Exploring How Childhood Exposure to Nature Influences Adult Behavior

FROM ACorns GROW OAKS

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Department of Behavioral Community and Health Sciences
Outline of Presentation

• Review of Literature

• Project Development

• Exploratory Survey and Research Aims

• Results and Analysis

• Interpretation of Results

• Study Limitations

• Relevance to Public Health and Phipps
Contact with Nature

• Physical and Psychological Benefits
  • Recovery from stress and attention fatigue
  • Encourages exercise and physical activity
  • Stimulates psychological and physical development in children
  • Personal sense of purpose and social development

• Community Benefits
  • Encourages social contact
  • Builds community capacity
  • Reduces violence
  • Reduces graffiti
Project Development

- Community-based participatory research approach
- Childhood exposure to nature influence adult behavior
  - Does this hold true for Phipps patrons?
  - Design exploratory survey to investigate

Community of Interest

- Adults who have demonstrated interest in Phipps
  - Phipps members
  - Non-member visitors
  - Facebook and Twitter
Exploratory Phipps Survey

- Questions based on previous studies
  - Available upon request

- Distributed via e-mail, Facebook, and Twitter

- Three sections to survey
  - Exposure to nature as adult
  - Exposure to nature as child
    - Before age eleven
    - How engage next generation

- Focusing on small portion of data collected
Specific Research Aims

1) **Characterize the engagement** the Phipps patrons have with nature as an adults and in their childhood

2) **Examine the interaction** between childhood experiences and adult experiences through bivariate statistical analysis

3) **Characterize the nature-based activities** that make Phipps patrons feel the most physically and psychologically well

4) **Examine the interaction** between contact with nature and perceived physical or psychological health benefit though bivariate statistical analysis
Exploratory Phipps Survey

- 270 Individuals Responded
  - 86% Female
  - 98% White
  - Age ranged from 20-88 with average of 46
  - 65% higher than $50,000 annual household income
  - 72% held college degree or higher

- Very similar to previous membership survey
Specific Aim 1: Characterize Engagement

Table 1. Adult Exposure to Nature

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spend time in outdoor places with trees and plants?</td>
<td>1 (0.4%)</td>
<td>6 (2%)</td>
<td>19% (52)</td>
<td>78% (211)</td>
</tr>
<tr>
<td>Spend time in indoor place caring for plant life?</td>
<td>23 (9%)</td>
<td>20% (54)</td>
<td>35% (94)</td>
<td>37% (99)</td>
</tr>
</tbody>
</table>

Table 2. Childhood Exposure to Nature

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Spend time in outdoor places with trees and plants?</td>
<td>1 (0.4%)</td>
<td>2.8% (7)</td>
<td>9.3% (23)</td>
<td>87.4% (215)</td>
</tr>
<tr>
<td>Spend time in indoor place caring for plant life?</td>
<td>23.3% (57)</td>
<td>38.4% (94)</td>
<td>27.8% (68)</td>
<td>10.6% (26)</td>
</tr>
</tbody>
</table>
Specific Aim 1: Characterize Engagement

Table 3. Frequency of Adult Nature-Based Activities

<table>
<thead>
<tr>
<th>Active Gardening</th>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picking flowers, fruits, or vegetables from a garden</td>
<td>17</td>
<td>46</td>
<td>78</td>
<td>129</td>
</tr>
<tr>
<td>Planting trees, seeds, or plants</td>
<td>16</td>
<td>42</td>
<td>74</td>
<td>137</td>
</tr>
<tr>
<td>Taking care of indoor plants</td>
<td>30</td>
<td>42</td>
<td>80</td>
<td>118</td>
</tr>
<tr>
<td>Taking care of outdoor plants</td>
<td>13</td>
<td>32</td>
<td>74</td>
<td>151</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Passive Interactions with Plants</th>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camping</td>
<td>75</td>
<td>83</td>
<td>83</td>
<td>28</td>
</tr>
<tr>
<td>Hunting or fishing</td>
<td>144</td>
<td>76</td>
<td>34</td>
<td>16</td>
</tr>
<tr>
<td>Going to the beach</td>
<td>16</td>
<td>79</td>
<td>129</td>
<td>46</td>
</tr>
<tr>
<td>Bird watching</td>
<td>51</td>
<td>59</td>
<td>77</td>
<td>83</td>
</tr>
<tr>
<td>Visiting or playing in local parks</td>
<td>9</td>
<td>36</td>
<td>108</td>
<td>116</td>
</tr>
</tbody>
</table>
## Specific Aim 1: Characterize Engagement

Table 4. Frequency of Childhood Nature-Based Activities

<table>
<thead>
<tr>
<th>Active Gardening</th>
<th>Never</th>
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<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picking flowers, fruits, or vegetables from a garden</td>
<td>22</td>
<td>32</td>
<td>82</td>
<td>109</td>
</tr>
<tr>
<td>Planting trees, seeds, or plants</td>
<td>25</td>
<td>55</td>
<td>74</td>
<td>89</td>
</tr>
<tr>
<td>Taking care of indoor plants</td>
<td>56</td>
<td>80</td>
<td>70</td>
<td>39</td>
</tr>
<tr>
<td>Taking care of outdoor plants</td>
<td>33</td>
<td>48</td>
<td>73</td>
<td>91</td>
</tr>
</tbody>
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<tr>
<th>Passive Interactions with Plants</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Camping</td>
<td>72</td>
<td>54</td>
<td>73</td>
<td>45</td>
</tr>
<tr>
<td>Hunting or fishing</td>
<td>94</td>
<td>61</td>
<td>58</td>
<td>32</td>
</tr>
<tr>
<td>Going to the beach</td>
<td>48</td>
<td>67</td>
<td>82</td>
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<tr>
<td>Bird watching</td>
<td>93</td>
<td>55</td>
<td>66</td>
<td>29</td>
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<td>13</td>
<td>42</td>
<td>72</td>
<td>118</td>
</tr>
</tbody>
</table>
Specific Aim 2: Examine the Interaction

