

GROCERY HUNT

WHY IT WORKS

GAME EFFECTIVENESS FOR ENDURING LIFESTYLE CHANGE AND BETTER HEALTH

Serious digital games can successfully promote healthy lifestyle change^{1,2}. For example, an analysis of 54 studies of health-promoting serious games found that lifestyles improved significantly from playing the games* as did clinical outcomes**.² The games that are most effective at producing healthy change have a sound theoretical foundation in behavioral change and effective game design.² Merging the immersive, attention-maintaining properties of stories and fantasy, the engaging properties of interactivity, and behavior-change principles, such as tailored messages and goal setting, contributes to game effectiveness.

Game Design for Lifestyle Change

The following components are effective at producing healthy lifestyle change in games for obesity management and prevention:

1. Provide a foundation of knowledge and skill for behavior change.³
2. Encourage personal mastery and offer avatars to personalize the experience.³
3. Demonstrate the desired change for observational learning.³
4. Have players make a personal plan for changing their behavior.⁴
5. Make the game fun! This key element includes dramatic tension, humor, and challenge.³
6. Emphasize increasing desired behavior over decreasing poor behavior, because changing the latter is more difficult to achieve.²



Combining these components increases the likelihood a game will support a healthy lifestyle change.

Tailoring the game experience to the player is another key element to engage them in making a healthy change in their lives. Making the game adjust to personal information the player enters attracts their attention and supports their information processing. Serious game experiences should be tailored according to:

1. The player's specific need for lifestyle change^{1,2}
2. The player's game skills^{1,2}
3. The player's preference^{1,2}

A game that presents messages to the player according to personal information entered or personal goals set before playing is an example of tailoring.³ A food selection game that allows the player to set

the game's challenges and rewards according to foods eaten in specific dietary plans, such as low-carbohydrate or the DASH diet, is another example.

* (g=0.260, 95% CI 0.148; 0.373)²

** (g=0.079, 95% CI 0.038; 0.120)²

ONE PSYCHOLOGICAL THEORY BEHIND GROCERY HUNT'S EFFECTIVENESS FOR LIFESTYLE CHANGE

Inhibitory Control

Many factors lead individuals to make unhealthy food choices. The rewards associated with high-calorie foods, plus packaging and advertising, are just some factors to overcome in changing toward more healthy food choices. In *Grocery Hunt*, the act of food selection is slowed down through engaging game interactions. During these interactions, the health value of the food is made explicit through the information displayed, as well as game rewards or penalties. The result is that the player makes a more conscious choice as to whether or not to select the food.

This is an example of inhibitory control, which involves engaging one's higher order thinking or executive control. In higher order thinking, the individual uses working memory in decision-making, rather than relying on just conditioning.

Research has shown that training can improve executive functions across the lifespan^{5,6}. With better executive functioning, it is easier to control one's thoughts, attention, and emotions, as well as one's behaviors in response to them. We theorize that playing *Grocery Hunt* may contribute to more conscious food choices through the repeated experience of deliberate, information-based choice making in the context of an engaging game.

References

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