Ergonomic Survey of Household Tasks and Products

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Research Questions

**What** are the most tiring household tasks?

**Why** are these tasks tiring?

**How** do these results compare to the 1937 study by E. Knowles?

- 582 Homemakers from Central New York
- Five Most Tiring Tasks
  - General cleaning
  - Mopping floors
  - Washing
  - Ironing
  - Carrying water
Research Questions

Will the most tiring tasks today be different to those found in the Knowles study?
How will ergonomic awareness affect the tasks and products involved with these tasks?
Methods

Subjective Survey
- Web based, self-reported
- Variables include: Age, Gender, Residence, Occupation, Health Status, Number of persons in household, Number of hours spent per task

Subjects
- chose the most tiring task
- ranked tasks by perceived exertion level
Most Tiring Tasks

percent  N = 374

- Scrubbing
- Mopping floors
- Tidying Up
- Vacuuming
- Doing Laundry
- Washing dishes
- Preparing meals
- Other
- Ironing
- Dusting
- Sweeping floors
- Cleaning countertops
- Un/loading dishwasher

Ratings of Perceived Exertion for the Five Most Tiring Tasks

Tiring Level
Most Tiring Tasks by Gender

- Mopping floors
- Scrubbing
- Tidying Up
- Vacuuming
- Doing Laundry
- Preparing meals
- Washing dishes

Men (n = 78) vs. Women (n = 304)

Percent

W = 217.5
p = .033
Most Tiring Tasks by Age

Doing Laundry  Ironing  Preparing meals  Washing dishes  Mopping floors  Scrubbing  Tidying up/Picking things up  Vacuuming

n = 152  n = 98  n = 62  n = 34  n = 12  n = 10

***Vacuuming

$X^2 = 15.456$

$p = .000$
Frequency of Floor Cleaning

Tasks Performed Yesterday

Use of Ergonomic/Timesaving Products

percent

use regularly
never tried

never tried tried use regularly

KNIFE PEELER GRATER CANOPEN JAROPEN BROOM/BRUSH MOP VACUUM SPONGE RAG SPATULA
Summary

Similarities exist between the two surveys

<table>
<thead>
<tr>
<th>1937</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>General cleaning</td>
<td>Scrubbing</td>
</tr>
<tr>
<td>Mopping floors</td>
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</tr>
<tr>
<td>Washing</td>
<td>Tidying up/Picking</td>
</tr>
<tr>
<td>Ironing</td>
<td>Vacuuming</td>
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<tr>
<td>Carrying water</td>
<td>Doing Laundry</td>
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</tbody>
</table>

Floor cleaning is the most tiring aspect of housework.

- Scrubbing and mopping
- Vacuuming
Summary

Age and Gender Differences
- ranking of tasks
- tiring rating of tasks
- time spent on tasks

Use of ergonomic products
- infrequent
- age differences
Summary

Limitations
- sample demographics
- questions wording/format
- lack of qualitative questions
Recommendations

Re-design the process of mopping, scrubbing and vacuuming
  – to decrease bending, stretching and effort
  – investigate making floors out of easier to clean surfaces
  – investigate improving chemical floor cleaners

Increase public awareness about using ergonomic products
  – many subjects said “ergonomic” products were not worth the money
  – many subjects had not heard of many of the ergonomic products

Enable users to improve their household work environment
  – for example put adjustable sinks and countertops in new homes
  – place a sliding or foldout surface on the hamper or washing machine to eliminate sorting laundry on the floor