



Master of Public Health Thesis Research and Field Experience Presentation

“ Is lifestyle modification effective for glycemic control among type 2
diabetes mellitus (T2DM) adult patients
in Southeast Asia? ”

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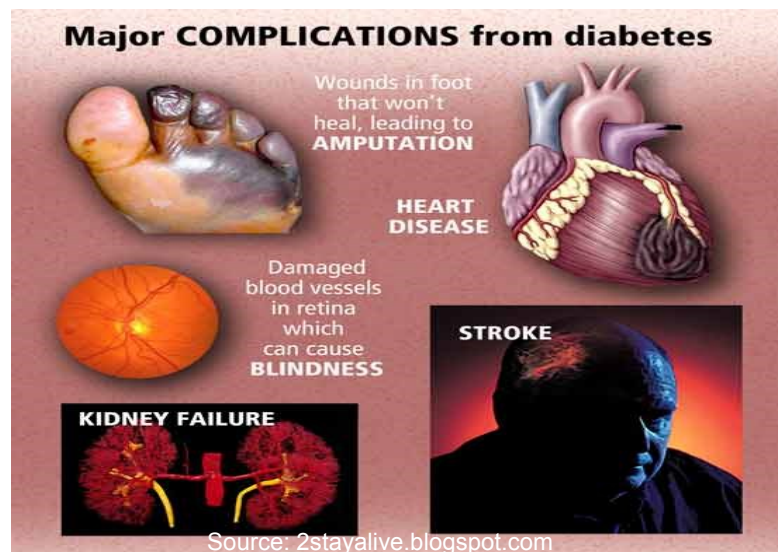
Background

- T2DM- a burdensome lifelong disease
- Glycemic control is paramount

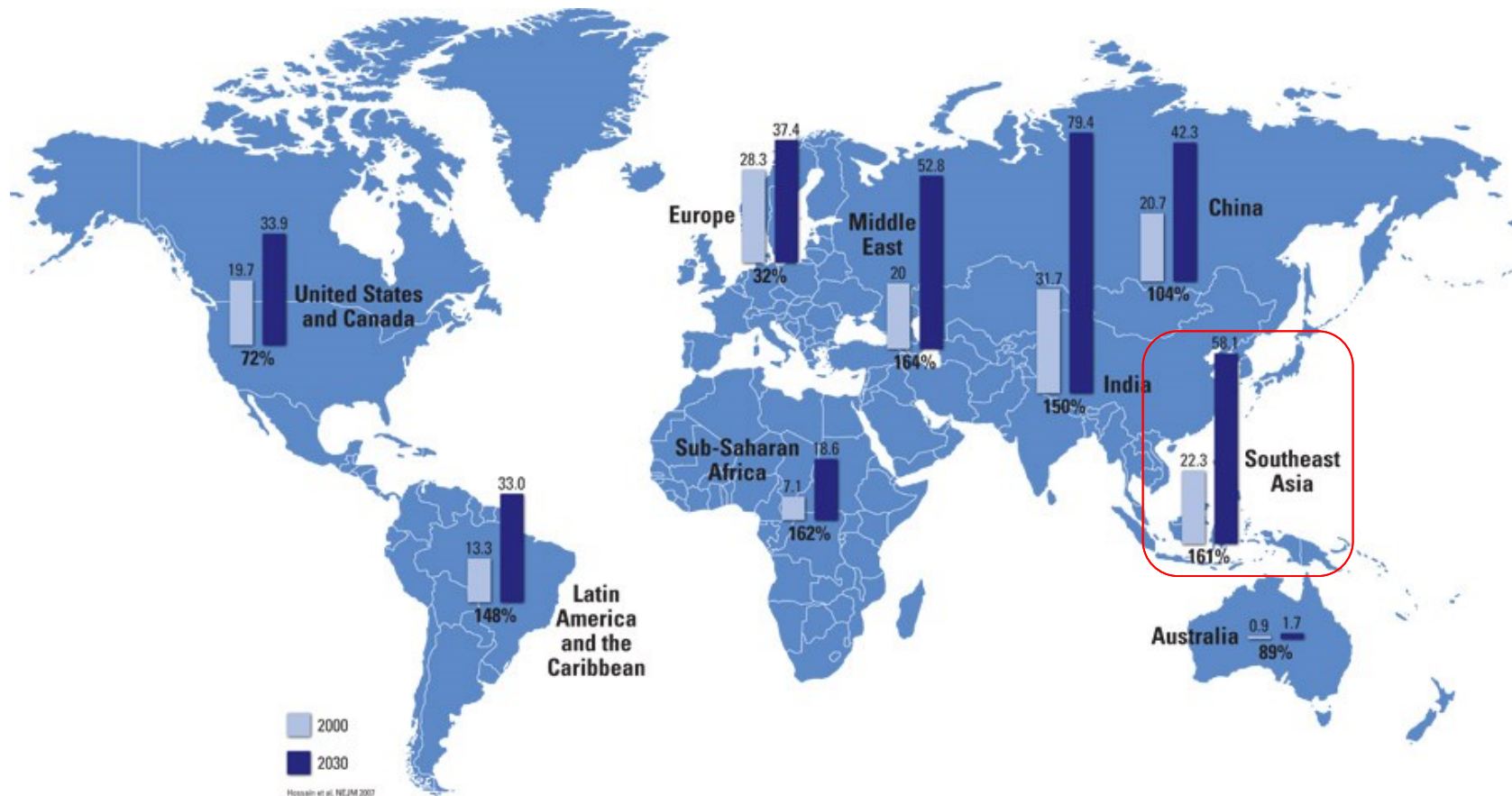
Year	Million people	% of world population
2010	285	6.40%
2030	439	7.70%

Countries	% increase by
Developed countries	20%
Developing countries	69%

(Shaw et al. 2010)¹



Diabetes- A growing challenge



In Southeast Asia, the prevalence of T2DM is forecast to increase by **161%**² from 2000 to 2030 (Hossain et al. 2007)

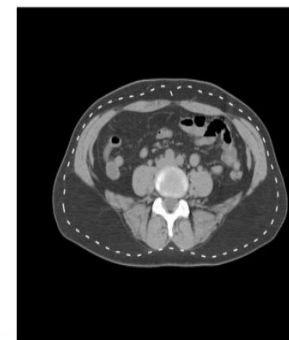
Background (continued)

- Advice on diet and exercise are important part of treatment of T2DM³ (Orozco et al. 2008)
- Adoption of healthy lifestyle may provide protective effect associated with T2DM⁴ (Stampfer et al. 2000)
- Although there are some review literature, they are mainly in Western population
- A dearth of **review evidence** for Southeast Asians who have greater risk of T2DM



Background (continued)

- Differences in diet, physical activity and body composition
- **Asians** have a higher abdominal fat compared to **Caucasians**⁵ (Wulan et al. 2010)
- A lower rate of fat metabolism during exercise → lipid accumulation → insulin resistance⁶ (Lesley M. L. Hall, 2010)
- Insulin resistance, increased abdominal or visceral fat are seen even in **non-obese Asian populations**. T2DM ↑ in **native and migrant Asian** populations than in **white populations**⁷ (Ramachandran et al. 2010)



Background (continued)

Socio-economical aspect

- Mainly developing countries

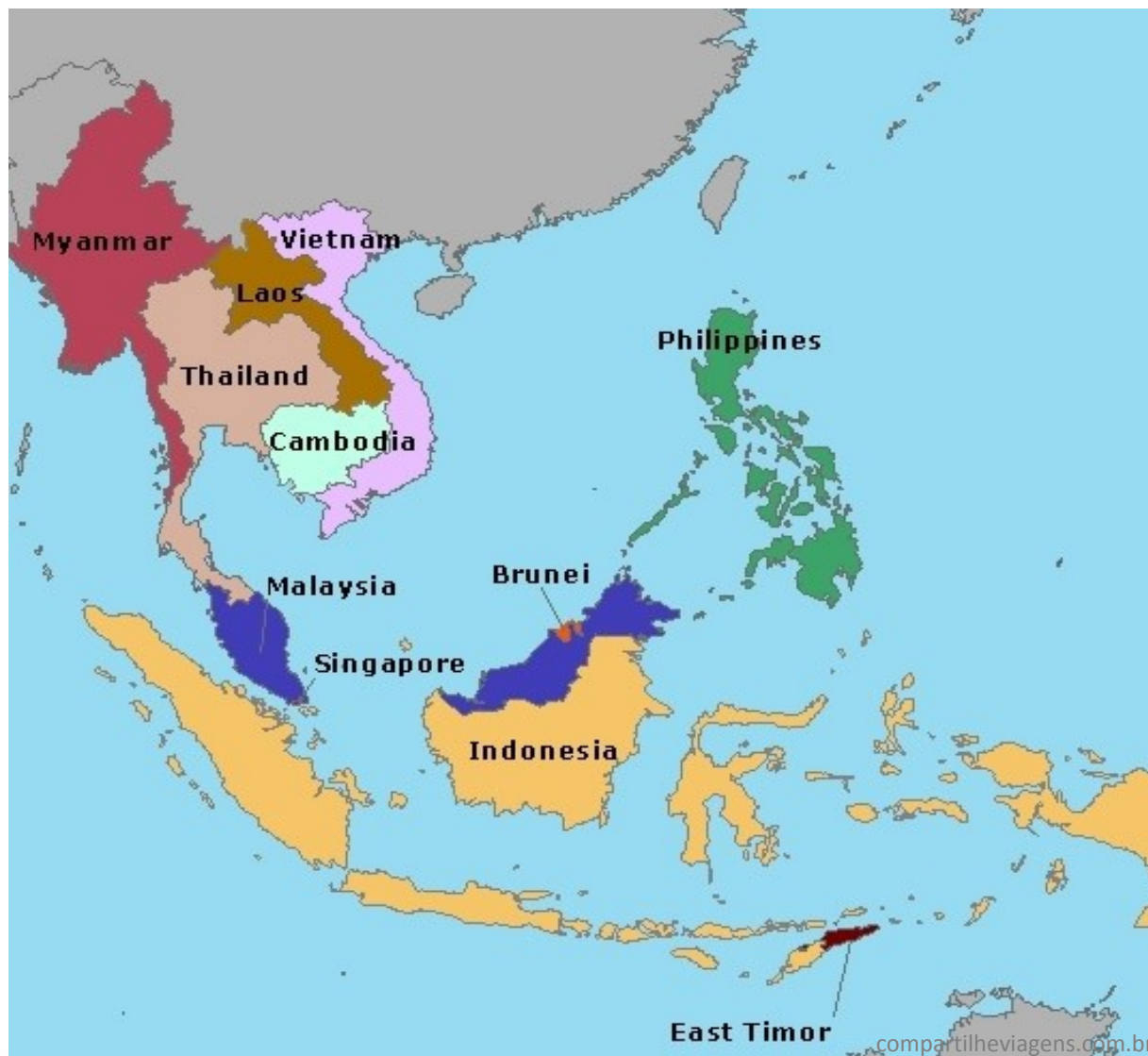
Indicator	Philippines	Malaysia	Thailand	Indonesia	Cambodia	Lao PDR	Vietnam	Myanmar
Total population (millions)	86 264	26 114	63 444	228 864	14 197	5 759	86 206	48 379
Gross national income per capita (international dollar)	3430	12 160	7440	3310	1550	1740	2310	510
Life expectancy at birth (M/F)	64/71	69/74	69/75	66/69	59/65	59/61	69/75	57/63
Total expenditure on health per capita (international dollar; 2006)	223	500	346	87	167	85	264	43

^aSource: WHOSIS (World Health Organization Statistical Information System); select indicators. <http://www.who.int/whosis/whostat>; Accessed January 23, 2010.

