



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

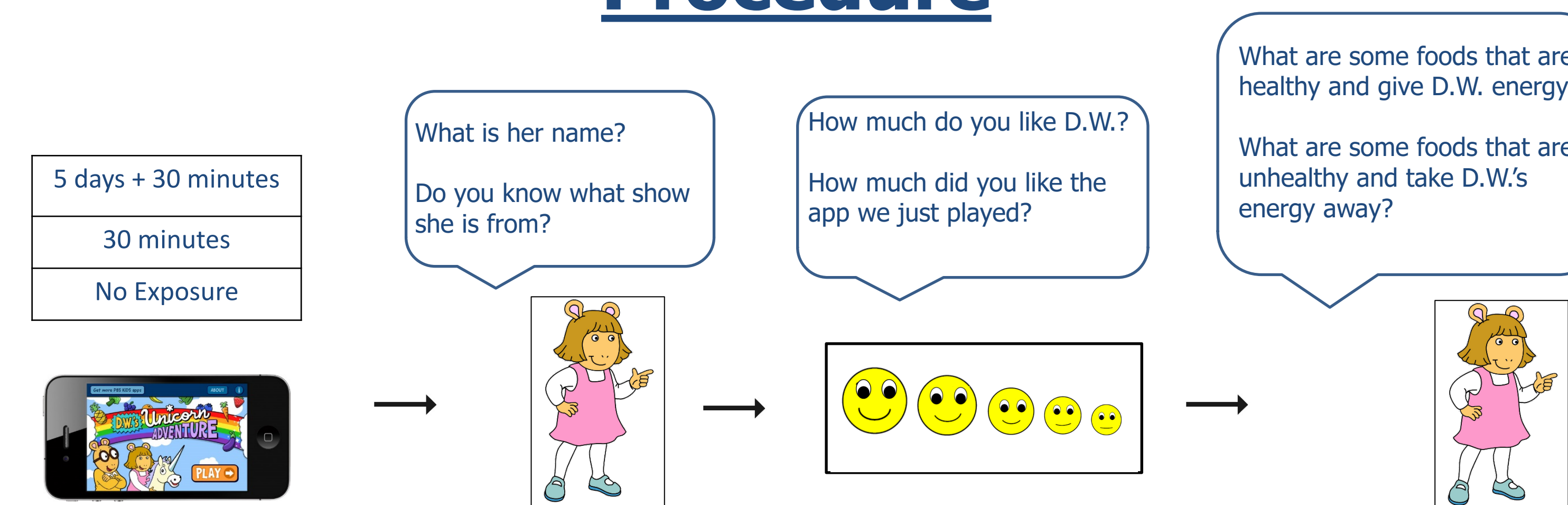
- Children who like D.W. more, versus less, will recall more healthy & unhealthy foods & beverages from the app.
- Children with repeated app exposure will recall the most healthy & unhealthy foods & beverages from the app followed by the single app exposure group & the no app exposure control group.

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



Results

- The more children were exposed to the app, the more they reported liking D.W., $F(2, 97) = 4.85$, $p = 0.10$, 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, $F(3, 65) = 0.29$, $p = 0.84$.

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

Dependent Variable:	Healthy Item Free Recall	Unhealthy Item Free Recall
Condition ¹		
Single Exposure	-0.053 (0.63)	0.86 (0.47)
Repeated Exposure	3.71 (1.37) **	1.86 (0.75) *
Like D.W.	-0.052 (0.14)	-0.02 (0.05)
Single Exposure x Like D.W.	0.38 (0.22) †	0.01 (0.14)
Repeated Exposure x Like D.W.	-0.33 (0.35)	0.07 (0.20)
Constant	1.28 (0.43)	0.34 (0.16)
Observations	103	103
R-squared	0.28	0.37
Comparison ²		
Single Exposure x Like D. W. versus Repeated Exposure x Like D.W.	0.70 (0.36) *	-0.07 (0.24)

Notes: Robust standard errors in parentheses, ** $p \leq 0.01$, * $p \leq 0.05$, † $p = 0.08$

¹ The omitted condition is the no app-exposure condition.

² 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 distracter role.



References

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