UNIVERSITY of WEST FLORIDA
COLLEGE of HEALTH
Department of Public Health
HEART. HEALTH. HOME.

Assessing the oral health status of three indigenous communities in Ecuador

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Introduction

- Early childhood caries remains the most prevalent chronic childhood condition worldwide and periodontal disease is the most common cause of tooth loss among adults. According to the World Health Organization (WHO,2012) worldwide 60-90% of school children and nearly 100% of adults have dental cavities, and severe periodontal disease is found in 15-20% adults between the ages of 33-44 years.
- Common risk factors for oral diseases include an unhealthy diet, tobacco and alcohol use, poor oral hygiene and lack of access to health care.
- Lack of access to preventative care and treatment is a major issue, if an individual is able to find treatment, more attention is paid to extraction of the decaying teeth than restorative or preventative interventions (FDI, 2015). This in turn can lead to increasing missed work days, chronic pain, and even malnutrition.

Purpose of the Study

To assess the impact of social determinants of health such as educational level, oral hygiene practices, environmental exposure to fluoride, diet/nutrition, tobacco use and alcohol consumption, and availability of oral health services on the oral health of individuals in three rural communities in Ecuador.

Where “the heck” is Ecuador?

Methodology

Cross sectional survey (WHO, 2013) among 180 adults.

- Non-probability consecutive sampling method
- Caries Risk Indicator/Clinical examination of approximately 150 school age children (6-12 years) in order to assess: a) risk factors; b) protective factors; and clinical risk factors for dental caries.
- Because fluorosis is an issue that affects these communities, the local water systems were tested for excess fluoride.
- This research project was coordinated between staff from the University of West Florida and the University of San Francisco in Quito-Ecuador (USFQ)

GUANGAJE

SALASACA

ITULCACHI

Results Adult Survey

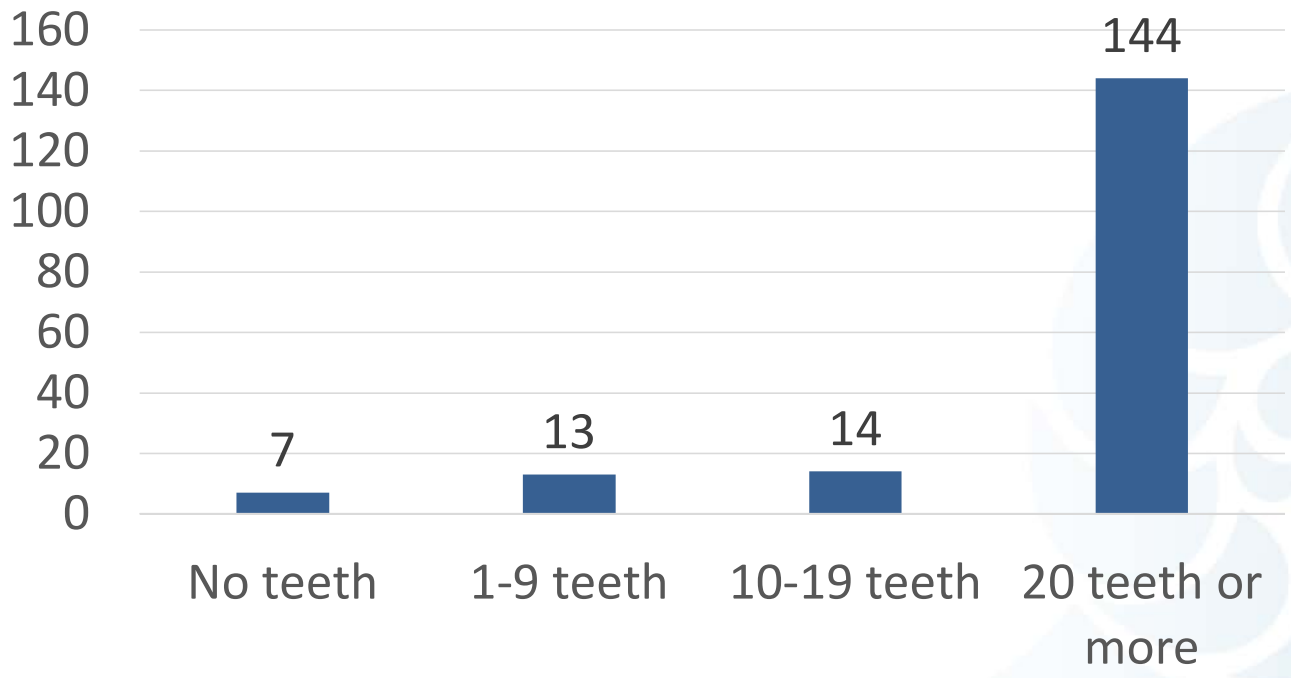
Sample

- One hundred and eighty individuals participated in the survey. The sample size as a whole was composed of middle aged individuals. The age of the participants ranged from 18 to 87 years ($\boldsymbol{M}$ = 38.57, $\boldsymbol{SD}$ = 16.9)