More than 80% of **diabetes deaths** occurs in **low- and middle-income** countries, and WHO projected diabetes mellitus would be **7th leading cause of death** in 2030.¹³

www.freeworldmaps.net

Southeast Asia Countries



- Lifestyle condition⁸
 - ✓ food insecurity
 - ✓ nature of work
 - ✓ lack of opportunity to exercise
- Current health policies and program throughout SEA emphasize curative medicine, **↑ prevalence of chronic and degenerative diseases**⁸
- **Lack of evidence base** to assist in future planning to allow government health services to respond appropriately⁸
- **Need more research** on appropriate mix of health services – demographic and epidemiological changes⁸
(Manderson et. al 2010)

Objective

To systematically review literature on the effectiveness of lifestyle modification interventions for glycemic control in T2DM patients from Southeast Asia.



Is lifestyle modification effective for glycemic control among type 2 diabetes mellitus (T2DM) adult patients in Southeast Asia?



Methods

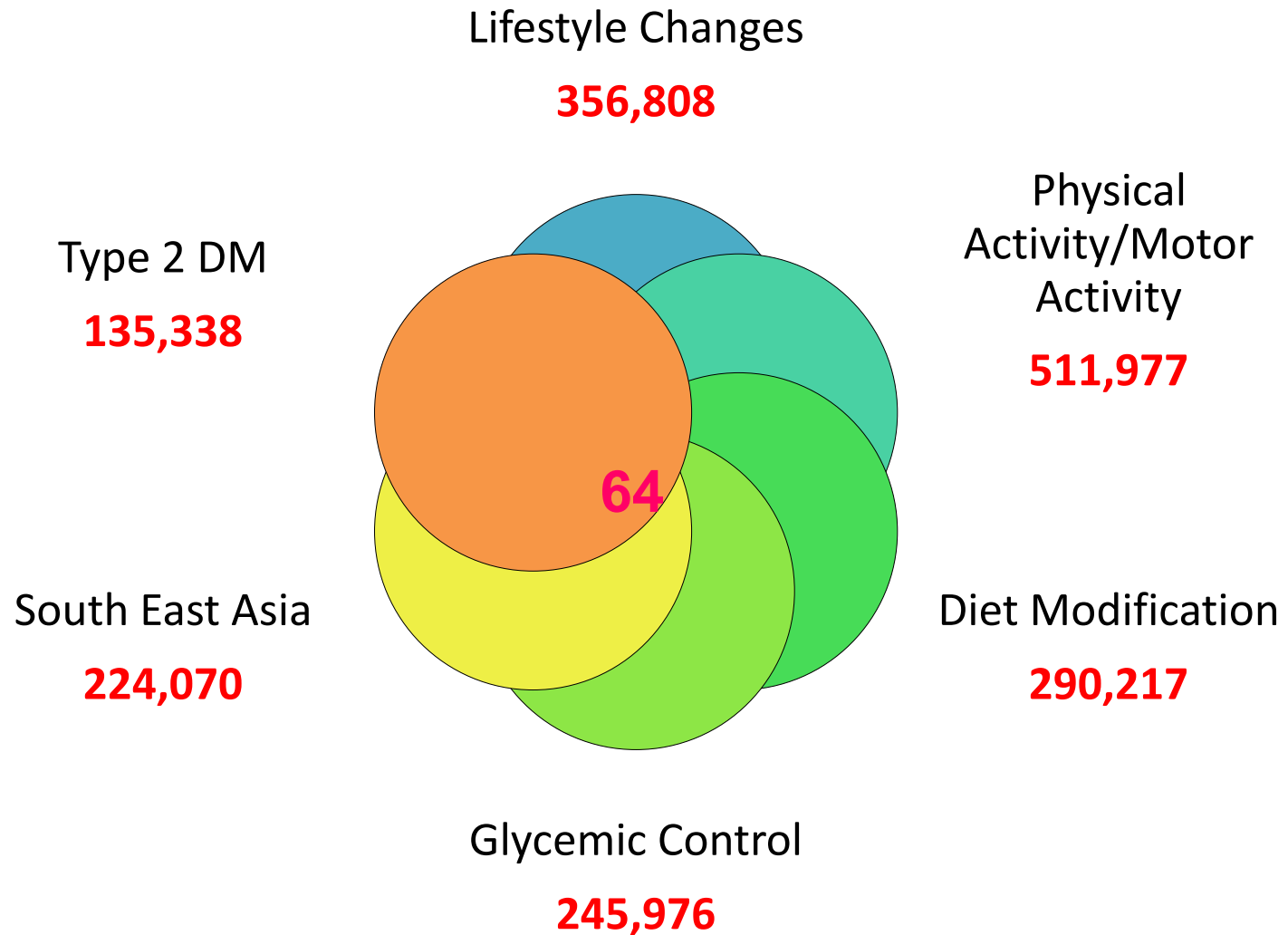
- Selected and review randomized controlled trials (RCT)
 - Interventions >8 weeks
 - HbA1c and/or blood glucose
- Database:
 - Cochrane Library, CINAHL, Pub Med, ProQuest, Science Direct, Scopus, SPORTDiscus and Web of Science
- Meta-analysis
 - RevMan5
 - Standardized Mean Difference (SMD) / Effect size
 - Mean Difference (absolute value)
 - Random effect model (RE)

Eligibility criteria

	Inclusion Criteria	Exclusion Criteria
P (Population/ patient)	•Type 2 diabetes patients • Adult patients (Age $\geq$ 19 years) •From South East Asia Countries	•Diabetes insipidus •Gestational diabetes •Type 1 diabetes •Not from Southeast Asia countries
I (Intervention/ exposure)	•Lifestyle modification •Physical Activity •Diet modification	•Studies without any of lifestyle modification (or) physical activity (or) diet modification •Intervention for different purposes other than diabetes mellitus
C (Comparison)	•Lifestyle modification •Physical Activity •Diet modification	• Without control group •Pharmaceutical comparisons •New drug efficacy
O (Outcome)	•Glycemic control •HbA1c •Blood glucose level	

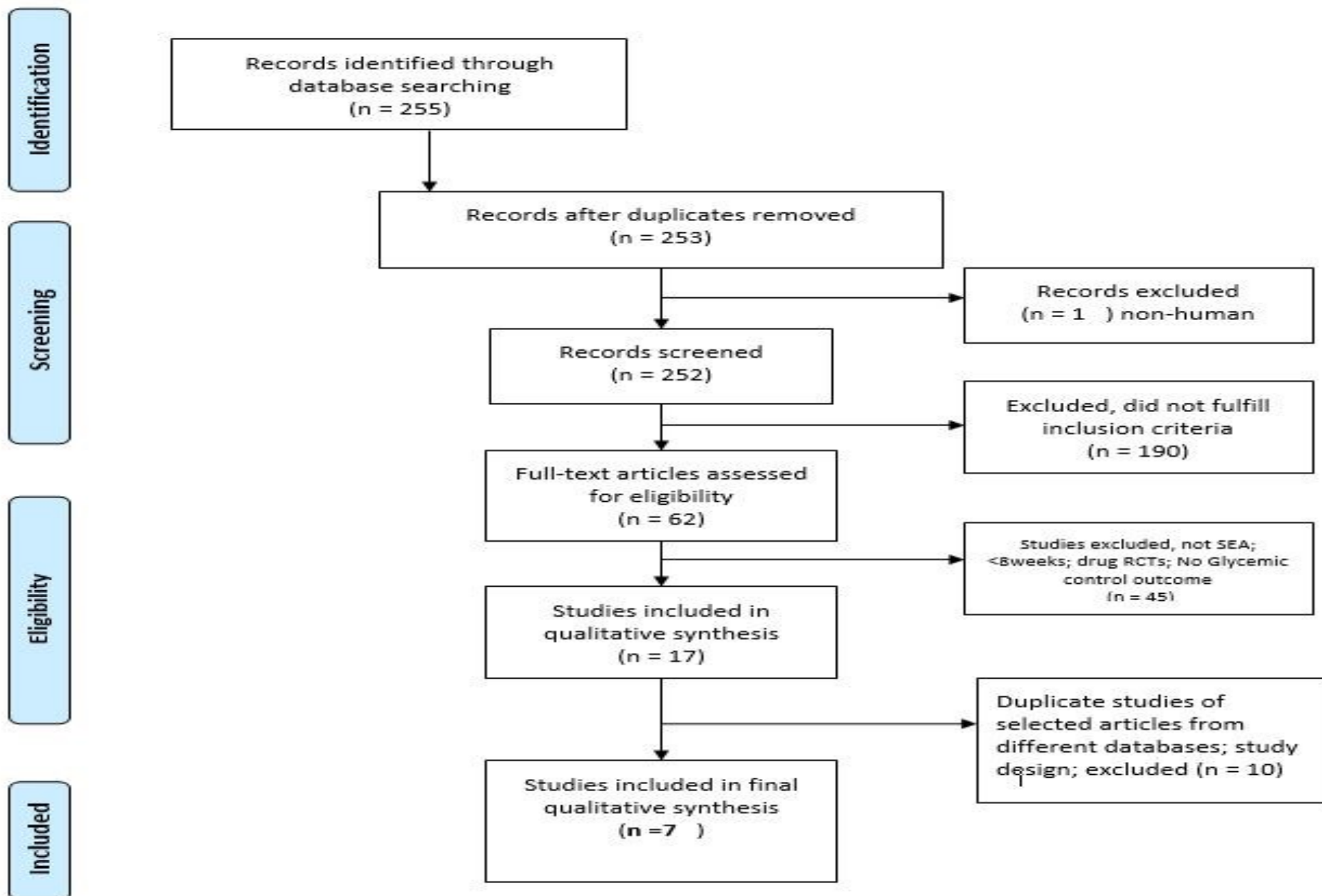
Results

Search Result in Pub Med



PRISMA

(Preferred Reporting Items for Systematic Reviews and Meta-Analyses)⁹



Summary of review studies

Study name	n	Diet	Physical activity	General lifestyle modification	Study Country of Origin	Duration of intervention	Glycemic control measurement	
Wattana et al 2007 ¹⁴	147			1	Thailand	24 weeks (6months)	HbA1c	
Keeratiyutawong et al 2006 ¹⁶	81			1	Thailand	6 months (3 mth, 6 mth)	HbA1c	
Youngwanichsetha et al 2013 ¹²	64		1		Thailand	12 weeks	HbA1c	FBS
Yusof et al 2009 ¹¹	104	1			Malaysia	12 weeks	HbA1c	FBS
Tan et. al.2011 ¹⁰	164			1	Malaysia	12 weeks	HbA1c	
Wattanakorn et al 2013 ¹⁷	76	1			Thailand	13 weeks		FBS
Mitranun et al 2014 ¹⁵	43		1		Thailand	12 weeks	HbA1c	FBS
Mintranun et al 2014 (a)					Thailand	12 weeks	HbA1c	FBS
	679	2	2	3				

