Should Apps Be Served with a Side of Media Characters? : The Influence of Character-Based Apps on Children’s Nutritional Knowledge

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Introduction

• Childhood obesity is a serious health issue in the United States.1

• Obesity may occur through poor food choices, marketing practices, & media characters that endorse low-quality foods & beverages.2,3

• As applications (apps) increase,4 children will increasingly see media characters in this new interface.

• Little known about how children’s relationships with characters influence learning of nutritional information from apps.

• Purpose: to examine if children’s relationships with a character featured in an app–D.W. from the children’s program Arthur–influences recall of healthy & unhealthy foods & beverages.

Hypotheses

• Children who like D.W. more, versus less, will recall more healthy & unhealthy foods & beverages from the app.

• Children with repeated app exposure will recall the most healthy & unhealthy foods & beverages from the app followed by the single app exposure group & the no app exposure control group.

Method

• Children (M_age = 5.05 years, SD = 0.64; N = 103) played an iPad app featuring the female character D.W. from Arthur.

• Children were randomly assigned to: a no app exposure control group (n = 34); a single app exposure group (n = 32) who played for 30 minutes; or a repeated exposure group (n = 37) who played for 5 days at home & in a 30 minute test session.

Procedure

• The more children were exposed to the app, the more they reported liking D.W. F(2, 97) = 4.85, p = 0.01, with the control group (M = 2.65, SD = 1.57) & single exposure group (M = 2.84, SD = 1.57) differing from the repeated exposure group (M = 3.68, SD = 1.38; p = 0.01 & p = 0.06, respectively.

• No condition or gender differences for how much children reported liking the app, F(3, 65) = 0.29, p = 0.84.

Results

- Table: OLS Regression Results for Recall of Healthy and Unhealthy Items

<table>
<thead>
<tr>
<th>Dependent Variable:</th>
<th>Healthy Item Free Recall</th>
<th>Unhealthy Item Free Recall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Exposure</td>
<td>-0.053 (0.63)</td>
<td>0.86 (0.47)</td>
</tr>
<tr>
<td>Repeated Exposure</td>
<td>3.71 (1.37) **</td>
<td>1.86 (0.75) *</td>
</tr>
<tr>
<td>Like D.W.</td>
<td>-0.052 (0.14)</td>
<td>-0.02 (0.05)</td>
</tr>
<tr>
<td>Single Exposure x Like D.W.</td>
<td>0.38 (0.22) †</td>
<td>0.01 (0.14)</td>
</tr>
<tr>
<td>Repeated Exposure x Like D.W.</td>
<td>-0.33 (0.35)</td>
<td>0.07 (0.20)</td>
</tr>
<tr>
<td>Constant</td>
<td>1.28 (0.43)</td>
<td>0.34 (0.16)</td>
</tr>
<tr>
<td>Observations</td>
<td>103</td>
<td>103</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.28</td>
<td>0.37</td>
</tr>
</tbody>
</table>

- Comparison

| Comparison          | 0.70 (0.36) *           | -0.07 (0.24)              |

Note: Robust standard errors in parentheses. ** p ≤ 0.01; * p ≤ 0.05, † p = 0.06

- The omitted condition is the no app-exposure condition.

- 1 Compares the Single Exposure x Like D.W. interaction to the Repeated Exposure x Like D.W. interaction.

Discussion & Conclusion

• Children’s relationships with characters may provide a motivational boost that aids recall of healthy items from an app during early exposure.

• Liking D.W. in single exposure → better free recall of healthy but not unhealthy items.

• Perhaps this is because there is a higher number of healthy items in the game compared to unhealthy items.

• With repeated exposure, liking the character interfered with better recall of healthy items from the app.

• So should apps be served with a side of media characters?
  • It depends...
  • Apps can improve children’s recall of healthy foods & beverages, but liking the character can play a motivational or distractor role.

References


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