Results

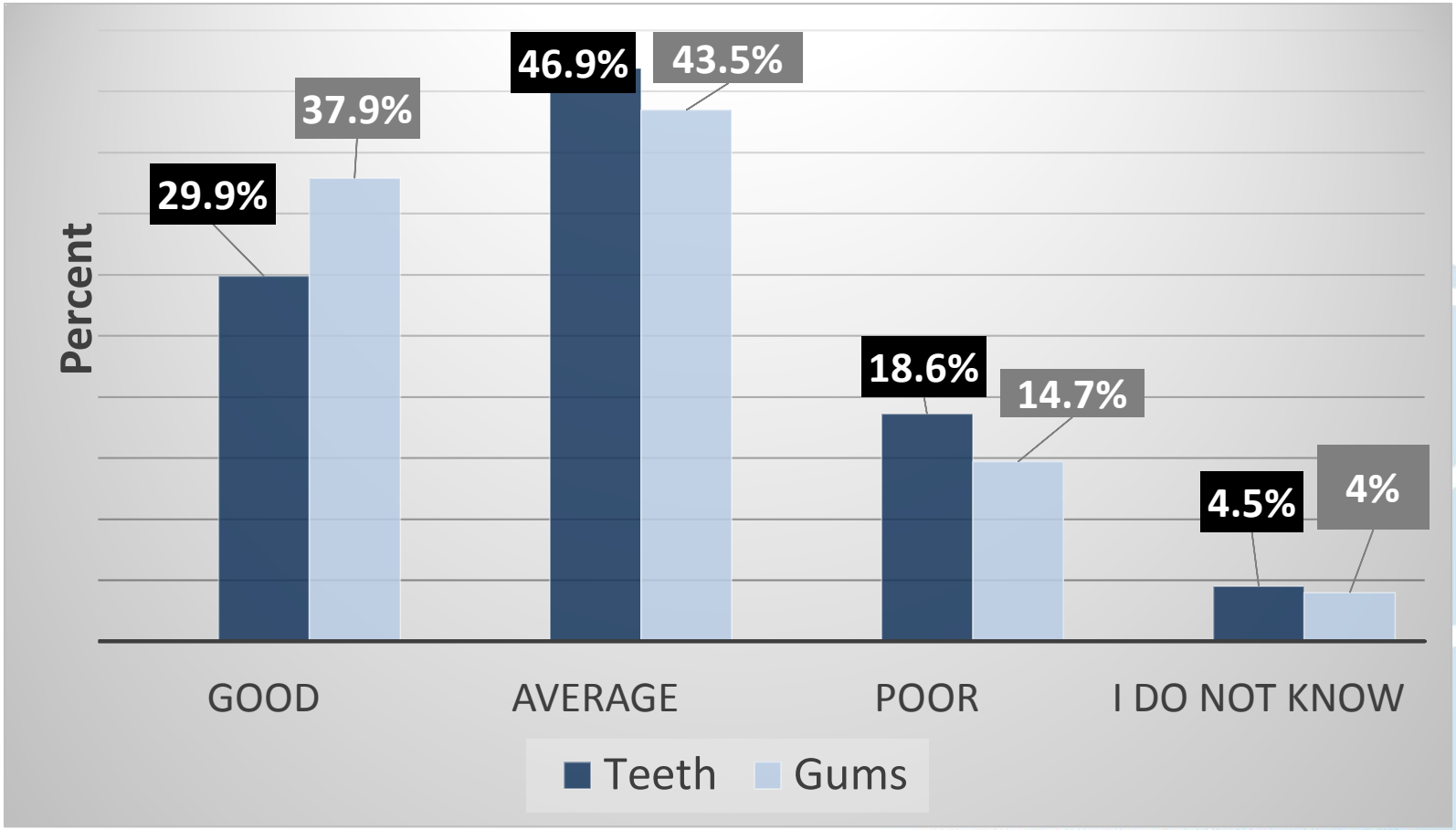
- Seventy two percent of the participants were female . The number of years of education from the participants ranged from 0 to 15 ($\boldsymbol{M}$ = 6.64, $\boldsymbol{SD}$ = 4.09). Twenty four participants (13.3%) reported having no formal education; 78% ($\boldsymbol{N}$=18) of them were female.

Number of teeth



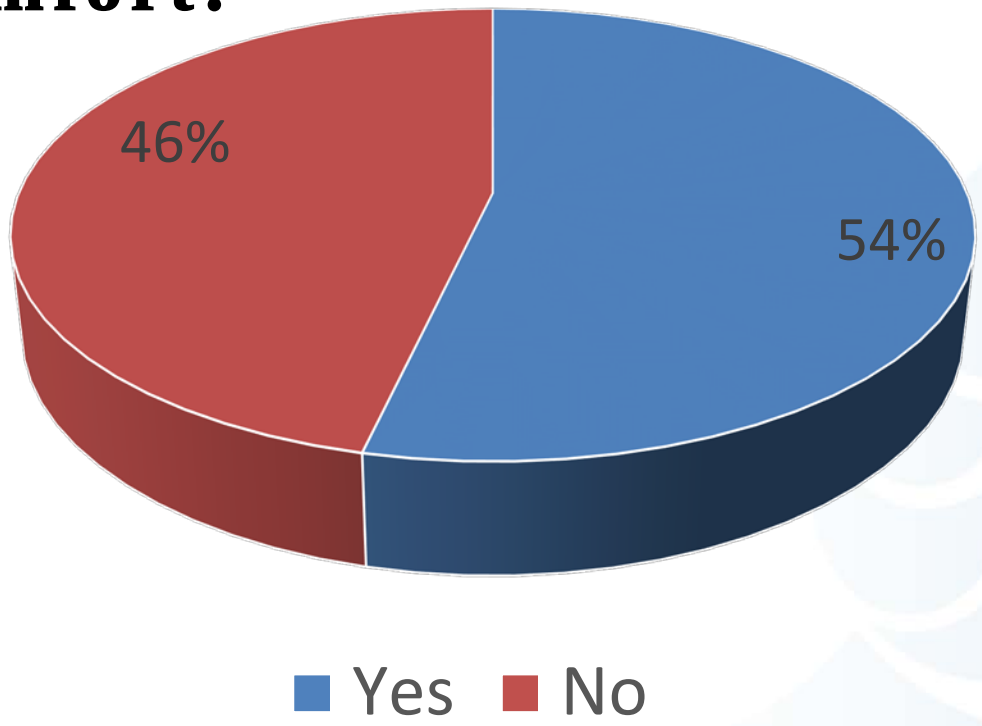
Self-assessed state of oral health

How would you describe the state of your teeth or gums: "good", "average", or "poor"?