Assessment of risk of biases of the randomized trials²¹

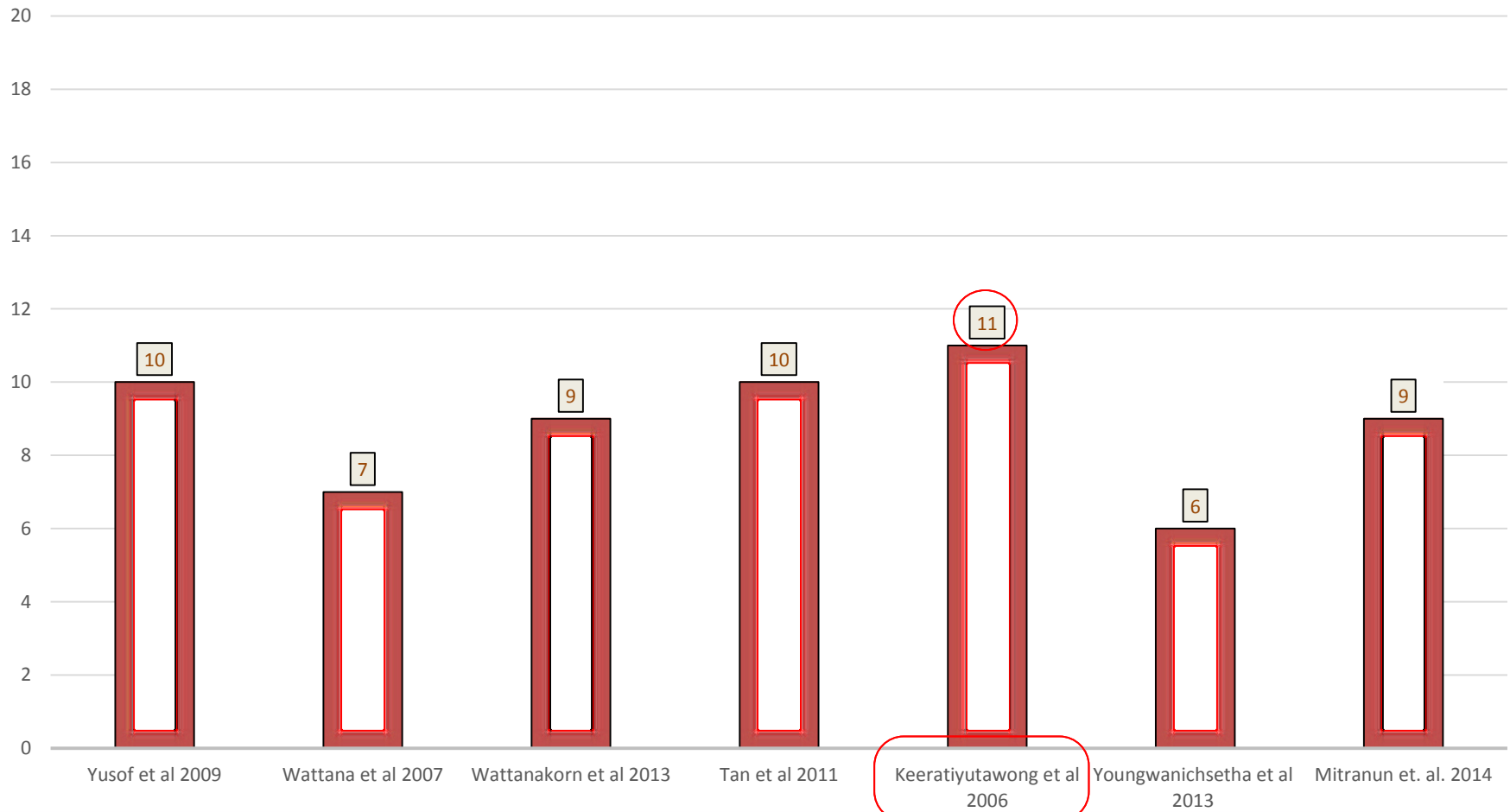
Criteria / checklist of items for reporting trials of non pharmacologic treatments (adapted from Consolidated Standards of reporting trials)

	Yusof et al. 2009	Wattana et al. 2007	Wattanakorn et al 2013	Tan et al 2011	Keeratiyutawong et al. 2006	Youngwanichsetha et al. 2013	Mitranun et. al. 2014	Total assessed scores
Participants (detailed inclusion/exclusion criteria)	1	1	1	1	1	1	1	7
Interventions	2	1	1	1	2	1	1	9
Quality of random assignment:	2	1	1	2	0	0	1	7
Blinding:	1	1	1	1	1	1	2	8
Results:	1	1	1	1	1	0	1	6
Implementation of intervention:	0	0	0	0	0	0	0	0
Baseline data:	1	1	1	1	2	1	1	8
Numbers analyzed:	0	0	0	0	0	0	0	0
Outcomes and estimation	0	0	2	1	2	1	0	6
Interpretation:	2	1	1	2	2	1	2	11
Risk of bias scores 	10	7	9	10	11	6	9	62
Total scores	20	20	20	20	20	20	20	140

Risk of Bias Scoring
0 = low risk
1= unclear risk
2= high risk

Assessment of risk of biases of the randomized trials

RISK OF BIAS SCORES

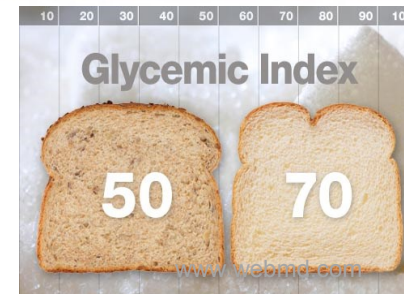


Interventions : dietary modification

Glycaemic Index of Foods ²²²

Low GI (<55)	Intermediate GI (56-70)	High GI (>70)
Sponge cake, plain	Pastry	Waffles, doughnut
Unsweetened apple/carrot/orange juice	Soft drinks (carbonated & sugar) Cordial drink	Sports drink
All bran breakfast cereal	Instant porridge Wheat biscuits	Cornflakes
Brown rice	White rice Basmati rice Capati Idli	Jasmine rice Glutinous rice
Full fat milk Skim milk Low fat milk Yogurt Soy milk	Ice cream Sweetened condensed milk	
Apple Banana Grapes Mango	Papaya Pineapple	Dates Lychee Watermelon
Baked beans Chickpeas Lentils Mung bean		
Fructose Lactose	Honey Sucrose	Glucose

<http://www.moh.gov.my/attachments/3878.pdf>



FROM HIGH GI	TO LOW GI
 White Bread	 Multigrain Bread
 Cornflakes	 Rolled Oats
 Thai Jasmine Rice	 Basmati Rice
 Yellow Noodles	 Rice Vermicelli

<http://www.catsbase.com/low-glycemic-index-foods-list-chart/>

Interventions : physical activity, general lifestyle modification (self-management, self-care)



Meta-analysis results

Effect size (SMD) and Absolute value (MD)

Effect size (SMD)

(Sullivan, G. 2012)¹⁹, (DeCoster, J. 2009)¹⁸

- Standardized measures of effect, which are calculated to transform the effect to an easily understood scale.

Small	0.2
Medium	0.5
Large	0.8
Very Large	1.3

Absolute value (MD)

- amount by which the experimental intervention changes the outcome on average compared with the control
- used as a summary statistic in meta-analysis (Higgins, JPT. 2011)²⁰

Table: Summary results

Glycemic control		Effect Size					Absolute value				
		SMD	LCI	UCI	P	I ²	MD	LCI	UCI	P	I ²
HbA1c							%				
1	All interventions x 3 months	-0.48	-0.87	-0.1	0.01	74%	-0.56	-0.95	-0.16	0.006	69%
2	All interventions (but general lifestyle modification only) x 6 months	-0.14	-0.7	0.42	0.62	76%	-0.21	-1.08	0.66	0.63	76%
Blood sugar							mg/dl				
3	All interventions x 3 months	-0.47	-0.95	0.02	0.06	75%	-16.76	-31.36	-2.17	0.02	66%
Subgroup analysis		SMD	LCI	UCI	P	I ²	MD	LCI	UCI	P	I ²
HbA1c							%				
4	General lifestyle modification x 3 months	-0.23	-0.78	0.33	0.42	77%	-0.42	-1.45	0.61	0.43	80%
5	Physical activity x 3 months	-0.95	-1.33	-0.57	<0.00001	0%	-0.85	-1.15	-0.55	<0.00001	0%
Blood sugar							mg/dl				
6	Physical activity x 3 months	-0.34	-0.7	0.02	0.07	0%	-9.71	-17.7	-1.72	0.02	0%
7	Diet modification x 3 months	-0.72	-1.85	0.41	0.21	92%	-20.83	-45.54	3.88	0.1	82%

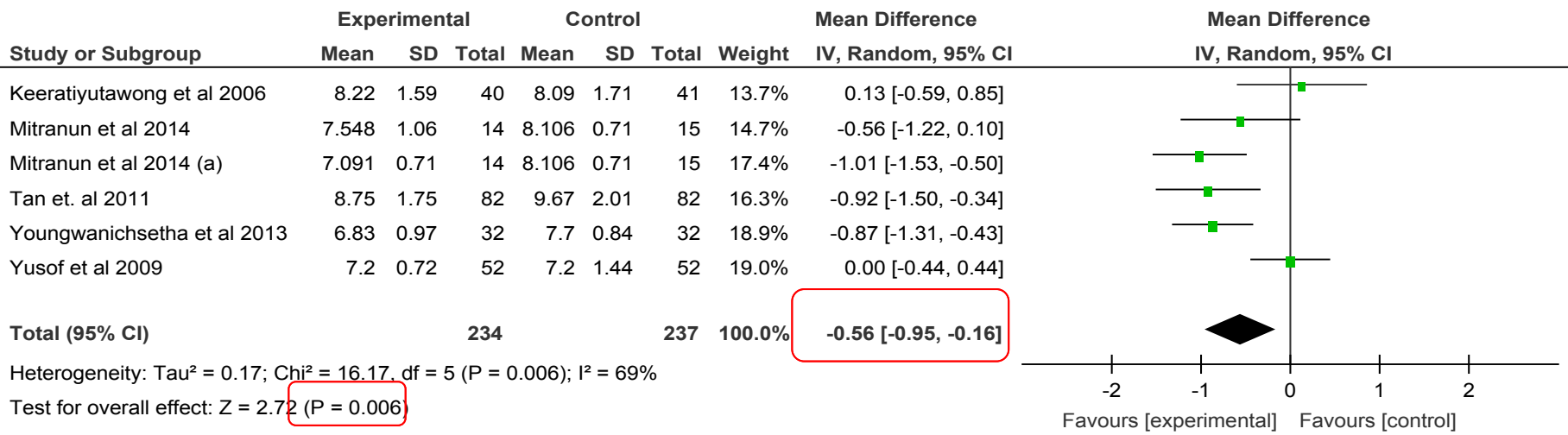
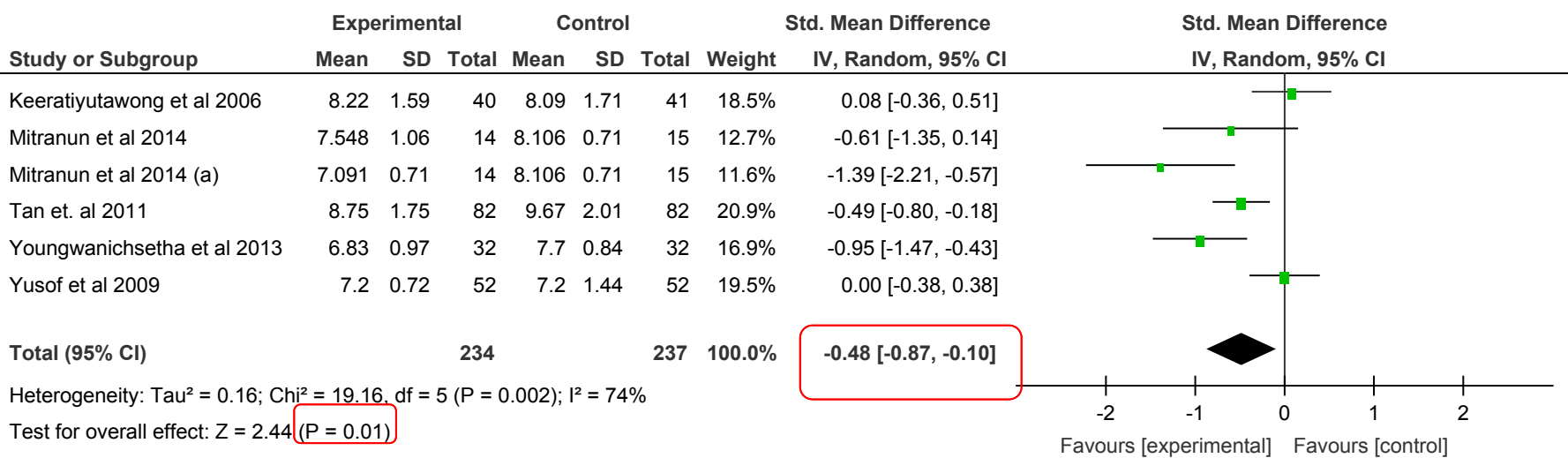
(A) Results for all interventions overall

