Screen time and self-regulation in young children

Roma Jusienė, Alina Syrnickytė (Pajėdienė)

Department of General Psychology
Psychological Counselling and Training Center
Faculty of Philosophy, Vilnius University

Presentation at ECDP2017 is funded by Research Council of Lithuania (Agreement no. GER-006/2017)
Introduction

• Self-regulation (SR) – the effortful control of behaviour, attention, emotions
• Multidimensional construct
• Internally-directed capacity
• Effective response to both internal and external demands
• SR plays an important role in children’s everyday functioning and later adjustment in various areas

• W.Mischel, C.B.Kopp, G.Kochanska, N.Eisenberg, M.K.Rothbarth, L.A.McCabe, M.Raffaelli et al., etc.
Introduction

• Various forms of screen media are more and more common free-time activities among children
• Screen time is longer and users of it are younger
• SES and parental education can be additional risks
• AAP, 2016; Foster, Watkins, 2010; Kabali et al., 2015; Radesky et al., 2014; Thompson et al., 2013; etc.
• Bidirectional relations among screen time and attention problems, social functioning, internalizing and externalizing problems, and self-regulation
• Anderson, Pempek, 2005; Christakis et al., 2004; Magee et al., 2014; Radesky et al., 2014; etc.
Aim of this study

• The associations between screen time in toddlerhood and self-regulatory abilities of the same children in preschool age
• Prospective and longitudinal research
• Could the self-regulation be predicted by screen time duration in early childhood?
Methods

Participants

• Part of the longitudinal study on early development of self-regulation funded by Research Council of Lithuania

• In this study we analyze complete data of 81 children (37 girls and 44 boys)

• All children were born in May – September 2009 as full term low risk babies

• 58% were first-borns, 65% of parents had high university education and 89% were married
• **Screen time use**: how much time a child spends in front of TV, computer and other IT devices playing, watching, etc.

• **At age 2 and 3 years** old, in minutes

• **Self-regulation, Hot** effortful control: Snack Delay and Gift Wrap (delay of gratification)

• **Self-regulation, Cool** effortful control: Head and Legs (inhibitory control), Draw-a-Circle and Walk-a-Line (motor control), RAVEN B part (attention control), Truck Loading (planning abilities)

• **At age 4 years** old, transformed scores
Results
Correlational analysis

<table>
<thead>
<tr>
<th></th>
<th>Screen Time (2 years)</th>
<th>Screen Time (3 years)</th>
<th>Maternal Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay of Gratification (Snack)</td>
<td>-.11</td>
<td>-.09</td>
<td>.19</td>
</tr>
<tr>
<td>Delay of Gratification (Gift)</td>
<td>-.34**</td>
<td>-.41***</td>
<td>.10</td>
</tr>
<tr>
<td>Inhibitory (cognitive) Control</td>
<td>-.26*</td>
<td>-.14</td>
<td>.22*</td>
</tr>
<tr>
<td>Fine Motor Control</td>
<td>.01</td>
<td>.04</td>
<td>.11</td>
</tr>
<tr>
<td>Gross Motor Control</td>
<td>-.15</td>
<td>-.08</td>
<td>.20*</td>
</tr>
<tr>
<td>Attention Control</td>
<td>-.17</td>
<td>-.19</td>
<td>.30**</td>
</tr>
<tr>
<td>Planning abilities</td>
<td>-.16</td>
<td>-.30**</td>
<td>.26*</td>
</tr>
<tr>
<td>Hot Self-regulation</td>
<td>-.29**</td>
<td>-.33**</td>
<td>.184*</td>
</tr>
<tr>
<td>Cool Self-regulation</td>
<td>-.27*</td>
<td>-.26*</td>
<td>.357**</td>
</tr>
</tbody>
</table>

No significant differences in boys’ and girls’ self-regulation and screen time
Results
Regression: predicting SR by Screen Time

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Predictors</th>
<th>Beta Coefficient</th>
<th>Model Fit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Self-regulation</td>
<td>Screen Time 2 years</td>
<td>-.141</td>
<td>F = 4.747, p &lt; .01; R² = .16</td>
</tr>
<tr>
<td></td>
<td>Screen Time 3 years</td>
<td>-.277*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maternal education</td>
<td>.043</td>
<td></td>
</tr>
<tr>
<td>Cool Self-regulation</td>
<td>Screen Time 2 years</td>
<td>-.172</td>
<td>F = 5.966, p &lt; .001; R² = .19</td>
</tr>
<tr>
<td></td>
<td>Screen Time 3 years</td>
<td>.011</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maternal education</td>
<td>.384**</td>
<td></td>
</tr>
</tbody>
</table>

- Hot self-regulation was predicted by screen time, maternal education “added” only 3% of variance
- Cool self-regulation was not predicted by screen time; maternal education is significant
Conclusions

- Screen time use in young children can have negative effects on their delay of gratification.
- Further examination with larger sample and taking into account the content of media use and developmental and environmental variables is needed.
Ongoing study

- Electronic media use and young children’s health, [www.mediavaikai.lt](http://www.mediavaikai.lt)
- 2017 January – 2018 December
- Funded by Research Council of Lithuania (agreement no. GER-006/2017)
- Over 800 young children (2 – 5 years old)
- Detailed information on e-media use, development, health, social and family environment
- 200 participant children will be tested with self-regulation tasks after one year
- Hope to present more results at ECDP in 2019
THANK YOU FOR ATTENTION

Contact: roma.jusiene@fsf.vu.lt, mediavaikai@gmail.com