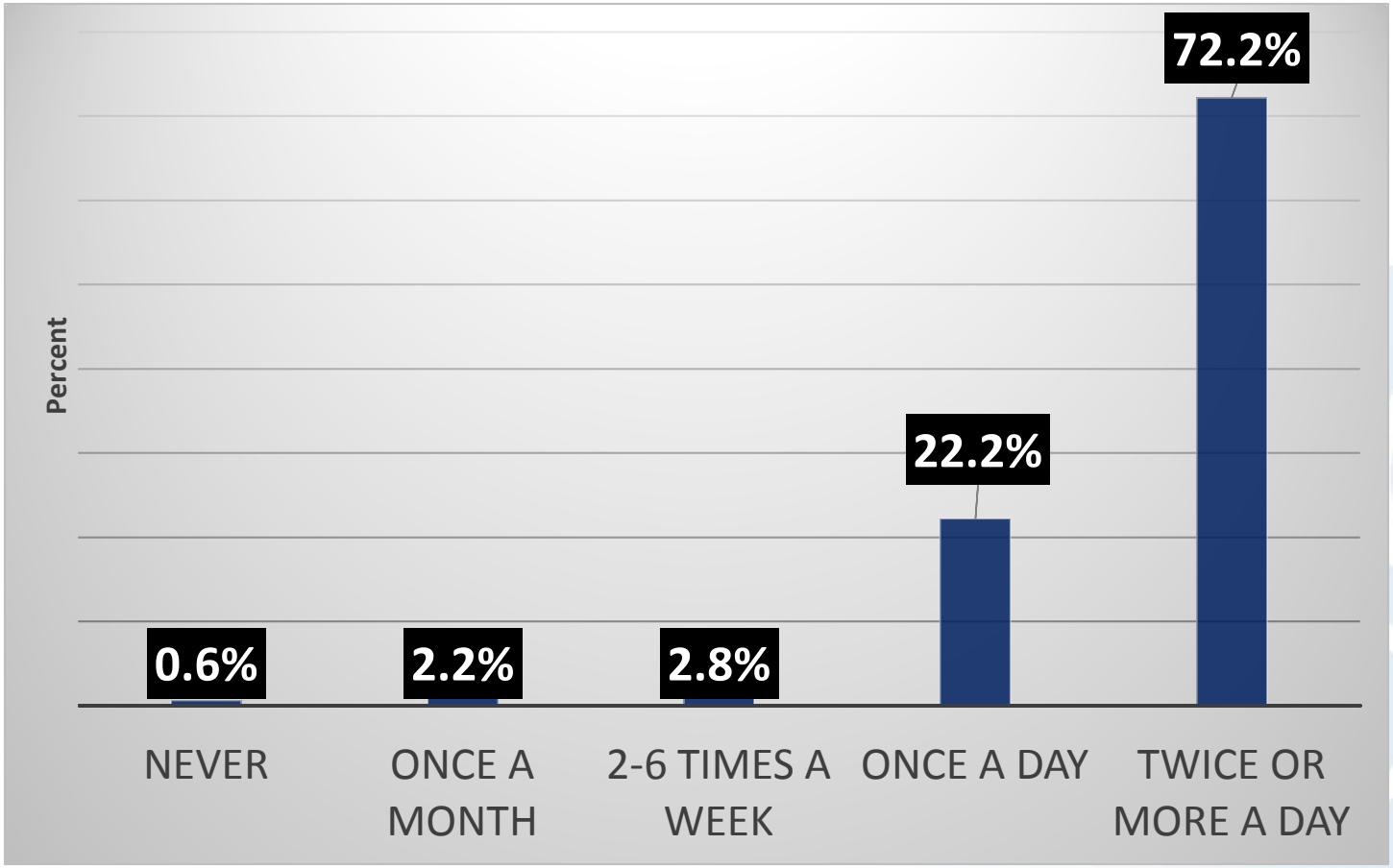
Self-assessed state of oral health

During the past 12 months, did your teeth or mouth cause any pain or discomfort?



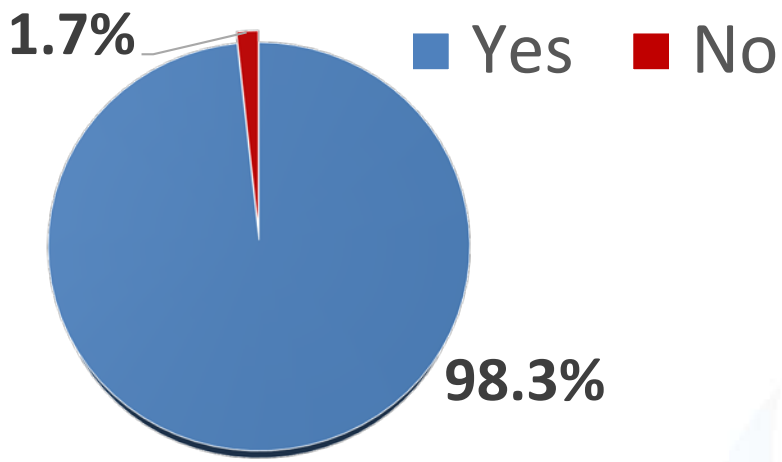
Oral hygiene practices

How often do you clean your teeth?

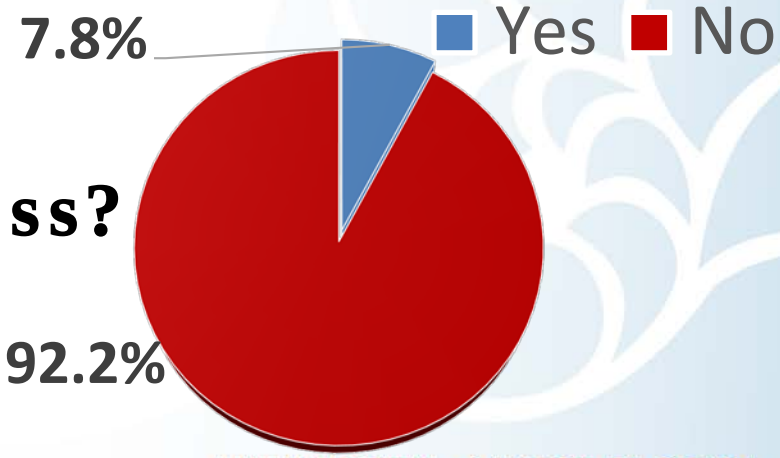


Oral Hygiene Practices

Do you use a toothbrush?