- **3months**
 - Result (1): HbA1c
 - Result (2): Blood sugar
- **6months**
 - Result (3): HbA1c

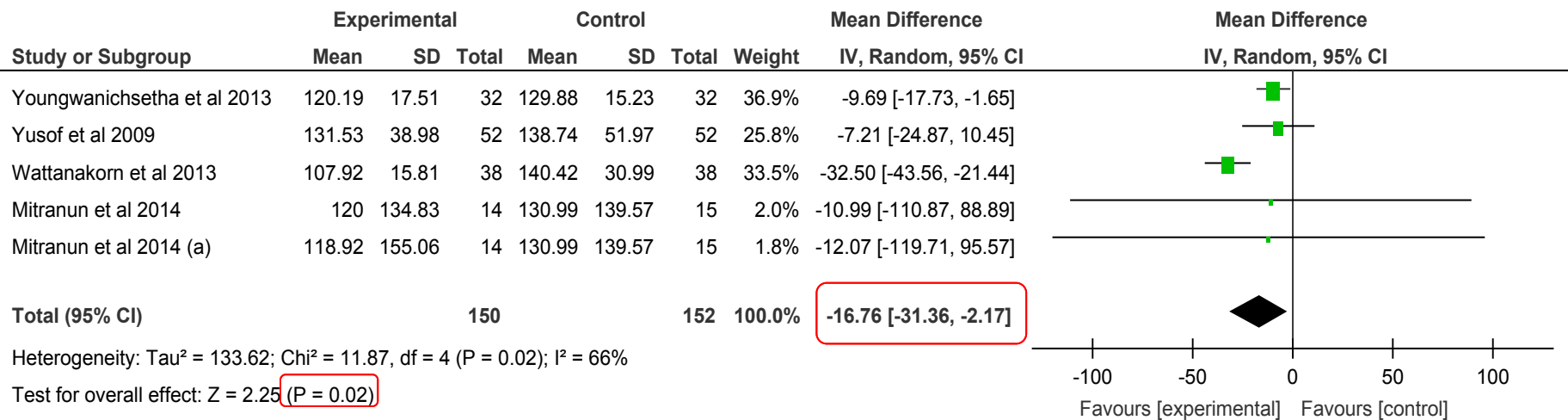
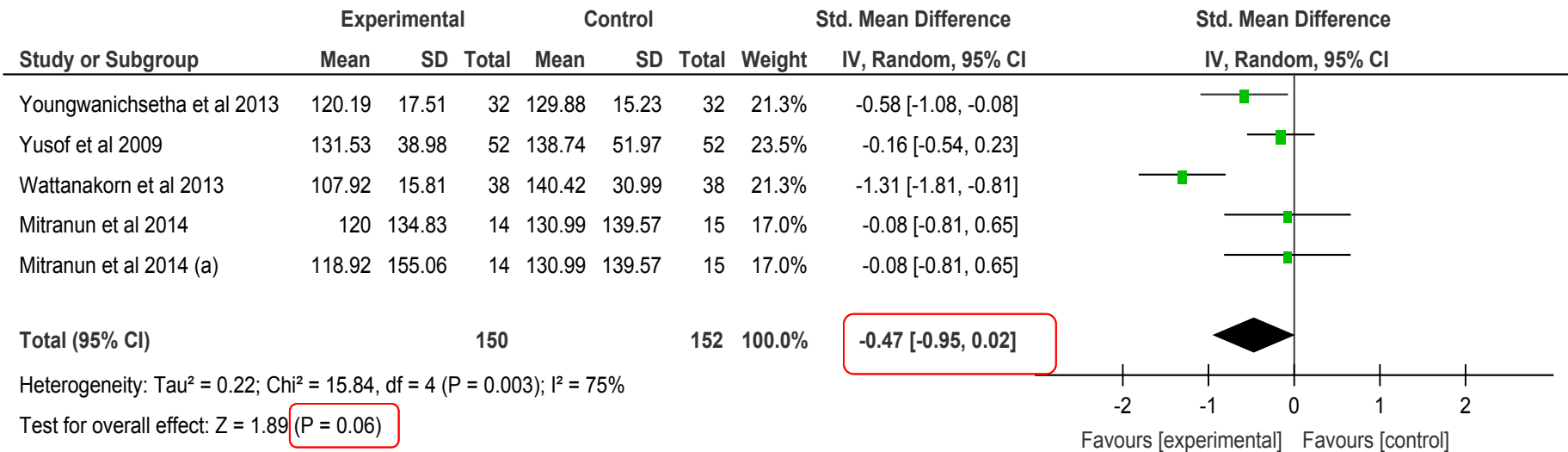
REMARK	HbA _{1c} SCORE (%)	MEAN BLOOD SUGAR (mg/dl)
POOR CONTROL	12	345
	11	310
	10	275
	9	240
FAIR CONTROL	8	205
	7	170
EXCELLENT CONTROL	6	135
	5	100

www.justforhearts.org

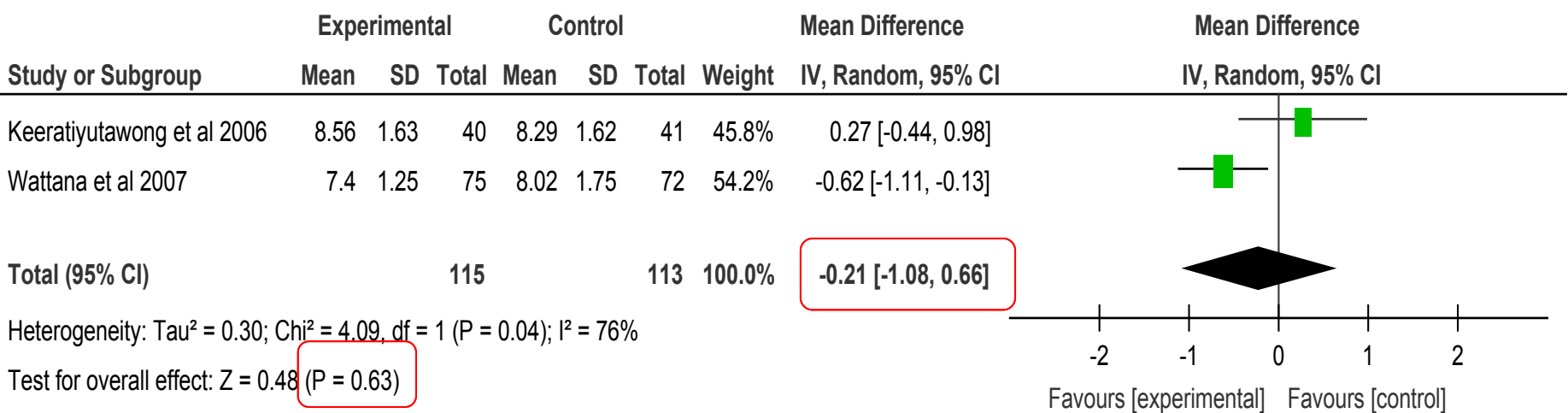
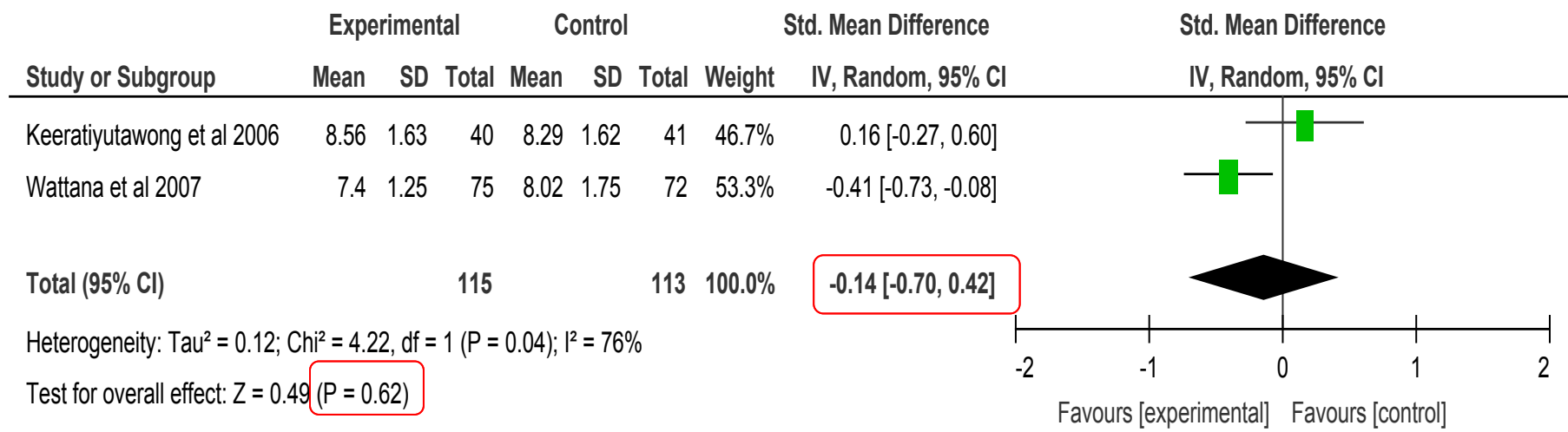
Results (1): HbA1c x 3 months



