A program to build healthy dietary habits of preschoolers based on Social Cognitive Theory

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Introduction

- Childhood
  - The period to positively or negatively influence their future health behaviors
  - Imbalanced nutrition and nutritional behavior playing an important role in their development
- Nurturing healthy dietary habits
  - Especially important in childhood as this is a critical period of growth and development
  - Dietary habits during childhood
    - Difficulty to change or grow into adulthood
    - Shaped from an early age with many of them forming even below the age of 5 years
- Theory based interventions
  - Possible to systematically provide a type of client-centered intervention in which information, or the way information is delivered, is customized to match individual characteristics
  - Not enough theory based studies focused on nutrition education for children
- Behaviors related to diet
  - To be modeled by family members and influenced by responsiveness to environmental cues about food intake and dietary habits
  - The development of healthy eating behaviors
    - To occur through a multifaceted process, including the feeding relationship between the parent and social influences on preschoolers’ dietary habits
- Social Cognitive Theory Based Intervention
  - Used to explain a wide range of health behaviors
  - The value of a theory based program
    - To show the potential of a systematic nutritional program which includes the behavioral, personal, and environmental factors of the Social Cognitive Theory
  - To be considered in developing the intervention to build healthy dietary habits

Theoretical Framework

Variables to measure the effects of the program

- Knowledge related to nutrition (12 items) and dietary habits (9 items) among the preschoolers (Kim, 2009)
  - Correct answer (score 1) & wrong answer (score 0)
- Possible mean range of scores: 0 (no correct answer) ~ 100 (all correct answers)
- Preschoolers’ dietary habits that parents perceive (Min, 2009)

Method

- Research Design
  - Non-equivalent control group, pretest-posttest design
  - Independent variable
    - Theory based interventions
  - Dependent variable
    - Knowledge related to nutrition and dietary habits among the preschoolers
      - Preschoolers’ dietary habits that their parents perceive
- Research Subjects
  - 18 preschoolers and their mothers or fathers for experimental group
  - Those from two day care centers for control group
  - Successfully completed the program from March to June, 2015
- Program Development (Table 1 & Photos)
  - Preparations for the program through a survey, literature review, and consultation from experts
  - Training the research assistants to intervene
  - Depending on the target audience
    - A wide range of child-centered strategies
    - Different engagement approaches
  - Using various methods & materials
    - Demonstration, practice, playacting, quiz, audiovisual media, food cards, and food song for preschoolers
  - Handout, leaflet, and checklist related to dietary habits for their parents
  - Five sessions, every two weeks, during ten weeks

Results

- Homogeneity between the experimental and control group
  - No significant differences between the two groups before the program
- Effects of the program
  - Knowledge related to nutrition among the preschoolers
    - Significantly greater in the experimental group than in the control group
  - Knowledge related to dietary habits among the preschoolers
    - Significantly greater in the experimental group than in the control group
  - Preschoolers’ dietary habits that parents perceive
    - No differences between two groups

Table 1. Summary of the program

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Eating Hygiene</td>
<td>Introducing to the program &amp; pre-test &amp; Hand washing before meal &amp; Brushing their teeth after meal</td>
</tr>
<tr>
<td>2nd Dining Etiquette</td>
<td>Learning table manner &amp; Learning dietary attitudes</td>
</tr>
<tr>
<td>3rd Food and Growth</td>
<td>Learning good and bad foods for their growth</td>
</tr>
<tr>
<td>4th Food and Health</td>
<td>Learning various foods for their health &amp; Learning food and safety &amp; Learning food and culture</td>
</tr>
<tr>
<td>5th Finale</td>
<td>Looking back on the program &amp; Completion &amp; post-test</td>
</tr>
</tbody>
</table>

Table 2. Comparison between two groups

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Knowledge for nutrition*</th>
<th>Knowledge for dietary habits</th>
<th>Subjects</th>
<th>Knowledge for nutrition*</th>
<th>Knowledge for dietary habits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exp</td>
<td>80.52±10.95</td>
<td>70.75±14.06</td>
<td>Con</td>
<td>63.55±16.76</td>
<td>51.20±21.36</td>
</tr>
<tr>
<td>Exp</td>
<td>75.69±11.64</td>
<td>71.35±22.05</td>
<td>Con</td>
<td>67.98±19.82</td>
<td>67.10±23.77</td>
</tr>
<tr>
<td>Exp</td>
<td>92.59±18.34</td>
<td>82.69±21.97</td>
<td>Con</td>
<td>87.88±20.97</td>
<td>88.10±21.69</td>
</tr>
</tbody>
</table>

Paired t-test

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Knowledge for nutrition*</th>
<th>Knowledge for dietary habits</th>
<th>Subjects</th>
<th>Knowledge for nutrition*</th>
<th>Knowledge for dietary habits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exp</td>
<td>8.00±0.04</td>
<td>13.59±0.38</td>
<td>Con</td>
<td>3.45±0.51</td>
<td>3.53±0.12</td>
</tr>
<tr>
<td>Exp</td>
<td>3.70±1.09</td>
<td>10.65±1.90</td>
<td>Con</td>
<td>2.08±0.04</td>
<td>1.00±0.57</td>
</tr>
</tbody>
</table>

Paired t-test

- Probability of paired t-test
  - 0.0001
  - 0.0158
  - 0.0077
  - 0.0073
  - 0.0015

Conclusion

- To suggest the potential as a theory based and developmentally appropriate intervention to build healthy dietary habits of preschoolers
- To confirm the necessity to focus on children at a much earlier age in order to build healthy dietary habits for their lifetime
- To suggest further studies designed to actively involve preschoolers’ parents during a longer intervention period

Table 2. Comparison between two groups

- *MD Mean Difference
- *SE Standard Error
- **P<0.05
- ***P<0.01
- ****P<0.001

Program Development

- Preparations for the program through a survey, literature review, and consultation from experts
- Training the research assistants to intervene
- Depending on the target audience
- A wide range of child-centered strategies
- Different engagement approaches
- Using various methods & materials
- Demonstration, practice, playacting, quiz, audiovisual media, food cards, and food song for preschoolers
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Photos, Scenes for Intervention