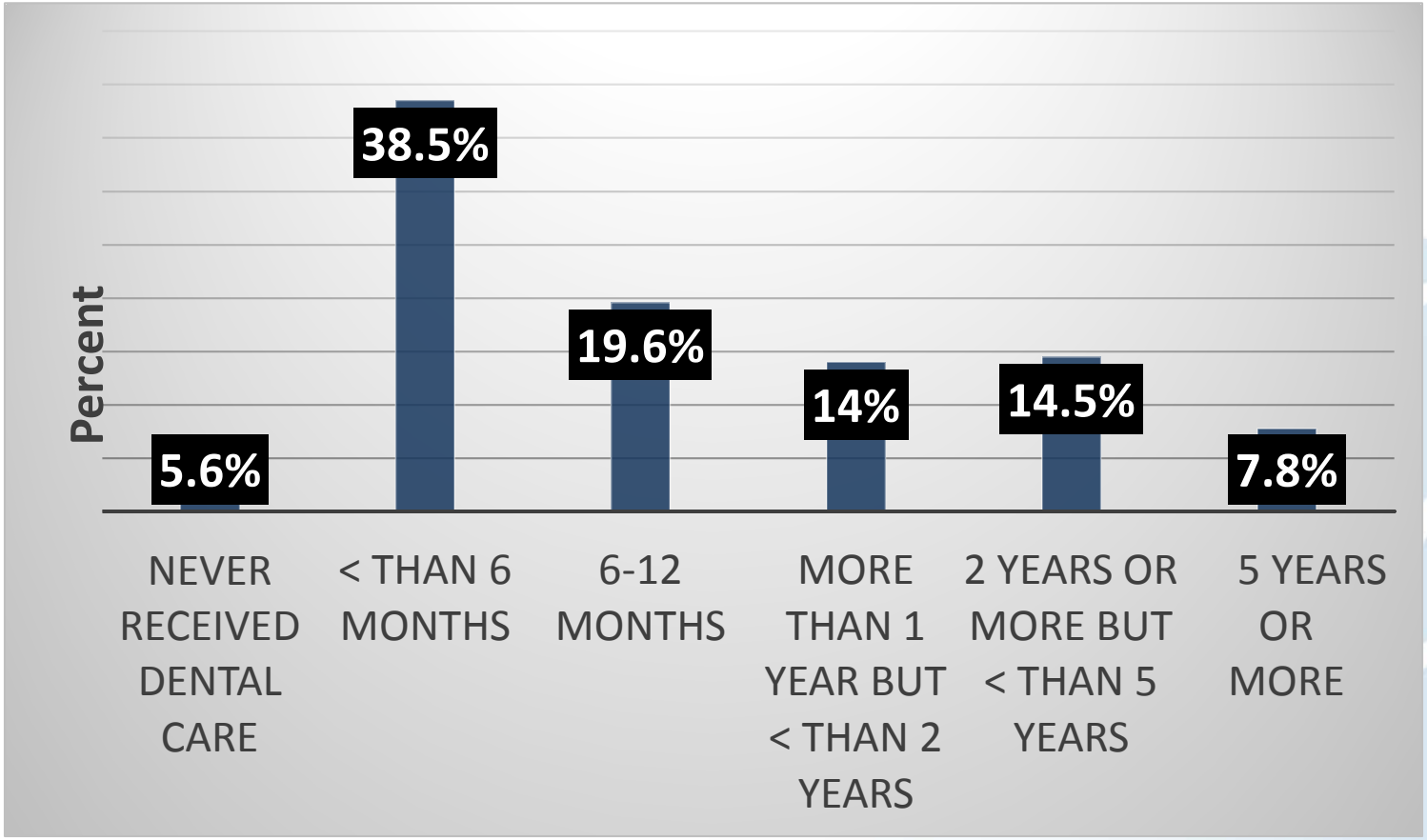


Do you use dental floss?



