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## Population

- > Puenteccillas, Guanajuato, Mexico
- > 2382 People, 537 Households
- > Juan Jose Jardín de Niños: 170+ children ages 4 & 5  
 Three classes participated in project  
 (86 students, 5 years old)



## Background/Significance

- > Mexico Overweight: 26 million people
- > Mexico Obese: 22 million people
- > Obesity Prevalence Rate: 30%  
 (Barrera-Cruz, Rodríguez-González, & Molina-Ayala, 2013)
- > Overweight Children in Mexico: 34.4%  
 (Aburto, Cantoral, Hernández-Barrera, Carriquiry, & Rivera, 2015)
- > Overweight/Obesity Rates: 78% increase 1992-2002;  
 correlated with rising rates of mortality from myocardial infarction, diabetes mellitus, and hypertension  
 (Rivera et al. 2002)
- > Social stigmatization presents severe strain on mental health (Kenny, 2011)
- > Social and economic development inhibited by increased demand for health care services (Peña Nieto, 2013)
- > Excess intake of high-energy dense foods & beverages r/t eating behaviors (snacking)  
 (Taillie, Afeiche, Eldridge, & Popkin, 2015)
- > Modification of individual, family, and community behaviors may prevent/control obesity  
 (Barrera-Cruz, 2013)

## Goals

- > Identify health needs of children at Jardín de Niños
- > Identify health concerns of stakeholders
- > Determine cultural- and age-appropriate method to address health concerns
- > Implement Family-Integrated Health Ed.
- > Develop & Implement Evaluation Method

## Assessments

**Windshield Survey:** There are multiple vendors, mostly selling ice cream, waiting outside the gate of Jardín de Niños on a daily basis that offer unhealthy snacks to children and families.

**Observation of Students at Jardín de Niños:** During classroom lunch time and recess, the students were lively, interacted with each other and their teachers respectfully, and were very physically active.

**Interviews:** The teachers expressed great concern with malnutrition and its effects on the children's energy levels and health. They also spoke to a lack of respect for classroom and familial values related to common family dynamics.

**Interview:** The Directora's primary concern was the lack of parental attention given to children in the home. The missing interaction, she stated, is an integral part to childhood development and health.

**Interviews:** The parents and caregivers reported their health concerns within the community, their homes and with their children. The most common disconcerting health themes reported were nutrition, overweight & obesity, and violence & aggression.

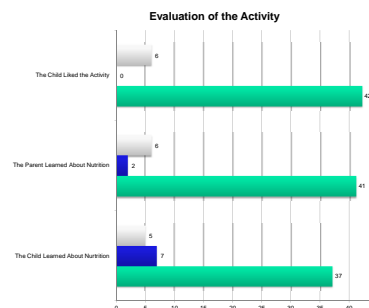
## Findings

¿Qué es su primera preocupación de la salud en la comunidad? (What is your primary health concern in the community?)	
Salud bucal (Dental Health)	1
Alimentación (Nutrition)	13
Sobrepeso/obesidad (Overweight/Obesity)	8
Diabetes (Diabetes)	3
Violencia y agresión(calle y familiar) (Violence & aggression, Street and family)	4
Higiene personal (Personal hygiene)	1
Malas palabras (Bad Words)	3
Zika	0
Maltrato (Abuse)	3
Alergia (Allergies)	0
Gripe/tos (Cold/Cough)	3
Cáncer (Cancer)	0
Educación Sexual (Sex Education)	0
Adicción y alcoholismo (Addiction & Alcoholism)	0

## Intervention

**Nutrition Game:** We implemented an interactive nutrition game with the 3 groups of 5-year-old students. First, we taught a short lesson about healthy snacks, why children need snacks between meals and how they affect the body. Second, we taught the children how to play the "Simon Dice (Simon Says)" using food cues as the direction of how to move. Later, the mothers were invited into the lesson to participate. The children helped in teaching the mothers how to play, and lastly, everyone played the game together.

**Evaluation:** The mothers completed surveys to determine the efficacy of the family-integrated health education



## Conclusions & Recommendations

Would you be interested in participating in more activities like this in the future?



- > 98% of Mothers would like more opportunities for family-integrated learning
- > 76% of Mothers believed their child learned "Mucho" about nutrition
- > 84% of Mothers reported they had learned something about nutrition

"Pues si esta muy bien actividad porque se aprende mucho y que estas actividades sean mas seguido ayudaran a mejorar su alimentación. Me gusto mucho! Gracias!"

*Well, it was a very good activity because you learn a lot and following with more of these activities would help to improve your nutrition. I really like it! Thank you!*

"Me pareció muy buena dinámica para enseñarles sobre nutrición"

*I found it was a very good dynamic to teach them about nutrition*

"Muy divertido para mantener la convivencia aprendiendo"  
*Very fun way to maintain learning*

After collecting the evaluations from the mother, we presented our recommendation to the Directora and Maestras at Jardín de Niños, suggesting that they implement family-integrated outside learning activities into their health education curriculum. The recommendation was well-received, the Directora appreciated our data and the Maestras affirmed this method of education would only be effective if they regularly incorporated it into the curriculum.

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