School-based oral health
“Malimali” program and additional health promotion activities in the Kingdom of Tonga

Ministry of Health
Kingdom of Tonga

Salote Tu’ihalamaka Tu’iniua
“Malimali” Program

“Malimali” in Tongan means “Smile” in English

Let’s smile and be relax together before I start to talk.
The Kingdom of Tonga is located in the middle of the South Pacific and comprises of 177 islands of which 52 islands are inhabited.
Kingdom of Tonga

General information

- Part of Polynesia and neighbors with Fiji, Samoa and New Zealand.
- Population: 105,323 (2013)
- Capital: Nuku’alofa
- Official language: Tongan, English
- Religion: Christianity
- Currency: Pa’anga (TOP)
- Foods: Yam, Taro, Tapioka, Fish, Tropical fruits
- Life expectancy: 76 yrs

- Tonga became known as the Friendly Islands because of the congenial reception accorded to Captain James Cook on his first visit in 1773

Coat of arms
Dental staff in Tonga

- There are 11 Dentists with a Dentist to population ratio of about 1:14,000
- 19 Dental Therapists to the population to working dental personnel is about 1:4,000
- 3 Dental Technicians for Prosthetic
- 2 Dental engineering (for dental equipment)
- 2 sterilizing officer and 3 receptionists

Population:
- Tongatapu Group: 75416
- Vava’u Group: 15,679
- Ha’apai Group: 8,000
- Niua Group: 1932
- ’Eua Group: 5,000
With large families being the norm and young adults often emigrating to benefit from high salaries abroad, one third of Tonga population is under 12 years old.
Education is a core part of Tongan life

Around the age of 12, students are allocated to schools based on their examination results.

Whilst there is a teacher training college in Tonga, most students qualify abroad.
History of Malimali Program in Kingdom of Tonga

- **1998~** South Pacific Medical Team started Malimali Program in Tongatapu and Ha’apai Groups.

- **2007~** Malimali program extended to Vava’u and ‘Eua Groups.

Number of primary schools in each island’s group:
- Tongatapu Group: 130
- Ha’apai Group: 19
- Vava’u Group: 33
- ‘Eua Group: 6
- Niuas Group: 5

Number of primary school students is about 12,000.
The 1st DMFT survey for 12 year-old students in Tongatapu (main land) by Tongan dental team and SPMT-JAPAN in 2000

<table>
<thead>
<tr>
<th>GENDER</th>
<th>Number of students</th>
<th>The prevalence rate of dental caries</th>
<th>Mean DMFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOYS</td>
<td>45</td>
<td>89%</td>
<td>4.40</td>
</tr>
<tr>
<td>GIRLS</td>
<td>21</td>
<td>91%</td>
<td>5.81</td>
</tr>
</tbody>
</table>
To save the children,

• What should we do?
• What can we do for them?
School-based Malimali Program

1. Brushing teeth everyday
2. Fluoride mouth rinsing for 1 minute once a week

Malimali program helps to protect children’s teeth!!
Most families depend on rain water for drinking. Water fluoridation is not available.
Mobile clinic in remote islands

Mobile clinic opens once three months for the people who live in remote islands.

Tooth extraction on the boat.
Dr Sililo Tomiki, started the Malimali program with aid of the South Pacific Medical Team, Drs.Koji Kawamura & Sayuri Kawamura.

Japanese NGO South Pacific Medical Team has helped and supported the program.
School Visiting Program
(Malimali Program)
1. Brushing teeth
2. Fluoride mouth rinsing

We can meet about 700 students / day !
The changes of DMFT of 12 year-old students 7 years after Malimali program started in Tongatapu (main land)

Prevalence rate of dental caries

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>4.4</td>
<td>5.8</td>
</tr>
<tr>
<td>2007</td>
<td>1.84</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Boys: n=45 (89%), n=44 (70%)
Girls: n=20 (91%), n=20 (70%)
Malimali program started as the joint program of Ministry of Health and Ministry of Education. It is the 10th year since Malimali program has been implemented in Vava’u.

The program has been a part of regular educational program since 2014. Teachers have become very corporative in these days.
Elder boy teaches younger boy how to brush teeth properly

Children are great!

G.P.S. Tu’anukivale
School Visiting Oral Health Program

- Dental staff teach children at school.

  - Children teach children.

  - Children teach adults at home.

Good habit spread from children to children and children to adults.
How to keep the bottles and tooth brushes
Malimali Program in Preschools

- Tooth brushing instruction
- Fluoride mouth rinsing 0.05% NaF (5mls), 30 sec

It’s so easy, but worth to do if we keep doing! Prevention is better than cure.
Malimali Program has been on the **Second** phase since 2013.

- Toothbrushing everyday at school instructed by dental staff
- Fluoride mouth rinsing once a week instructed by dental staff
- Delivering fluoride every week
- Instruction of toothbrushing, **fluoride mouth rinsing**, **hand washing** and **exercise** by dental staff once in a week.

Dr. Sisilia Fifita is the chief in charge of Malimali program of all of Tonga.
Four JICA (Japan International Corporative Agent) volunteer have worked with us in Vava’u Malimali program in the past.

Takako (2007-2009)

Masako (2012-2014)

Ai (2009-2012)

Misaki (2014-2016)
The acquired good eating habit with good teeth and oral function in their childhood will prevent from suffering life-style related diseases and might be a guarantee on the future healthy life.
Future plan

• Starting earlier prevention for pregnant women (minus 1 year old) (cleaning, scaling etc.)
• Oral survey for Class 1-6 students in GPS
• Mobile Clinic for the children living in the outer islands
CONCLUSION

- Malimali Program in Tonga contributed to improving the children’s oral condition in 6yrs to 12yrs old, and habit of tooth brush, habit of healthy diet and it is important to promote oral health care strategies for school children life style in Tonga.
Thank you very much for your attention.

Malimali Program at Neiafu G.P.S.