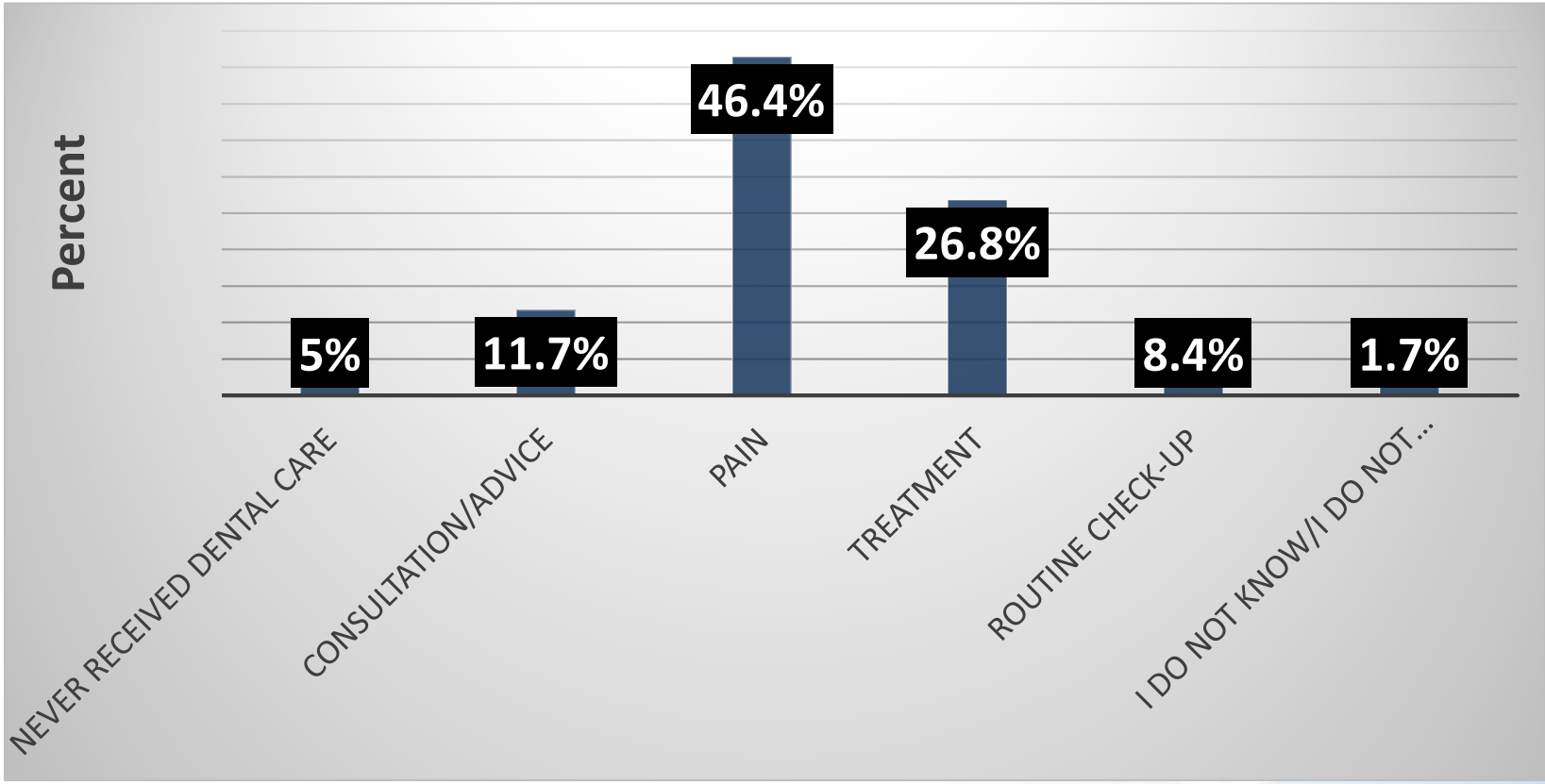
Utilization of Oral Health Services

How long is it since you last saw a dentist?



Utilization of Oral Health Services

What was the reason of your last visit to the dentist?



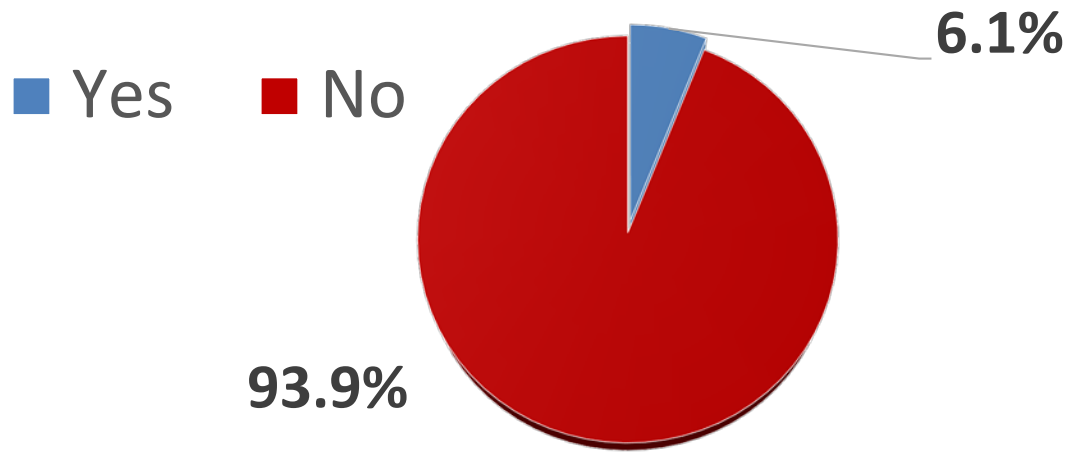
Diet and Nutrition

How often do you eat, drink or chew even in small quantities the following foods/drinks/gum?

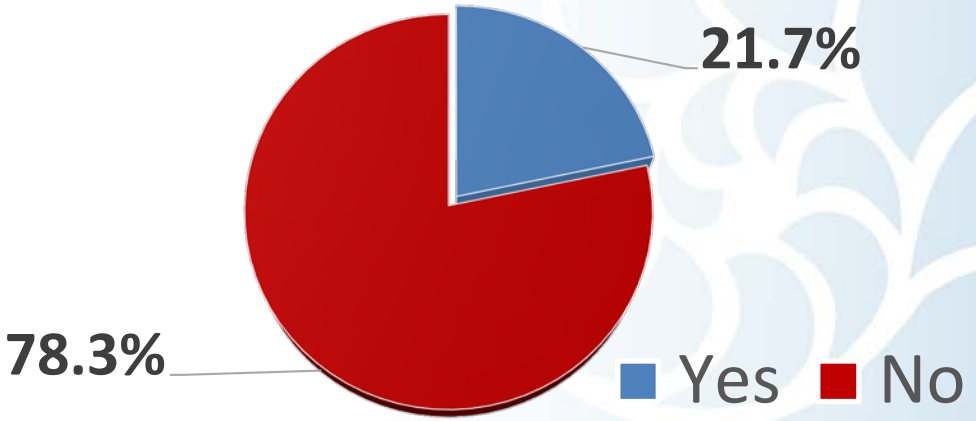
	Fresh fruit	Cakes/ cookies	Bread	Honey, panela, melcochas	Gum	Candy/ chocolate	Ice cream	Soft drinks	Juices or lemonade	Tea with sugar or sugar cane	Coffee with sugar or sugar cane
Seldom/Never	17.8	57.2	13.6	23.9	77.8	75.6	53.6	59.2	14.5	38.5	41.1
Sometime during week	21.7	3.4	44.3	50.6	1.7	2.2	2.2	6.7	47.5	35.2	29.4
Every day	60.6	39.1	42	25.6	20.6	22.2	44.1	34.1	38	26.3	29.4

Tobacco and alcohol use

Do you smoke?



Do you drink?