Table 5: Reported P-values from Chi-Squared Test for Association

<table>
<thead>
<tr>
<th></th>
<th>Spend time in outdoor places with trees and plants as an adult</th>
<th>Spend time in indoor places caring for plant life as an adult</th>
<th>Participation in passive interactions with plants as an adult</th>
<th>Participation in active gardening experiences as an adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spend time in outdoor places with trees and plants as a child</td>
<td>0.002*</td>
<td>0.559</td>
<td>0.806</td>
<td>0.009*</td>
</tr>
<tr>
<td>Spend time in indoor places caring for plant life as a child</td>
<td>0.218</td>
<td>0.002*</td>
<td>0.044*</td>
<td>0.022*</td>
</tr>
<tr>
<td>Participation in passive interactions with plants as a child</td>
<td>0.025*</td>
<td>0.471</td>
<td>0.001*</td>
<td>0.281</td>
</tr>
<tr>
<td>Participation in active gardening experiences as a child</td>
<td>&lt; 0.000*</td>
<td>0.012*</td>
<td>0.654</td>
<td>&lt; 0.000*</td>
</tr>
</tbody>
</table>

* Denotes significant association at the 0.05 level
Specific 3: Activities and Well-Being

Figure 1. Perceived Health Benefits from Nature-Based Activities in Adulthood
Specific 3: Engagement with Nature and Health

Figure 2. Perceived Health Benefits from Nature-Based Activities in Childhood
### Specific Aim 4: Health and Behavior

#### Table 6. Reported P-values from Chi-Squared Test for Association

<table>
<thead>
<tr>
<th></th>
<th>Trees and plants are important to physical well-being</th>
<th>Trees and plants are important to psychological well-being</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Childhood</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spend time in outdoor places with trees and plants as a child</td>
<td>0.133</td>
<td>0.11</td>
</tr>
<tr>
<td>Spend time in indoor places caring for plant life as a child</td>
<td>0.115</td>
<td>0.058</td>
</tr>
<tr>
<td>Participation in active gardening experiences as a child</td>
<td>0.053</td>
<td>0.157</td>
</tr>
<tr>
<td>Participation in passive interactions with plants as a child</td>
<td>0.049*</td>
<td>0.206</td>
</tr>
<tr>
<td><strong>Adulthood</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spend time in outdoor places with trees and plants as an adult</td>
<td>0.009*</td>
<td>&lt; 0.000*</td>
</tr>
<tr>
<td>Spend time in indoor places caring for plant life as an adult</td>
<td>0.114</td>
<td>0.363</td>
</tr>
<tr>
<td>Participation in active gardening experiences as an adult</td>
<td>0.029*</td>
<td>0.113</td>
</tr>
<tr>
<td>Participation in passive interactions with plants as an adult</td>
<td>0.081</td>
<td>0.417</td>
</tr>
</tbody>
</table>

* Denotes significant association at the 0.05 level
Interpretation of Exploratory Data

• What influences adult nature-based behavior?
  • Spending time in indoor places caring for plants in childhood
  • Active gardening experiences in childhood
Interpretation of Exploratory Data

• Fostering connection to the natural world
• Kids getting their hands dirty
• Ask questions about their local environment
• Appreciation how our daily lives impact and are impacted by nature
Interpretation of Exploratory Data

• Childhood contact with nature
  • Little impact on perceived health benefits from trees and plants

• Time outdoors as an adult
  • Associated with perceiving health benefits from trees and plants
Interpretation of Exploratory Data

• When remembering childhood, not thinking about “health”
  • Viewed interacting with nature as a fun activity

• Appreciation of the health benefits from living an active nature-centered life comes later as health becomes a larger part of education
Study Limitations

- **Recall bias**
  - Might not be remembering the actual frequency and settings
  - Highly active adults might report higher levels of contact with nature in their childhood than actually experienced

- **Generalizability**
  - Captured Phipps population well
  - Demographics of Phipps patrons does not match general population of Pittsburgh

- **Great potential for further research**
  - Continue analysis of data
  - Improve survey
Relevance to Public Health and Phipps

- “Contact with nature” as public health intervention
  - Improve individual well-being
  - Approach to help address chronic health issues
  - Build community capacity

- Support for educational programs
  - Justification for funding

- Public Policy
  - Green spaces and access to nature when developing urban communities
  - Justify conservation efforts
  - “Contact with nature” as a social justice issue
Summary

• Literature provide support that there are health benefits from contact with nature

• Project provides evidence-based support that contact with nature in childhood is important to development

• Great opportunities for Phipps to impact the Pittsburgh community
Questions

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