The role of nutrition education and active choice to increase fruit and vegetable consumption among second grade students during lunch

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ABSTRACT

Objective: To increase children’s fruit and vegetable consumption using nutrition education and active choice principles.

Study Design, Setting, Participants, Intervention: The study used pre-post intervention comparison design. The intervention utilized a dual module of the Social Cognitive Theory (SCT) and active choice (AC) for second graders in one school in Northern, NJ. For nine weeks, the intervention group received a combination of nutrition education and AC, the control group received AC. AC allowed the participants to choose between two fruits and/or vegetables.

Outcome Measures and Analysis: Variables measured included fruit/vegetable preference, consumption, reciprocal determinism, self-efficacy, behavioral capability, and modeling from SCT. Paired and independent t-tests, chi-square analyses were employed to compare groups.

Results: Eighty-nine students participated in the study (intervention=46, control=43), 57% female and 43% males, with a mean age of 7.64 (SD 0.48). No change was observed in fruit consumption. Vegetable consumption and preference differed after intervention between groups: for consumption (self-efficacy), 6.5% increase for intervention and 4.5% decrease for control group (p<.013); for preference to vegetables, 4.3% increase for intervention and 2.4% decrease for control group. Similarly, knowledge (behavior capability) of fruit and vegetables increased 4.3% in intervention, but decreased 2.4% in control group. Regardless of the group, participants were engaged within the intervention even if they did not take a fruit/vegetable that day.

Conclusions and Implications: Nutrition education combined with AC had a positive impact on knowledge and vegetable consumption/preference in the intervention group. A longer intervention duration with multiple locations may grow the validity of the study for a fundamental and sustainable program to be implemented throughout school districts nationwide.

METHODS

Setting/Participants: The study took place at an elementary school in Southern Bergen County, NJ. There were a total of 89 participants in the intervention group and 43 participants in the control group. Both groups received an Active Choice component, where they were able to choose between 2 different fruits and 2 different vegetables during lunchtime as a snack. (The produce was not served with a dip and were weighed according to the appropriate serving size). The Active Choice was available for the students twice a week for 5 weeks, then a third week break, and a follow-up intervention for one more week. The intervention group received 4 nutrition lessons based on the importance of fruits and vegetables, using the components of SCT as part of the framework. This was to determine if the lessons would increase the amount of participants choosing fruits and vegetables during Active Choice (intervention) days.

RESULTS

Table 1: Intervention vs. Comparison

<table>
<thead>
<tr>
<th>Question</th>
<th>Pre-Survey %</th>
<th>Post-Survey %</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: Fruits with lunch</td>
<td>63 (finish)</td>
<td>69.6 (finish)</td>
<td>&lt;.013</td>
</tr>
<tr>
<td>Q2: Vegetables with lunch</td>
<td>52.2 (finish)</td>
<td>43.5 (finish)</td>
<td>&lt;.013</td>
</tr>
</tbody>
</table>

Table 2: Intervention Comparison

<table>
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CONCLUSIONS

- The role of the SCT provided a guided theoretical framework in which reciprocal determinism reflected the continuous interaction among personal factors, the environment, and behavior (active choice concept).
- Nutrition education combined with active choice had a positive impact on knowledge and vegetable consumption/preference in the intervention group.
- Nutrition education programs in schools and communities need to do a more effective job promoting confidence when adopting healthy eating behaviors among youngsters. Allowing students to have repeated measures of exposure, an easy to follow set of instructions, and sense of connection or importance between themselves and the behavior at hand can help promote mastery of skills, thus can increase one’s level of self-efficacy.
- Combining supplementary components such as parental/guardian, family practices, and community involvement could assist in enhancing the effectiveness of this program design.
- Longer intervention time with multiple locations may increase validity in order to create a fundamental and sustainable program.

References


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