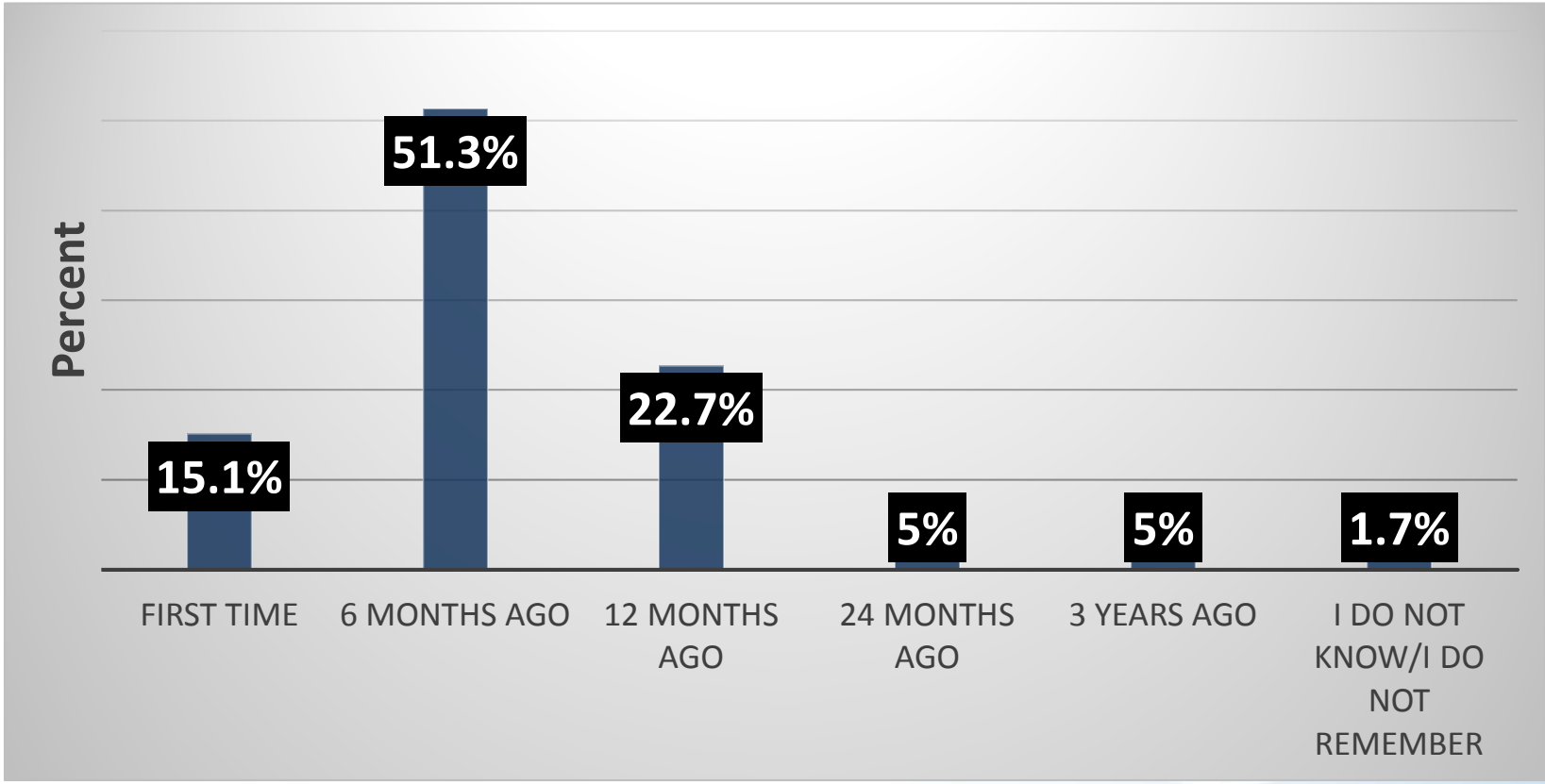


Results Children Assessment

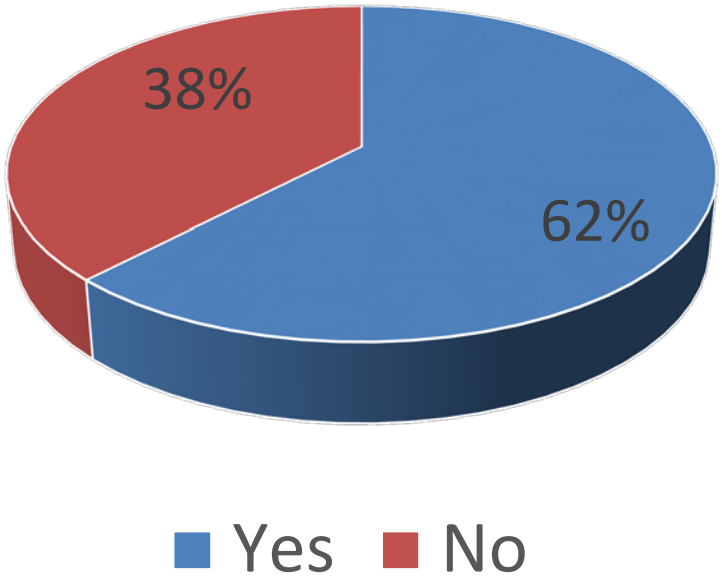
- One hundred and thirty one children 6-12 years old ($\boldsymbol{M}$ = 8.55, $\boldsymbol{SD}$ = 1.88) participated in the assessment.

Risk Factors

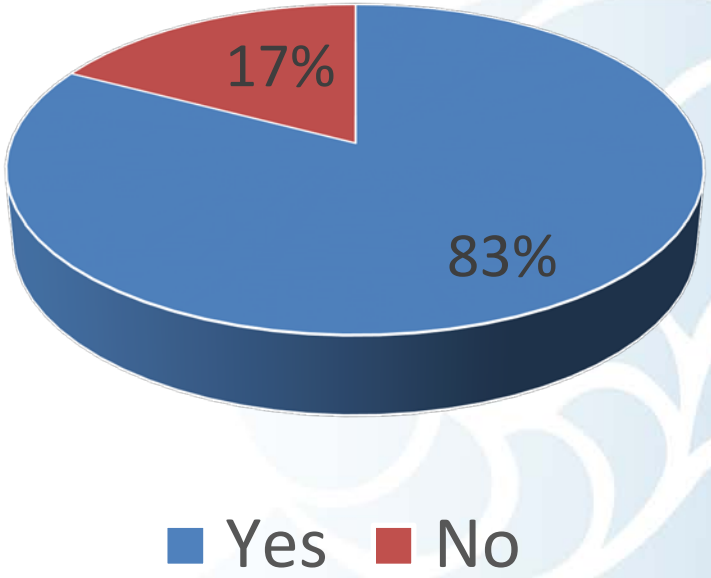
How long ago did the child visit a dentist?



