Evaluation of Fruit and Vegetable Intake of Preschoolers
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Abstract
The Center for Disease Control and Prevention claims that children do not receive adequate amounts of fruit and vegetables on a daily basis. Through observation and parent surveying at the NDSU Center for Child Development, it was concluded that these claims were accurate. The purpose of this study was for the target audience of preschool students to increase their fruit and vegetable intake. The children were observed eating their meals before the intervention and parents filled out a brief survey. The Social Cognitive Theory was the theory of behavioral change that was the basis for developing the intervention, materials, and evaluation methods. It was hypothesized that preschoolers were more readily influenced by their peers and likely to consume a larger quantity of fruits and vegetables if their friends do so as well. This theory was then utilized during the intervention throughout a fruit and vegetable identification activity, bingo game with fruits and vegetables, and a taste test of guacamole. Preschoolers were able to identify 90% of fruits and vegetables following the nutrition lesson during the game of Bingo. Preschoolers were also observed during meal periods, post-intervention, with peers how eating their fruits and vegetables help them grow big and strong. The intervention successfully increased the preschool students’ fruit and vegetable intake in regards to the Social Cognitive Theory of Behavior Change.

Context
• Peer behavior influences other preschoolers from consuming fruits and vegetables.

Research Purpose
The purpose of this intervention is to increase the knowledge and consumption of fruits and vegetables in preschoolers at the Center for Child Development.

Assessment
Participants
- Preschoolers at the NDSU Child Development Center, Fargo, ND
- 12 male students, 8 female students
- Age 3-5 years
- 100% of children live with both parents*
- 55% are an only child*
- 44% have one or more siblings*
*Based on parent survey which only 9 were returned. Parents filled out a brief survey. The Social Cognitive Theory is then utilized during the intervention.

Experimental Measure
- Pre-intervention participant observational study
- Pre-intervention take-home parent survey
- Participant intervention
- Post-intervention participant observational study

Hypothesis: Fruit and Vegetable intake is limited in preschoolers due to a knowledge deficit and personal preferences.
- Caregivers do not involve the child with regular meal prep which exposes the child to fruit and vegetables.
- When given a choice, preschoolers choose other food groups.
- Preschoolers are averse to unknown fruits and vegetables.
- The child is unaware of nutritional aspects of fruits and vegetables that benefit their interests.
- Peers strongly influence fruit and vegetable intake.

Outcome Objectives
1. Child Development Center preschool students will be able to identify 90% of fruits and vegetables with 90% accuracy during reinforcement bingo game, immediately following nutrition lesson.
2. Child Development Center preschool students will increase fruit and vegetable intake from 70% to 80% within 2 weeks following intervention.

Community Intervention
- Gave a short nutrition lesson on identifying diverse fruits and vegetables
- Explained the importance of consuming fruits and vegetables in relation to their activities
- Preschoolers taste-tested guacamole and were given a take-home recipe
- Children played an engaging game of Bingo in which they identified fruits and vegetables from nutrition lesson.

Methods of Learning Used in the Intervention
- Visual: Various fruits and vegetables of different colors accompanied by food posters, Bingo cards, and picture recipe hand out
- Hands-on: Touching and smelling different fruits and vegetables, and playing the game of Bingo
- Interactive: Open discussion about favorite activities and how fruits and vegetables relate to them, and taste testing of guacamole

Conclusions
- Preschoolers were able to identify 90% of fruits and vegetables following the nutrition lesson during the game of Bingo.
- Fruit consumption increased from 70% pre-intervention to 88.5% two weeks post-intervention.
- Vegetable consumption increased from 67% pre-intervention to 84.5% two weeks post-intervention.

Implications
• Education of fruits and vegetables in young children can influence their consumption.
• Peers’ attitude towards fruits and vegetables affect intake as related to the Social Cognitive Theory of Behavior.
• Hands-on exposure can provoke excitement in regards to lesser known fruits and vegetables.