Results (2): blood glucose x 3 months



Results (3): HbA1c x 6 months

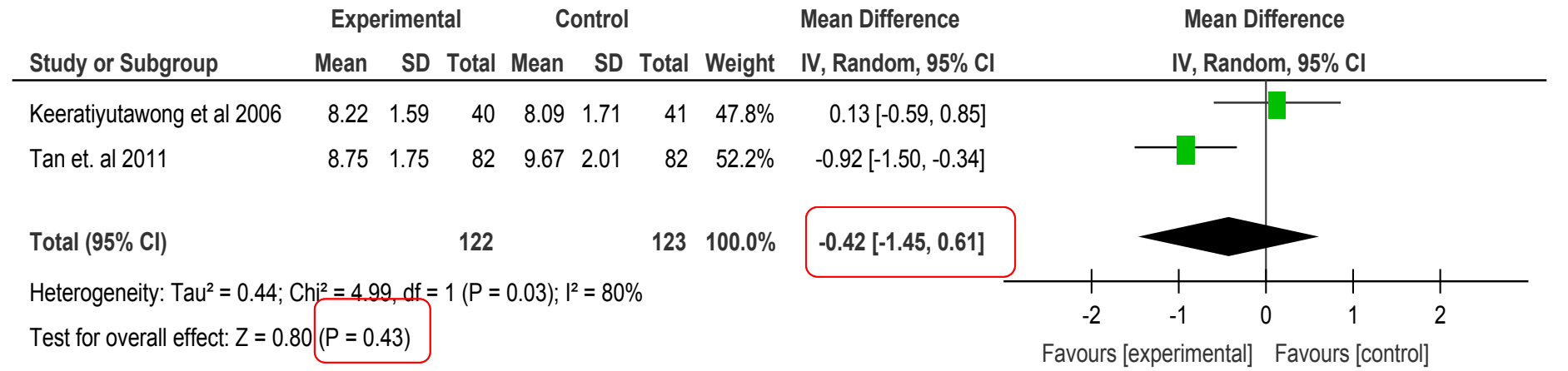
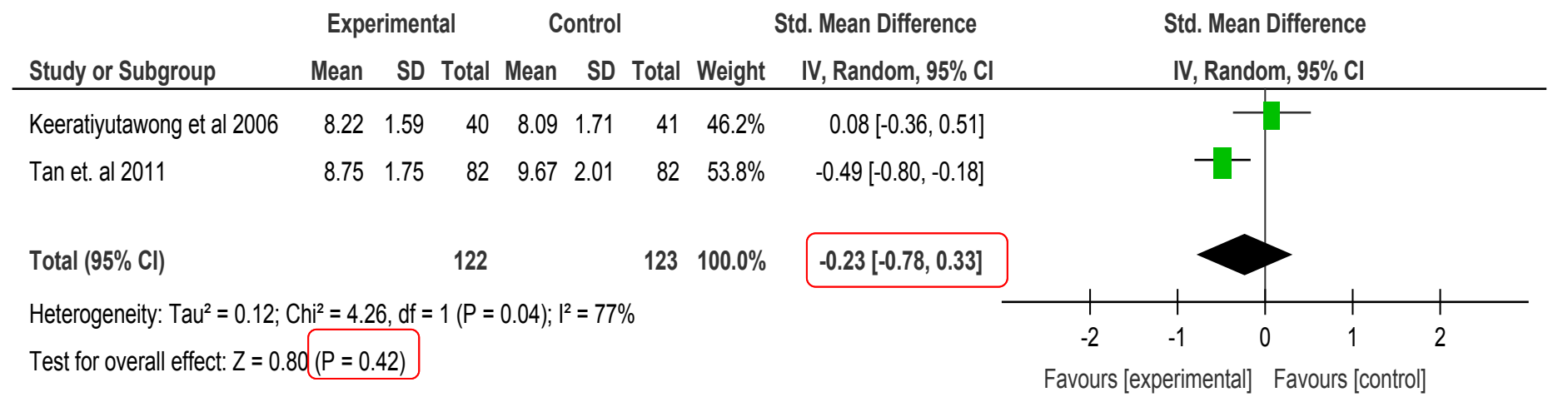


(B) Results for subgroup analysis

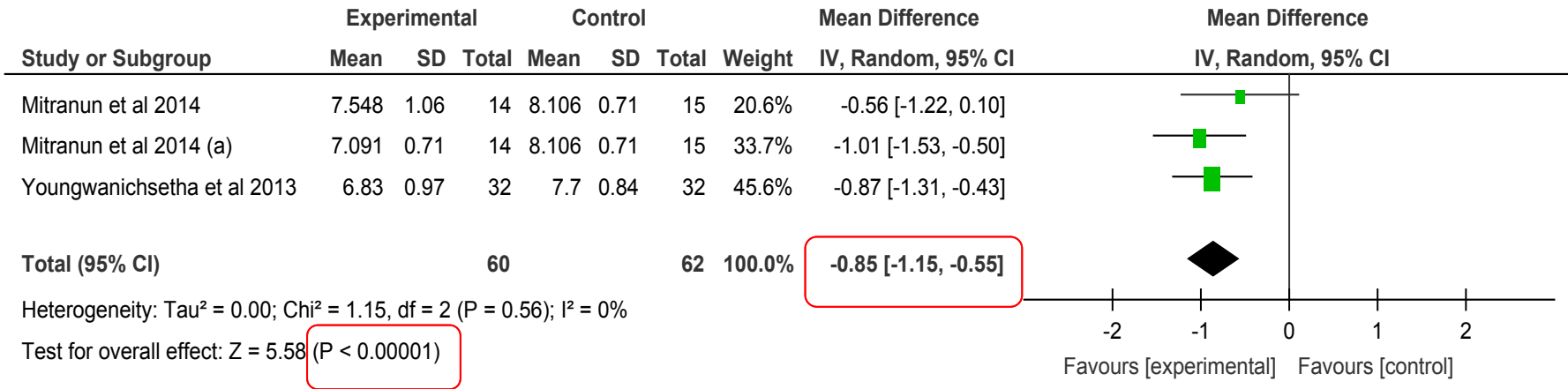
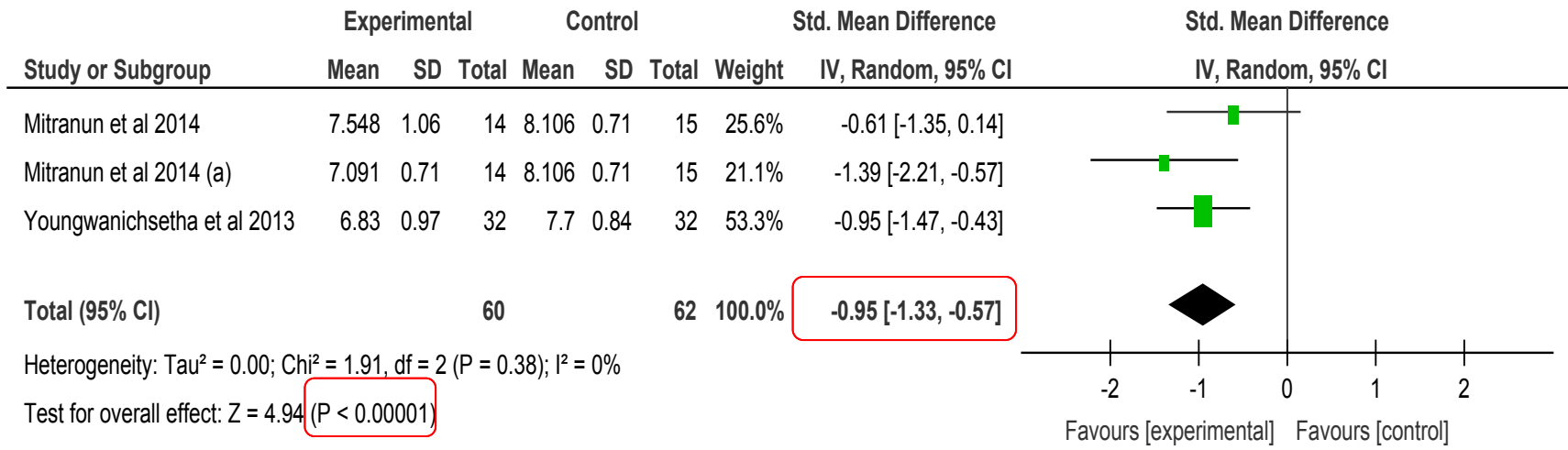
- 3months
 - HbA1c
 - Result (4): general lifestyle modification
 - Result (5): Physical activity
 - Blood sugar
 - Result (6): Physical activity
 - Result (7): Dietary modification



Results (4): HbA1c; general lifestyle x 3 months



Results (5): HbA1c; physical activity x 3 months

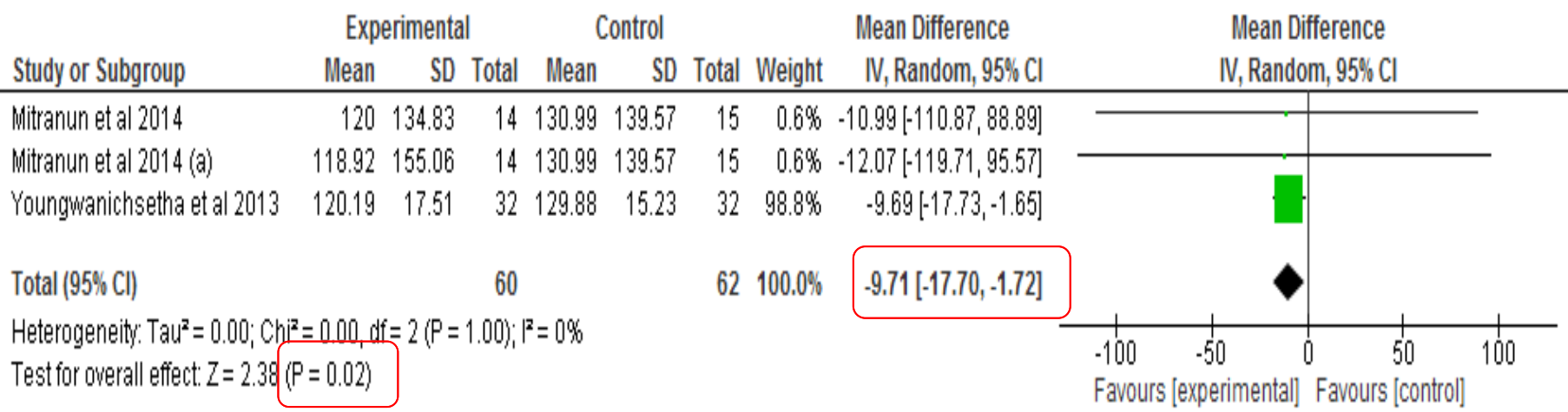
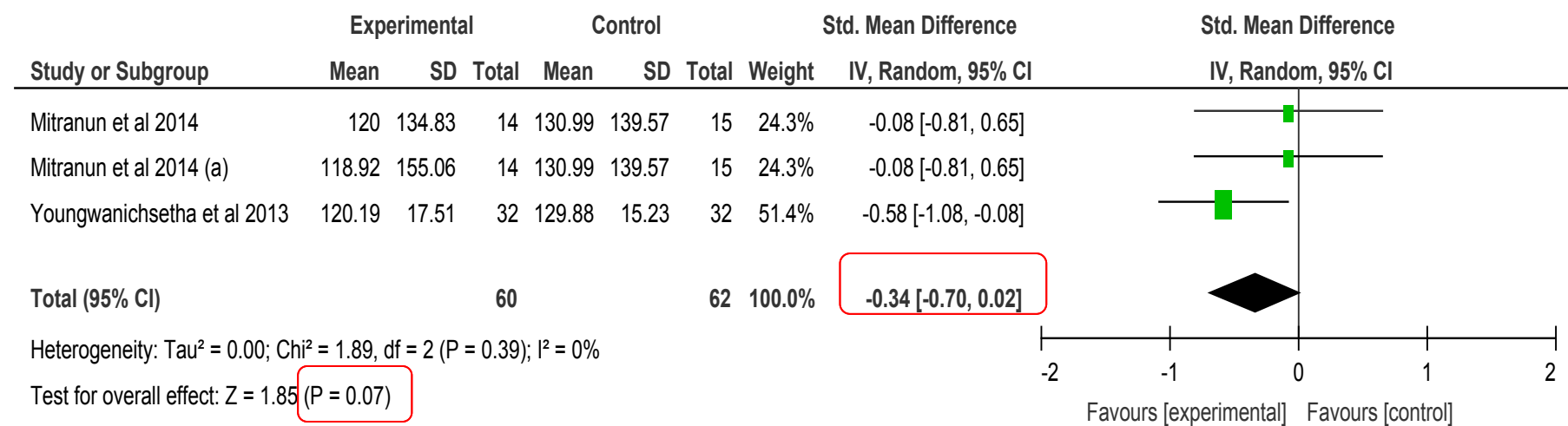


