

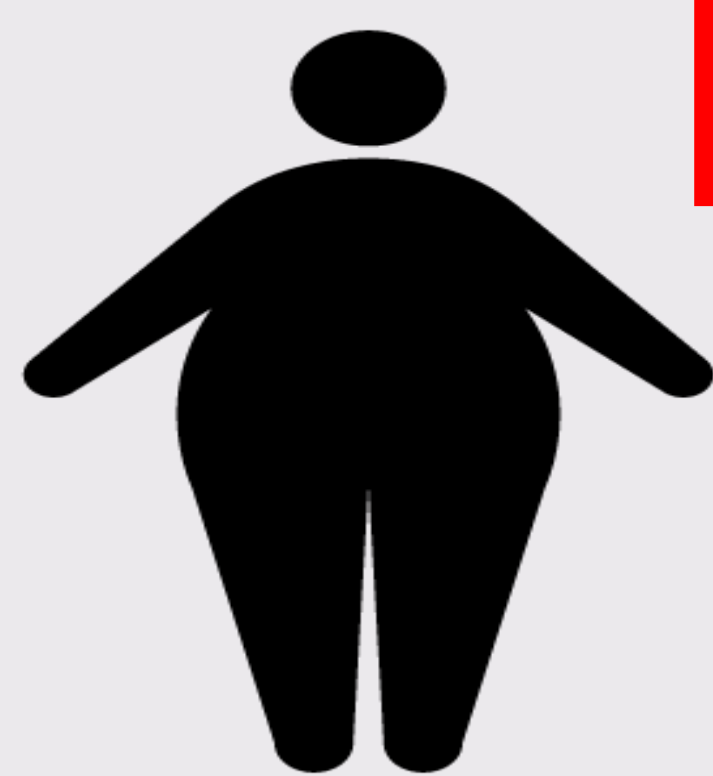
The Three Stages Toward Reducing the Risk of Obesity in Palau

2807 Takatsuki Junior and Senior High School

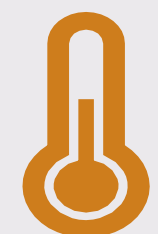


Background

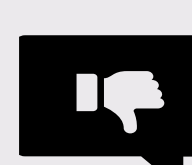
Palau has the fourth highest obesity problem in the world.



TOO HARD



High-temperature and humidity



No interest in Exercise

Obesity Prevention Exercises

(Examples of exercise to do in a day)

Biking
5miles
In 30min



Swimming
laps for
20min



Walking
2miles
In 30min



30min

Moderate-intensity aerobic physical activity



World Health Organization

Fertility Rate

1st	American Samoa	65.3%
2nd	Nauru	64.8%
3rd	Cook Islands	60.8%
4th	Palau	60.5%
5th	Marshall Islands	59.0%
6th	Tuvalu	57.9%
7th	French Polynesia	56.9%
8th	Niue	56.8%
9th	Samoa	56.6%
10th	Tonga	56.1%

NCD RisC(2014)

Where is Palau ?



Hypothesis

STAGE 1
Easy Exercise

STAGE 2
Self-Motivated Exercise

STAGE 3
Moderate-intensity aerobic physical activity

All the People in Palau need to know.

Merit of "Radio Exercise"

1. Less stress on the body.
2. Move every muscle and joint.
3. Activates the internal organs.

Research Question

How elementary school students in Palau can build lifelong exercise habits and take the three steps?

Be aware of the body parts to move
-To get the full effect of exercise-

According to interviews with experts

Solution

Radio Exercise

Gymnastics Correctness Assessment System (with Deep Learning)

How to Work (Prototype System)

- 1 Take a video → Output body part coordinates. "OpenPose" library
- 2 Analyze the video with "Gymnastics Correctness Assessment System"
 1. Output body part coordinates.
 2. Determine the motion from the coordinates using a predetermined conditional formula.
- 3 An evaluation sheet is output.

The sheet describes whether the gymnastics is done correctly or not.

Performing the **correct** radio exercises achieves **20%** of the physical activity in a day. (Calculated based on "Physical Activity Guidelines for Americans 2nd edition")

EVALUATION SHEET

Moving	score	Advice
Stretching exercises	80%	Ⓞ Hands are well extended. ▲ Legs should be spread about shoulder-width apart. ★POINT★ Imagine sticking your right hand to your ear.

Interest in Physical Activity

Original Gymnastics Creation Game

How to Play (Prototype model)

- 1 Draw a card.
- 2 Put the cards on the gymnastics creation sheet.
- 3 Practice the exercises.
- 4 Put it on the card on "Body Check Sheet".
- 5 Find the areas that need to be strengthened through gymnastic. Pick a card to fill all slots.

Making Synergies
Ms. Michiko TOYAMA
• Grade 1 radio gymnastics instructor
• PE teacher
• Writer

Demonstrations

Feedback



Ms. Yurika SAEKI
JICA 2014 Tertiary Corps and Physical Education



The level of physical education in Palau is not high. This system would be effective for all children.

NOTE

- The Ministry of Health
- The Ministry of Education

I will also get feedback in coming online fieldwork.



It's really fun to do our own exercises. (Elementary school children)

I'm sure the children in Palau will also enjoy working on it, being aware of the parts they move.



We can learn each exercise correctly. (Junior high school student)

Even middle schoolers can have fun! (Junior high school student)

Conclusion

Knowing about the importance of exercise and motivating people to exercise throughout their lives, starting in elementary school will make it possible for everyone to achieve the WHO goal in physical activity.

This study also contributes to the achievement of the following SDGs.

"Reduce by one-third pre-mature mortality from non-communicable diseases (NCDs) through prevention and treatment, and promote mental health and wellbeing" (SDGs 3)

3 GOOD HEALTH AND WELL-BEING