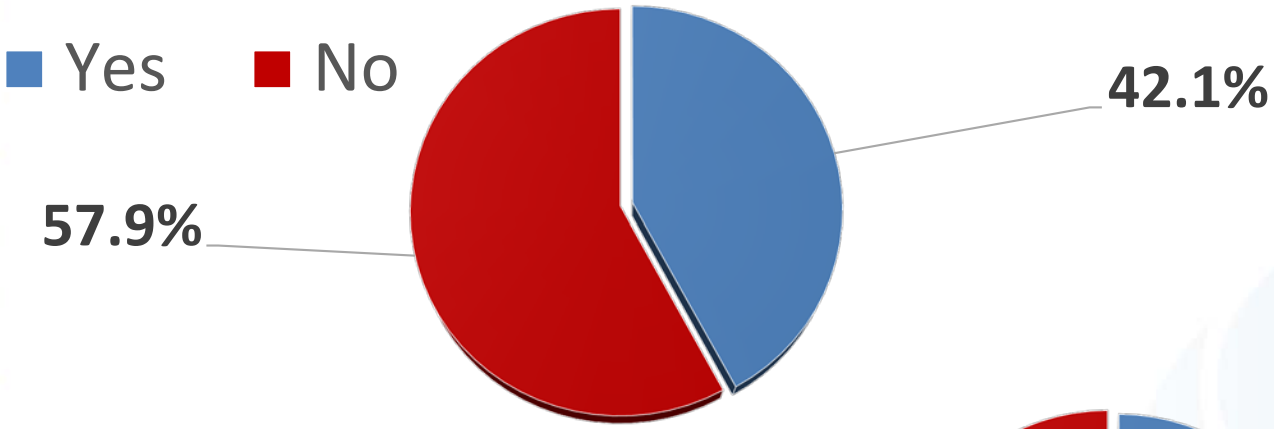
Mother or primary caregiver has a dentist



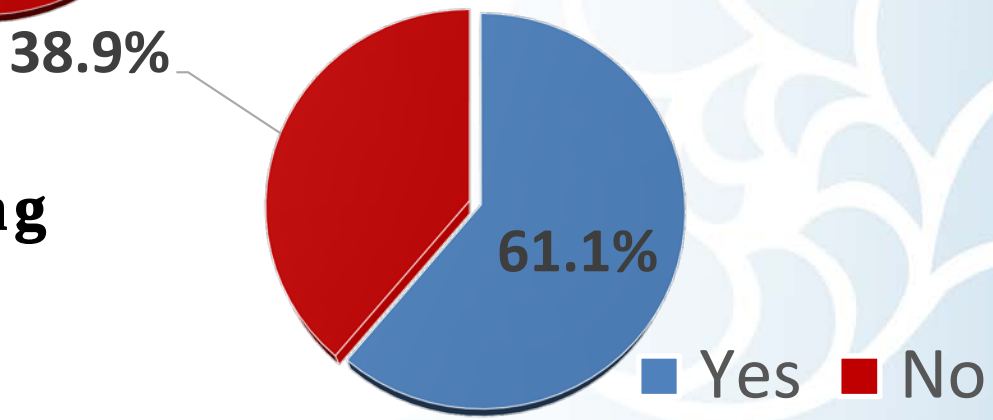
Mother or primary caregiver had active decay in the past 12 months