Results for subgroup analysis

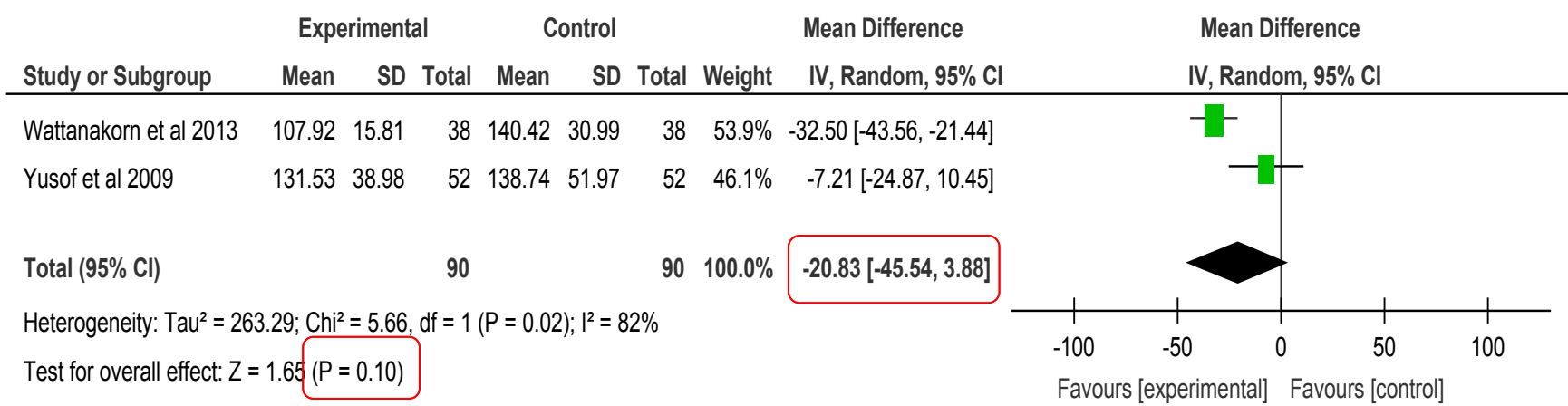
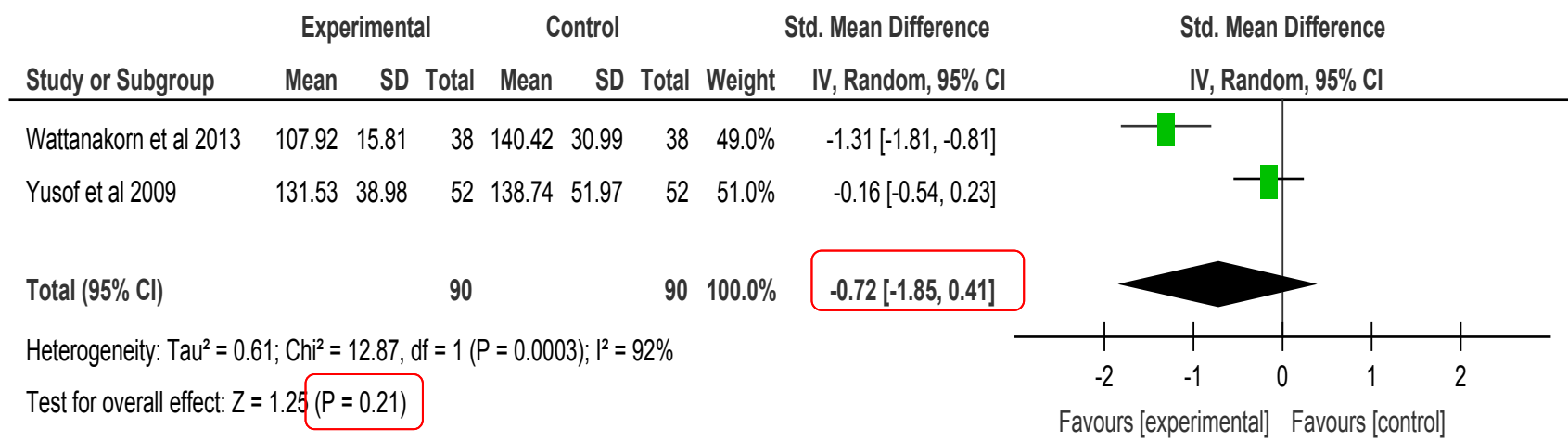
- 3months
 - HbA1c
 - Result (4): general lifestyle modification
 - Result (5): Physical activity
 - Blood sugar
 - Result (6): Physical activity
 - Result (7): Dietary modification



Results (6): Blood sugar; physical activity x 3 months

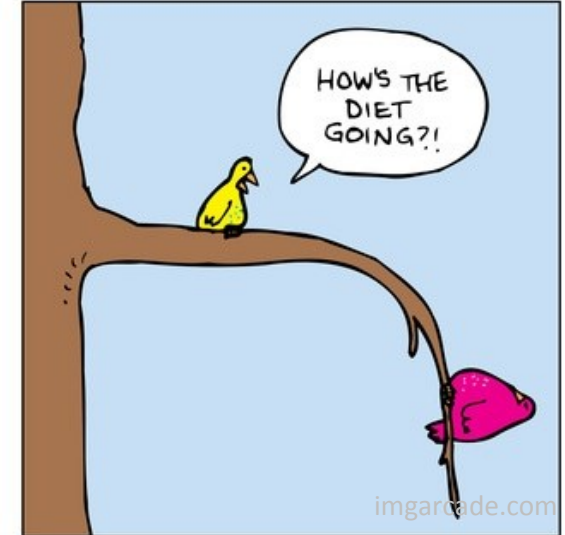


Results (7): Blood sugar; diet modification x 3 months



Discussion

- Dietary modification,
- Physical Activity
- General lifestyle (Self-management/self-care) intervention
- Supervision on the interventions
- Duration of the interventions
- Intensity and dosage



Discussion- continued



- Strengths

- ✓ 1st systematic review on this issue for SEA
- ✓ Extensive data search
- ✓ Strict inclusion, exclusion criteria
- ✓ Contacted original authors and more information
- ✓ Included a range of lifestyle modification



- Limitations

- ✓ Rely on availability and quality of the RCTs
- ✓ Regional review
- ✓ Relevant RCTs were not available from every country in the SEA region

fayeglenn.blogspot.com

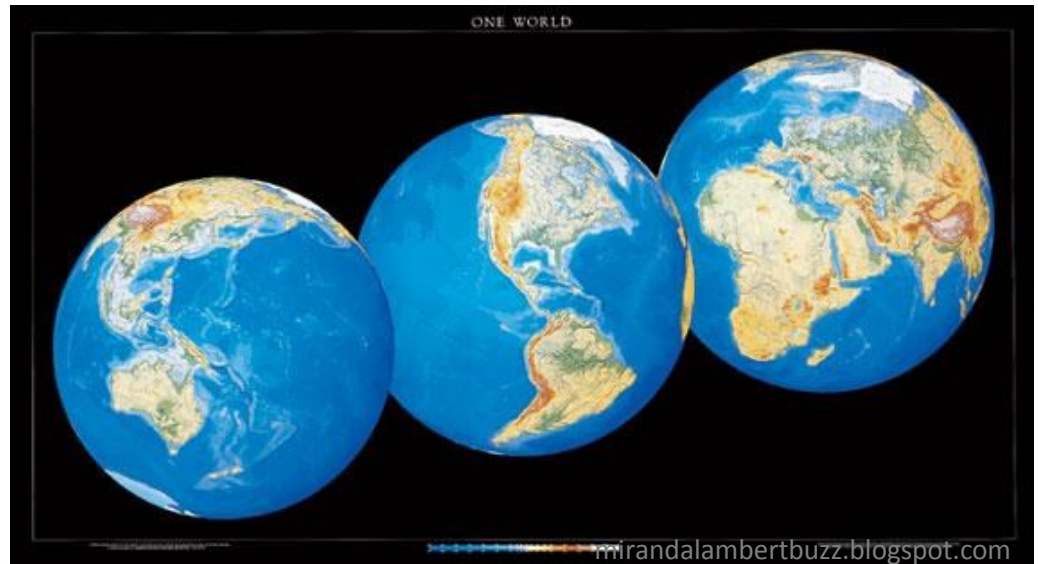
Conclusion

- Overall, lifestyle modification interventions are effective for the glycemic control of T2DM patients in countries of Southeast Asia.
- Short term glycemic control is effective but no evidence for long-term control



Future Research

- RCTs from other Southeast Asia countries
- Long-term glycemic control (>6 months)
- Regional studies



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Question?





Public Health Field Experience Presentation

**Riley County Research and Extension
Preceptor: Ginny Barnard, MPH
January – March, 2015**

Research extension office riley county

- Research extension office riley county
- Jan 2015 – March 2015
- 180 hours



Field experience preceptor



- Virginia (Ginny) Barnard, MPH
- Family Consumer Sciences Agent
- Discipline Areas:
 - Food and Nutrition
 - Food Safety
 - Health and Safety
 - Indoor Environments

Learning objectives

- To understand the **role** of a public health agency in the community
- To learn how a public health nutrition project is **managed**
- To identify **relevant** health and nutrition education for target groups
- To **apply** knowledge to implement parents and children health and nutrition project
- To understand **barriers and motivation** for the low income minority parents on provision of healthy food choices.

