Are quality of life and family expenditure on physical activity associated with physical activity in 2-4-year-olds in North Somerset and Gloucestershire?

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Physical activity

- UK guidelines state that children under 5 years should engage at least 180 minutes of physical activity per day

*Department of Health Physical Activity Health Improvement and Protection, Start Active, Stay Active 2011*

Jessica Gibson, 71st Flying Training Wing Public Affairs
Health Related Quality of Life (HRQOL)

- HRQoL is a multi-dimensional concept that includes domains related to physical, mental, emotional, and social functioning.
- Quality of life is associated with physical activity in adolescents.
- Determining an association in preschool children could result in a dual benefit for health promotion.
Family expenditure on physical activity

- Cost of activities and transportation are barriers to engaging in physical activity in children.


By Brisbane City Council (Hibiscus Sports Complex swimming lessons) [CC BY 2.0 (http://creativecommons.org/licenses/by/2.0)], via Wikimedia Commons
Hypotheses

1. Children with higher quality of life would be more physically active and spend more time in MVPA (moderate-to-vigorous physical activity).

2. Children whose families spent more money on physical activities would be more physically active and spend more time in MVPA.
Nutritional and Physical Activity Self-Assessment for Child-Care UK
Methods

• Mixed-effects linear regression models
• t-tests to investigate difference by gender, age, parental education and nursery/non-nursery day
• Quality of life measured using PedsQL: Physical and Psychosocial scales
• Physical activity measured with accelerometers
• Expenditure measured through questionnaire
PedsQL Quality of Life Scoring

• Parents ask to assess how much their child had a problem with certain functioning.

• **Physical Functioning Score**: walking; running; lifting things; bathing.

• **Psychosocial Functioning Score**: feeling afraid; feeling angry; playing with other children.
Sample

- 169 consented children from 12 nurseries
- 81 children with complete data
- 74% had a parent with a university degree
### Physical Activity

<table>
<thead>
<tr>
<th></th>
<th>Mean minutes (SD)</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td>Whole sample (n=81)</td>
<td>141.90 (33.10)</td>
<td>-</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (n=43)</td>
<td>148.95 (33.52)</td>
<td>0.04</td>
</tr>
<tr>
<td>Female (n=38)</td>
<td>133.93 (31.15)</td>
<td></td>
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<tr>
<td>Age</td>
<td></td>
<td></td>
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<tr>
<td>2 years old (n=38)</td>
<td>131.29 (31.09)</td>
<td>0.01</td>
</tr>
<tr>
<td>3-4 years old (n=43)</td>
<td><strong>151.28 (32.30)</strong></td>
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<tr>
<td>Parent Education</td>
<td></td>
<td></td>
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<tr>
<td>Degree (n=59)</td>
<td>140.29 (32.07)</td>
<td>0.48</td>
</tr>
<tr>
<td>No degree (n=22)</td>
<td>146.23 (36.13)</td>
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</tr>
<tr>
<td>Nursery day/non-nursery day (n=78)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursery day</td>
<td>146.89 (44.34)</td>
<td>0.05</td>
</tr>
<tr>
<td>Non-nursery day</td>
<td>137.22 (33.76)</td>
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</tbody>
</table>
Physical Activity and Quality of Life (PedsQL)

• High quality of life: physical (median 93.75) psychosocial (median 86.53).

• Children with high levels of physical quality of life (scores 93-100) spent 4.06 (p=0.07) more minutes in MVPA than children in the reference group (scores 50-87).

• No association between psychosocial quality of life and physical activity.
Physical Activity and Expenditure

• No evidence of an association between money spent on child being active and minutes in daily physical activity or MVPA.

• 50.6% of the parents spent less than £9.00 a week on physical activity
Conclusion

- 2-4-year-olds were not meeting the recommended 180 minutes of daily PA
- Children were more active on nursery days than non-nursery days
- Weak evidence of an association between physical quality of life and MVPA
- Physical activity is not associated with family expenditure on physical activities
Acknowledgement

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Thank you