Continual bottle/sippy cup use with fluid other than water

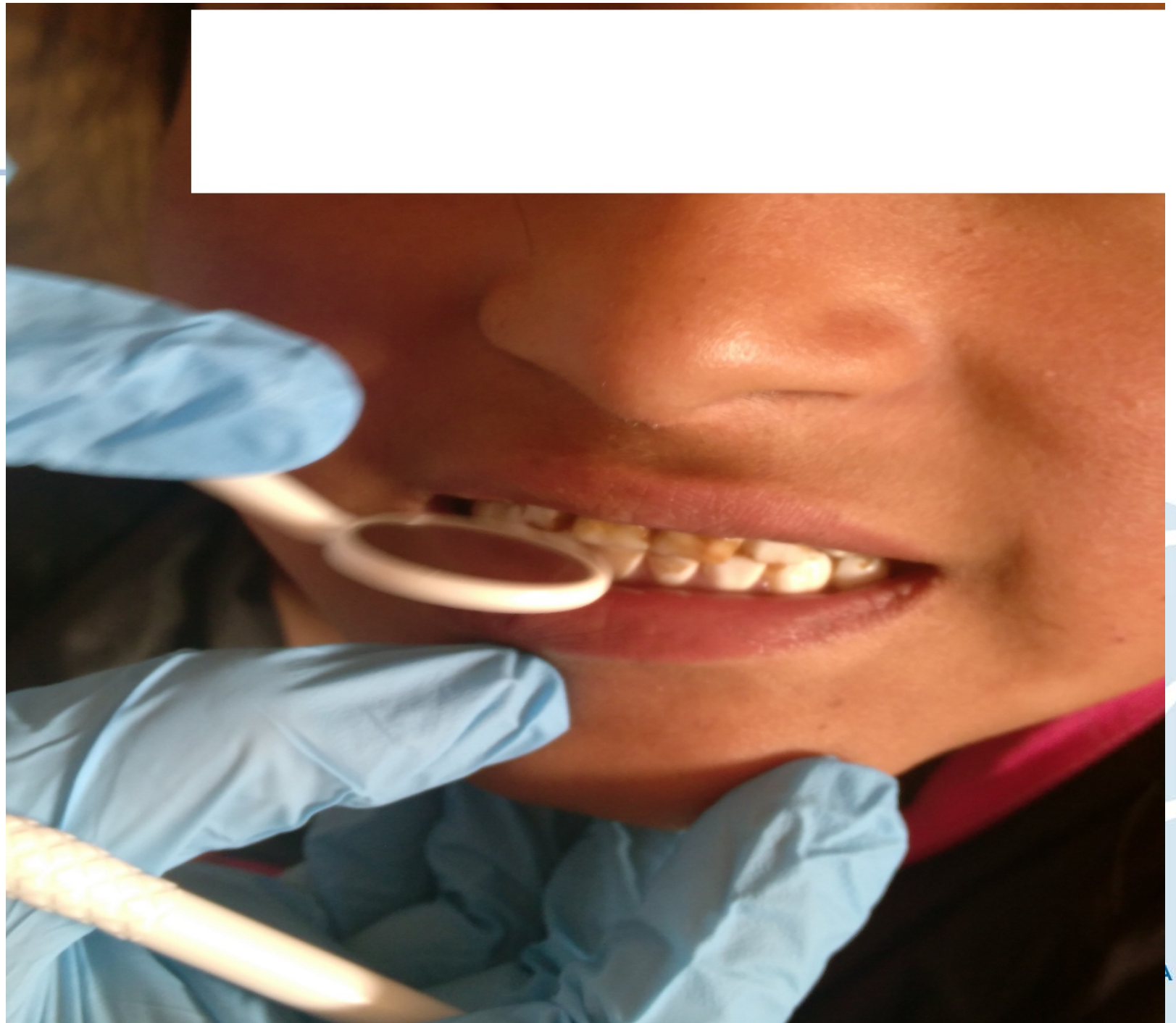


Frequent snacking

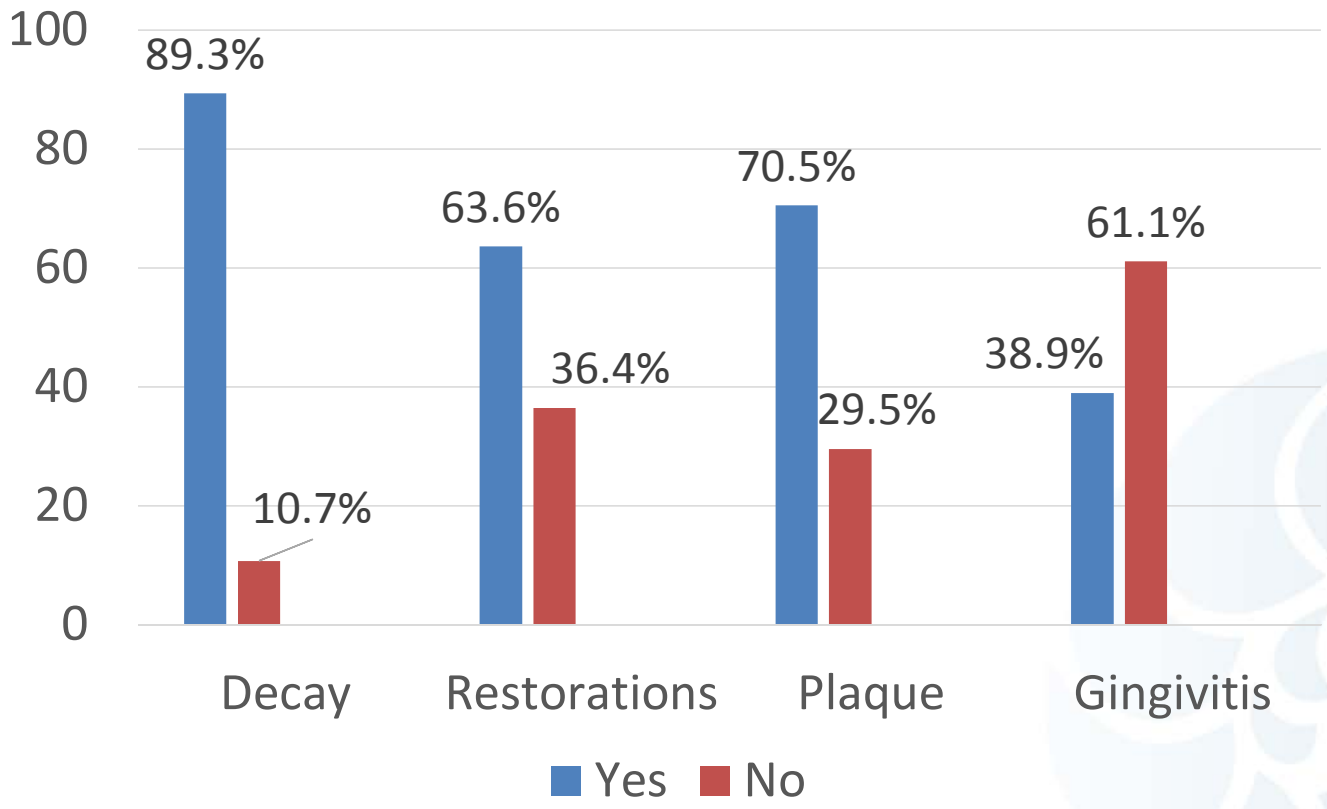


Protective Factors

- Two of the three communities had a health center within 2 miles; however, dental care was not always available. Itulcachi had a health center within 10 miles.
- None of the water systems had been treated with fluoride; however, one of the community water systems had a fluoride level of 4.86 mg/L (normal value= 1.5 mg/L).
- Eighty three percent of the caregivers reported their children brush their teeth at least twice a day.



Clinical Factors



Discussion

- Low level of education, inadequate hygiene practices and underutilization of oral health services.
- Poor prevention practices (dental visits only in response to pain)
- Diet seems to be high in fermentable carbohydrates
- High prevalence of caries among parents/caregivers and children
- Poor feeding practices to children

Discussion

- Although at least two of the communities have a close health center, it is not routinely staffed by a dentist. The third health center is far away from the community.
- No fluoridation in the water systems. No fluoride varnish provided to the children.

Future activities

- ❑ Report findings to communities and authorities.
- ❑ Work with CDC to develop home made devices to reduce the level of fluoride of one particular community water system.
- ❑ Work with USFQ School of Dentistry and MPH faculty and students to provide education about importance of prevention including hygiene practices and use of oral health services.

Future activities

- The USFQ School of Dentistry will send dental teams to provide treatment to the adults and children who participated in the study and will provide topical fluoride treatment to children in the communities that did not have excess fluoride in the drinking water.
- Test water systems on a quarterly basis to see if there are changes in the fluoride levels due to seasonal changes.

GRACIAS!