Focus and scope of field experience

- Head Start – Mothers (Parents) and Children Nutrition Program



<http://www.headstartprogram.us/>

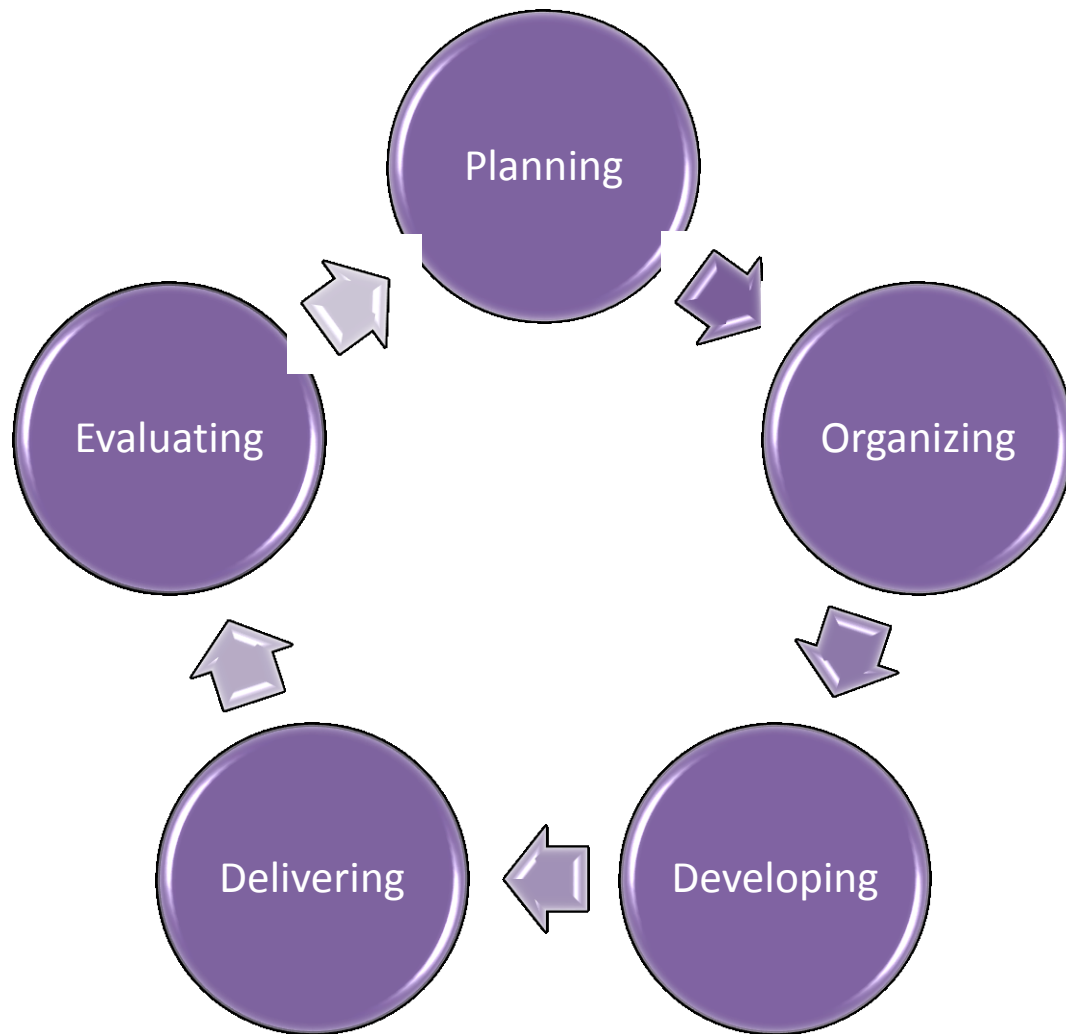
Head Start program

- a free, federally-funded early childhood program
- serves families with low incomes
 - education
 - health
 - nutrition
 - social services



www.new.nsd.org

Project cycle management



Planning

- Meetings
- Reviewed prevailing health/nutrition issue, less frequently addressed
- February was “the Children’s National Dental Health Month”
- DIP (detail implementation plan)

February is...



National Children's
Dental Health Month

andersonpediatricdental.com



Reviewed health and nutrition issue (1)

- $\frac{2}{3}$ adults and $\frac{1}{3}$ children in the US = overweight or obeseⁱ (National Institute of Health, NIH)
- Nation costing \$190 billion a yearⁱⁱ (Cawley, J. 2012)
- A key contributor to the obesity epidemicⁱⁱⁱ (Harvard, School of Public Health, Sugary drinks and obesity fact sheet)
- Same local issue → tooth decay (cavities), obesity and malnutrition



Reviewed health & nutrition issue (2)

- Tooth decay is the **most common public health problem** of chronic childhood disease. ^{iv}
- x 5 > asthma, x 7 > hay fever and 52 million school hours missed annually ^{iv}. (National Children's Oral Health Foundation, NCOHF)
- Affects > ¼ of U.S. children(2–5 yrs); > 1/2 of (12–15 yrs) ^v
(Center for Disease Control, CDC)



Organizing

- Arranged DIP (detail implementation plan)
- Prepared for transtheoretical model, Stages of Change
- Searched, mobilized resources
- Prepared invitation flyers, presentation, handouts and recipes

How to deal with the sweet tooth?

Does your family consume a lot of sweet foods and drinks? Cookies, candy, cake, pie and soda are common. You are not alone. Come learn some easy ways to deal with the sweet tooth.



- Free meal for the whole family
- Fun, hands-on activity for the kids
- And a chance to win door prizes!

Every family will receive low-cost, easy



Delivering

- Meal for the participants
- Social line-up method for rapid assessment & discussion
- PowerPoint presentation
- “Stages of Change” model
- Individual action plan



Delivering (continued)

Table : Stages of change model^{vi}

<i>Stage</i>	<i>Definition</i>	<i>Potential Change Strategies</i>
Precontemplation	Has no intention of taking action within the next six months	Increase awareness of need for change; personalize information about risks and benefits
Contemplation	Intends to take action in the next six months	Motivate; encourage making specific plans
Preparation	Intends to take action within the next thirty days and has taken some behavioral steps in this direction	Assist with developing and implementing concrete action plans; help set gradual goals
Action	Has changed behavior for less than six months	Assist with feedback, problem solving, social support, and reinforcement
Maintenance	Has changed behavior for more than six months	Assist with coping, reminders, finding alternatives, avoiding slips/relapses (as applicable)

www.sneb.org

- Monitored throughout the project
- Received feedbacks
- Applied in next time during the project
- Plan for next program rounds



Gardening and nutrition education activities

- Northview elementary school
 - Learning about various seeds
 - How to grow and when to harvest
 - Nutrients of respective fruits and vegetables
 - Plan for gardening in next session
 - Responsible to assist during the lead trainers (Ginny and John)



Products developed

How to deal with sweet drinks?

Does your family drink a lot of sugary beverages? You are not alone. Soda, juice, and sports drinks are very common, so don't worry. Come learn some easy ways to deal with sugary drinks.



- Free meal for the whole family
- Fun, hands-on science activity for the kids
- And a chance to win door prizes!

Every family will receive low-cost, easy meal ideas.

Date: Thursday, February 19
Time: 5:30 pm to 6:30 pm
Location: Head Start
1700 Leavenworth St.
Manhattan, KS 66502

K-STATE
Research and Extension

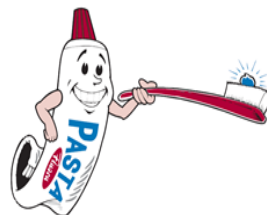
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How to deal with the sweet tooth?

Does your family consume a lot of sweet foods and drinks? Cookies, candy, cake, pie and soda are common. You are not alone. Come learn some easy ways to deal with the sweet tooth.



- Free meal for the whole family
- Fun, hands-on activity for the kids
- And a chance to win door prizes!



Every family will receive low-cost, easy meal ideas.

Date: Tuesday, March 10
Time: 5:30 pm to 6:30 pm
Location: Head Start
1700 Leavenworth St.
Manhattan, KS 66502

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Products developed^{vii}

Sweet Drinks

Today's children drink a lot of sugary drinks such as soda, fruit drinks and other sweet drinks. **This can be a problem!**

Small children are usually good at controlling how many calories they eat. They tend to eat when they are hungry, and stop eating when they are full. However, drinking sugary drinks is not the same as eating solid foods. Studies have shown that the calories in sugary drinks are not as satisfying as the calories in solid foods.

Small children may become overweight from drinking too many sweet drinks. Sometimes a child's overweight problem is not caused by what the child eats. It may be caused by what the child drinks.

Cavities



Small children may develop cavities from drinking sweet drinks. Bacteria use sugar to make cavities in children's teeth.

Poor nutrition

Children who drink lots of sweet drinks are probably not drinking enough milk. Their diets can be low in calcium. Serve skim or 1% milk at meals for children over the age of 2 years. There are a lot of calories in sugary drinks. A 12 ounce can of soda has 150 calories. An average preschool child needs only 1600 calories per day. An extra can of soda every day can add up to 1050 calories in a week. At that rate, a preschool child could gain an extra pound each month or 12 extra pounds in a year above their normal growth.

Help your child develop healthy eating habits which will last a lifetime.

Limit sugary drinks!

- **Offer water to drink.** Small children can be thirsty. Drinking water is healthy habit your child can learn early in life.
- **Keep a pitcher of cold water in your refrigerator.** Your child will want a drink of the 'special water'. A cold glass of water is refreshing.
- **Limit sodas.** Don't drink soda every day.
- **Keep sugary drinks out of the house.** If there are sugary drinks in the house, your child will want to drink them.
- **Limit juice.** Too much juice can also be a problem. Limit juice to 4 to 6 ounces each day.



- **Snack on fruits and vegetables.** Fruits and vegetables are naturally high in water and will help satisfy your child's thirst. Enjoy apples, melon, kiwi, tangerines, carrots and oranges!
- **Model good habits for your child.** Your child will learn to drink what he sees you drinking. Drink water and limit soda to rare occasions.

Eating Smart

Falafel

- 1 can chickpeas, rinsed and drained
- 1 small red onion, minced
- 3 cloves garlic, minced
- ¼ cup fresh parsley, chopped
- ¼ cup fresh cilantro, chopped
- 1 tsp cumin
- ½ tsp coriander
- ½ tsp salt
- 3 tbsp olive oil

Preheat oven to 400°F.

In a food processor, combine chickpeas, red onion, garlic, parsley, cilantro, cumin, coriander, salt and 2 tbsp olive oil.

Pulse until mixture resembles fine crumbs.



In a large mixing bowl, combine all of the ingredients. Stir to coat. Store in the refrigerator for up to 5 days. Enjoy!



Roll mixture into 12-15 balls and place on a parchment lined baking sheet.

Brush each ball with olive oil.

Bake for 40 minutes, turning once half way through cooking.

Serve immediately with tahini or garlic sauce.

Refrigerate for 4-5 days or freeze for up to six months.

Enjoy!

