr>
<td>NCO’s</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Cadets &amp; officers</td>
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</tbody>
</table>

A soldier must be in good physical condition

| I agree / I somewhat agree (%) | 97.2 | 96.5 | 91.3 | 96.5 | 96.2 | 95.2 | 94.0 | 98.7 * | 95.3 | 96.5 | 95.2 |
| Neutral (%)                   | 1.4  | 1.7  | 2.2  | 1.3  | 1.9  | 2.4  | 3.0  | 1.3  | 0.0  | 1.2  | 3.2  |
| I disagree / I somewhat disagree (%) | 1.4  | 1.8  | 6.5  | 2.2  | 1.9  | 2.4  | 3.0  | 0.0  | 4.7  | 2.3  | 1.6  |

Physical fitness requirements are generally too demanding for female soldiers

| Yes (%)                       | 9.0  | 31.6 * | 6.5 ^ | 10.0 | 11.1 | 31.0 * ^ | 16.8 | 9.6  | 7.0  | 10.8 | 17.7 |
| Neutral (%)                   | 13.1 | 7.0    | 4.3   | 13.0 | 1.9 * | 9.5   | 16.8 | 25.6 | 20.9 | 8.9  | 19.4 * |
| No (%)                        | 77.9 | 61.4 * | 89.2 ^ | 77.1 | 87.0 | 59.5 * ^ | 63.4 | 82.1 * | 90.7 * | 80.3 | 62.9 * |

Nimi Työ Osasto 11.11.2015
1. Physical fitness and general physical fitness requirements

<table>
<thead>
<tr>
<th>Military rank/Personnel group</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Age</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>12 min running test</th>
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<th>3</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Conscripts</td>
<td></td>
<td></td>
<td></td>
<td>18-25</td>
<td>26-35</td>
<td>&gt;35</td>
<td></td>
<td>&lt;2200 m</td>
<td>2200-2600 m</td>
<td>&gt;2600 m</td>
<td></td>
<td>&lt;25</td>
</tr>
<tr>
<td>NCO's</td>
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<tr>
<td>Cadets &amp; officers</td>
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</tr>
</tbody>
</table>

Could female soldiers meet the physical fitness demands for conscript service or operational duties if the test requirements would be lower for females than for males

- **Yes (%):**
  - 58.6
  - 64.9
  - 23.9
  - 58.4
  - 37.0
  - 59.5
  - 68.3
  - 52.6
  - 32.6
  - 52.5
  - 61.3

- **Neutral (%):**
  - 23.4
  - 17.5
  - 23.9
  - 24.3
  - 16.7
  - 19.1
  - 16.8
  - 25.6
  - 20.9
  - 22.8
  - 22.6

- **No (%):**
  - 18.0
  - 17.6
  - 52.2
  - 17.3
  - 46.3
  - 21.4
  - 14.9
  - 21.8
  - 46.5
  - 24.7
  - 16.1

The physical fitness requirements are too demanding for female conscripts

- **Yes (%):**
  - 5.4
  - 1.8
  - 0.0
  - 5.2
  - 1.9
  - 0.0
  - 5.9
  - 3.3
  - 2.3
  - 3.9
  - 5.0

- **Neutral (%):**
  - 15.4
  - 43.6
  - 6.5
  - 15.2
  - 9.4
  - 33.7
  - 29.7
  - 14.9
  - 4.7
  - 15.2
  - 31.7

- **No (%):**
  - 79.2
  - 54.5
  - 93.5
  - 79.6
  - 88.7
  - 46.3
  - 64.4
  - 81.8
  - 93.0
  - 80.9
  - 63.3
## 2. Task related physical fitness requirements

<table>
<thead>
<tr>
<th>Military rank/Personnel group</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Age</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>12 min running test</th>
<th>1</th>
<th>2</th>
<th>Body mass index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscripts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&lt; 2200 m</td>
<td>&lt;</td>
<td>&gt; 25</td>
<td></td>
</tr>
<tr>
<td>NCO’s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2200-2600 m</td>
<td></td>
<td>&gt; 25</td>
<td></td>
</tr>
<tr>
<td>Cadet &amp; officers</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&gt; 2600 m</td>
<td></td>
<td>&gt; 25</td>
<td></td>
</tr>
</tbody>
</table>

The minimum requirement for the 12 minute running test in the National Defence University entrance exam is 2600 m. The requirement is:

- Too low (%): 2.3, 0.0, 4.4, 2.2, 3.7, 0.0, 0.0, 1.9, 9.3, 2.7, 0.0
- Appropriate: 80.5, 55.2 *, 82.6, 80.0, 77.8, 53.5 **, 71.3, 79.5, 83.7, 79.1, 64.5 *
- Too demanding: 17.2, 44.8 *, 13.0, 0.0, 18.5, 46.5 **, 28.7, 18.6, 7.0 *, 18.2, 35.5 *
2. Task related physical fitness requirements

<table>
<thead>
<tr>
<th>Military rank/personnel group</th>
<th>Age</th>
<th>Physical fitness (12 min running test)</th>
<th>Body mass index</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCO’s</td>
<td>18-23</td>
<td>&lt; 2200 m</td>
<td>&lt; 25</td>
</tr>
<tr>
<td>Cadets &amp; officers</td>
<td>26-35</td>
<td>2200-2600 m</td>
<td>&gt; 25</td>
</tr>
<tr>
<td>&gt; 35</td>
<td>&gt; 2600 m</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For international crisis management and peacekeeping missions the minimum requirement for the 12 minute running test is 2500 m for operational duties. I think that for females the requirement is:

<table>
<thead>
<tr>
<th>Too low</th>
<th>22.1</th>
<th>8.6 *</th>
<th>30.4 ^</th>
<th>22.1</th>
<th>25.9</th>
<th>7.0 *^</th>
<th>8.8</th>
<th>22.4 *</th>
<th>48.8 *^</th>
<th>23.6</th>
<th>9.7 *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate</td>
<td>73.4</td>
<td>65.5</td>
<td>65.3</td>
<td>74.0</td>
<td>64.8</td>
<td>60.5</td>
<td>74.5</td>
<td>73.1</td>
<td>48.8 *^</td>
<td>70.6</td>
<td>74.3</td>
</tr>
<tr>
<td>Too demanding</td>
<td>4.5</td>
<td>25.9 *</td>
<td>4.3</td>
<td>3.9</td>
<td>9.3</td>
<td>32.5 *^</td>
<td>16.7</td>
<td>4.5 *</td>
<td>2.4 *</td>
<td>5.8</td>
<td>16.1 *</td>
</tr>
</tbody>
</table>

For international crisis management and peacekeeping missions the minimum requirement for the 12 minute running test is 2300 m for staff, support and military observer positions. I think that for females the requirement is:

<table>
<thead>
<tr>
<th>Too low</th>
<th>32.0</th>
<th>21.1</th>
<th>45.7 ^</th>
<th>32.5</th>
<th>44.4</th>
<th>11.9 *^</th>
<th>17.8</th>
<th>34.6 *</th>
<th>62.8 *^</th>
<th>36.7</th>
<th>12.9 *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate</td>
<td>67.1</td>
<td>71.9</td>
<td>54.3</td>
<td>66.6</td>
<td>53.7</td>
<td>81.0 ^</td>
<td>79.2</td>
<td>64.1 *</td>
<td>37.2 *^</td>
<td>61.8</td>
<td>85.5 *</td>
</tr>
<tr>
<td>Too demanding</td>
<td>0.9</td>
<td>7.0</td>
<td>0.0</td>
<td>0.9</td>
<td>1.9</td>
<td>7.1 *</td>
<td>3.0</td>
<td>1.3</td>
<td>0.0</td>
<td>1.5</td>
<td>1.6</td>
</tr>
</tbody>
</table>
### 3. Perceptions about being bullied and experiencing discrimination from physical fitness

<table>
<thead>
<tr>
<th>Military rank/personnel group</th>
<th>Age</th>
<th>Physical fitness (12 min running test)</th>
<th>Body mass index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Conscripts 2 NCO’s 3 Cadets &amp; officers</td>
<td>18-25 26-35 &gt; 35</td>
<td>&lt; 2200 m 2200-2600 m &gt; 2600 m &lt; 25 &gt; 25</td>
<td></td>
</tr>
</tbody>
</table>

**I have been bullied about my physical fitness during military service or military career**

<table>
<thead>
<tr>
<th></th>
<th>1 I agree / I somewhat agree</th>
<th>2 Neutral</th>
<th>3 I disagree / I somewhat disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11.3 15.8 10.9 11.3 14.8 11.9</td>
<td>17.8 9.0 7.0</td>
<td>9.7 21.0</td>
</tr>
<tr>
<td></td>
<td>7.6 1.7 4.3 6.5 5.6 7.1 9.9 5.1 2.3 5.0 11.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>81.1 82.5 84.8 82.2 79.6 81.0 72.3 85.9 90.7 85.3 67.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**How often have you experienced discrimination because of your physical fitness?**

<table>
<thead>
<tr>
<th></th>
<th>1 Never</th>
<th>2 Occasionally</th>
<th>3 Continuously</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>73.1 81.0 82.6 75.1 75.9 79.1 71.6 77.9 81.4</td>
<td>78.6 66.2</td>
<td>78.6 30.6</td>
</tr>
<tr>
<td></td>
<td>25.5 19.0 17.4 24.5 20.4 20.9 25.5 22.1 18.6</td>
<td>21.0</td>
<td>21.0</td>
</tr>
<tr>
<td></td>
<td>1.4 0.0 0.0 0.4 3.7 0.0 2.9 0.0 0.0</td>
<td>0.4 3.2</td>
<td></td>
</tr>
</tbody>
</table>
Primary findings

• NCO’s, older soldiers, overweight and females with lower physical fitness:
  – the physical demands and minimum fitness requirements are too high for female soldiers
  – the physical fitness tests and standards should be gender-specific.
  – gender-specific tests would not create inequality

• Lower fitness and overweight associated with:
  – higher prevalence of being bullied due to physical fitness

• Overweight associated with:
  – experiences about discrimination because of physical fitness
Practical applications and conclusions

• Although over half of the females in the present study would like to have gender-specific fitness tests and requirements

– creating task-related requirements and thereby possible reducing the inequality experiences derived from male vs. female differences in physical fitness?
Practical applications and conclusions

• 12% had experienced being bullied, and 23% had experienced occasional and 1% continuous discrimination due to their physical fitness.
  – A call for finding ways for prevention of being bullied and discriminated because of physical fitness.
  – More information about zero tolerance in FDF about bullying and discrimination is needed.
  – Educating the recognition of these situations and further educating of solving the problems as a means of preventive actions is also necessary.
Thank you!

Researcher Jani Vaara
Finnish National Defence University
Helsinki, Finland
jani.vaara@mil.fi