Tomato Cucumber Salad

- 2 tomatoes, diced
- 1 cup cucumber, diced
- ½ red onion, minced
- ¼ cup fresh parsley, finely chopped
- ½ lemon, juiced
- 1 tbsp olive oil
- Salt and pepper

This sheet provides general nutrition information; medical advice should be obtained from your health care provider. Contents references: Nutrition Matters, Inc. Riley County Extension, www.riley.ksu.edu. Weekly meal preparation for healthy eating: Pictures sources: personalexcellence.co, www.usgirlsonline.com, www.tarasfoods.com, whatcookingmom.in, www.vegiebelly.com, brooklynbrewshop.com, www.girlsgonesparty.com, www.sastavki.com, www.desktopia.com, www.boston.com, lexicondaily.blogspot.com, pixshark.com, kingdm.com

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Please check on the number that you can do from now on:

1. I can offer my children water to drink.



2. I will keep a pitcher of cold water in my refrigerator.



3. I will limit sodas.



4. I will keep sugary drinks out of the house.



5. I will limit juice 4 to 6 ounce /day.



6. I will provide snack on fruits and vegetables.



7. I will be the model of good habits for my children.



Please check on the number that you can do from now on:

1. I can keep sweets out of the house.



2. I won't eat a lot of sweets myself.



3. I will limit sweet drinks such as soda and fruit drinks.



4. I will limit juice 6 ounce /day or less each day.

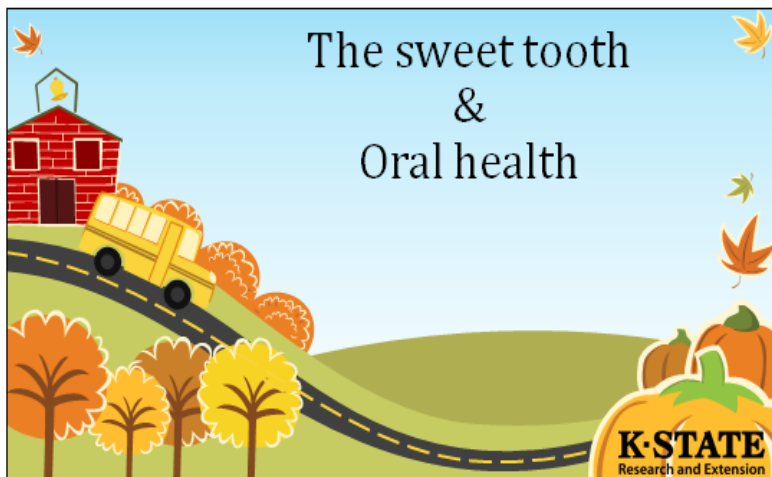


5. I will offer nutritious snacks with a natural sweet taste.



6. I will be the model of good habits for my children.

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Intro discussion points:

- What is your favorite taste? (salty, sweet, sour, bitter)
- How much do you consume those foods/drinks per day? (a little/ moderate/ a lot)
- Have you ever heard/ experienced any health issues relating to having too much sweets? What are they?
- Any willingness to change the habit of consuming too much sweets?

Oral health video for kids

- 1 (Clean Teeth Are Healthy Teeth - Value based Story ; 4.45 min)
https://www.youtube.com/watch?v=P7oFmloL4IM&list=PLNFnn94PACGB92V7hnipb00_1VCQ2HfMs&index=3
- 2 (How to Brush Your Teeth Properly - For Kids ; 3.29 min)
https://www.youtube.com/watch?v=hDZXSMU2IAk&list=PLNFnn94PACGB92V7hnipb00_1VCQ2HfMs
- 3 (Crest Dental Defenders Video ; 7.23 min)
<https://www.youtube.com/watch?v=QNOwvzvEmiU>

Children are born with a sweet tooth.



Products developed

We should enjoy a variety of foods.

- However, some children can eat too many sweets – too many empty calories.
- Too much sugar can cause problems for small children such as:
- Tooth decay



Sweets can ruin an appetite fast!

"The child may only eat sweet foods and parents will give the sweet because they want their child to eat something."



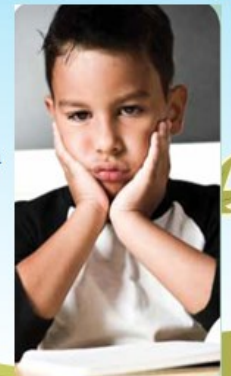
Too much sugar can cause problems for small children such as:

- Obesity



Impact of poor oral health

- Decreased school performance
- Poor social relationships
- Distracted and unable to concentrate on schoolwork



Results

Table: Rapid assessment results of participants' practice and view on sweet drinks

Line (1)	I'm having sweet drinks/ sugar sweetened beverages everyday.	not consume	consume moderately	consume a lot	Total
	number (n)	1	1	4	6
	percentage (%)	16.7%	16.7%	66.7%	100.0%
Line (2)	I think sweet drinks / SSBs are (bad/not sure/ good) for health.	bad	not sure	good	Total
	number (n)	2	4	0	6
	percentage (%)	33.3%	66.7%	0.0%	100.0%
Line (3)	Concerning sweet drinks, I am going to / to not drink doing	at all	try somehow to reduce	not serious to reduce	Total
	number (n)	1	4	1	6
	percentage (%)	16.7%	66.7%	16.7%	100.0%

Results:

Table: Stages of Change of the participants relating to the behavior of reducing sweet drinks and drinking water instead

Stages of change	Number (n)	Percentage (%)
Stage 1. Precontemplation (not ready)	1	16.7%
Stage 2. Contemplation (getting ready)	1	16.7%
Stage 3. Preparation (Ready)	3	50.0%
Stage 4. Action	0	0.0%
Stage 5. Maintenance	1	16.7%
Total	6	100.0%



Results

Table Summary of the participants' individual action plan to deal with sweet drinks

Participants	1	2	3	4	5	6	Total	% participants
Action plan								
1. I can offer my children water to drink	Y	Y	Y	Y	Y		5	83.3%
2. I will keep a pitcher of cold water in my refrigerator	Y	Y	Y	Y	Y		5	83.3%
3. I will limit sodas	Y	Y			Y		3	50.0%
4. I will keep sugary drinks out of the house	Y	Y	Y				3	50.0%
5. I will limit juice to 4-6 ounces / day			Y	Y	Y		3	50.0%
6. I will provide fruits and vegetables for snacks	Y	Y	Y	Y	Y	Y	6	100.0%
7. I will be the model of good habits for my children	Y	Y	Y	Y	Y		5	83.3%
Total	6	6	6	5	6	1		
% out of 7 actions	85.7%	85.7%	85.7%	71.4%	85.7%	14.3%		

Results

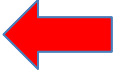
Table: Status of stages of change for limiting sweets and regular tooth brushing

Stages of change	number (n)	Percentage (%)
Stage 1. Precontemplation (not ready)	0	0.0%
Stage 2. Contemplation (getting ready)	0	0.0%
Stage 3. Preparation (Ready)	3	100.0%
Stage 4. Action	0	0.0%
Stage 5. Maintenance	0	0.0%
Total	3	100.0%



Results

Table: Summary of the participants' individual action plan to deal with sweet tooth and dental cavities

Participants	1	2	3	4	Total	% of participants
Action plan						
1. I can keep sweets out of the house 					0	0.0%
2. I won't eat a lot of sweets myself			Y	Y	2	50.0%
3. I will limit sweet drinks such as soda and fruit drinks			Y	Y	2	50.0%
4. I will limit juices to 6 ounce or less per day	Y		Y	Y	3	75.0%
5. I will offer nutritious snacks with a natural sweet taste	Y	Y	Y	Y	4	100.0%
6. I will be the model of good habits for my children		Y	Y	Y	3	75.0%
Total	2	2	5	5		
% out of 6 actions	33.3%	33.3%	83.3%	83.3%		

Alignment with public health core competencies

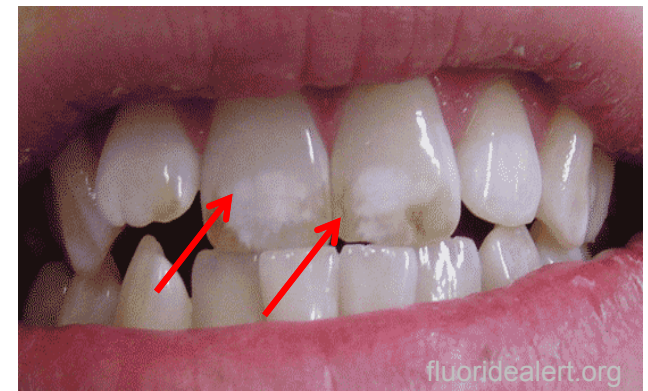
- **Biostatistics**

- Throughout my thesis research
- Assessed many studies and identified the relevant studies, extract data, decide the suitable statistical methods in pooling the extracted data



- **Environmental health/ toxicology**

- During my field experience
- Dental fluorosis
- Gastrointestinal discomfort at doses which were much lower than lethal doses



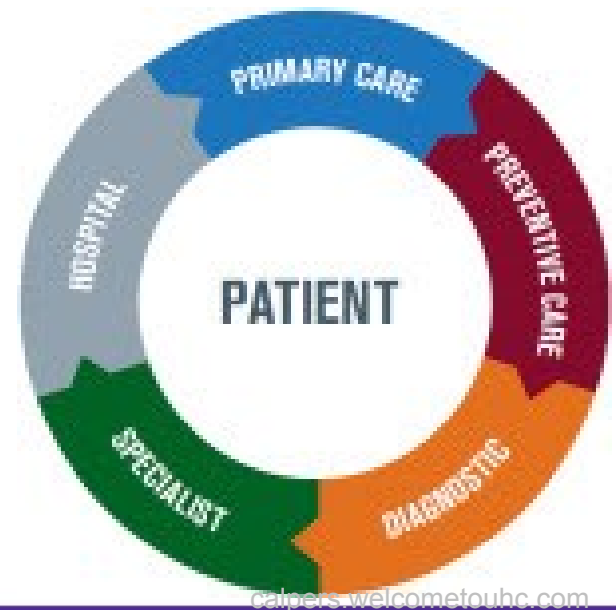
Alignment with public health core competencies

- **Epidemiology**

- In both of my thesis research and field experiences
- Researched prevalence trends, reviewed, assessed types of studies, appraised the study design, “internal validity” and “external validity”

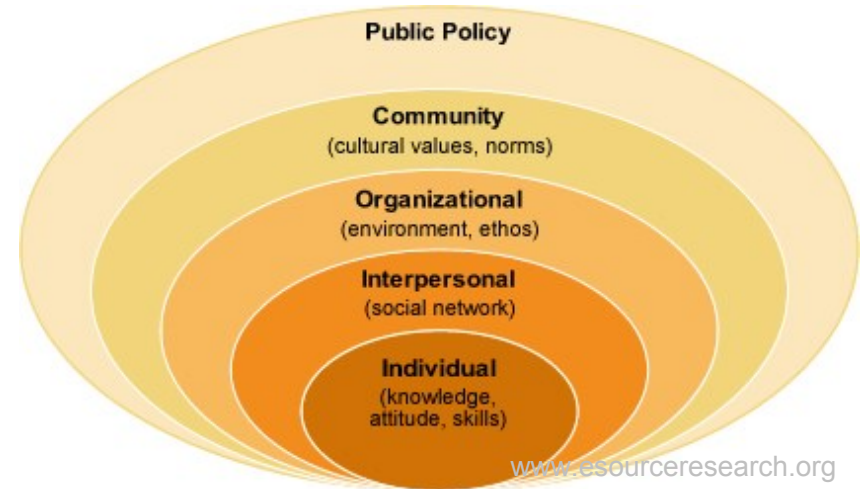
- **Health care administration**

- During field experience
- Medical care needs to be strongly linked with public health care system



Alignment with public health core competencies

- **Social behavioral sciences**
 - Achieved good experience throughout my field training and thesis research
 - Behavior change oriented nutrition education
 - The nutrition education targeted to these families by understanding their social and behavioral factors



Conclusion

He who loves practice without theory is like the sailor who boards ship without a rudder and compass and never knows where he may cast.

- Leonardo da Vinci



www.slideshare.net

Conclusion

- Fruitful experiences of [how](#) a public health program works in the community and the whole [project cycle management](#) experiences- planning, organizing, developing, implementing, monitoring and evaluation.
- Combined education and experiences I gained through K-State Research Extension are the perfect combination that enables me [to continue my career](#) as a better public health professional in [academia](#), [research works](#) and [public health program administration](#)
- [Thank you K-State!](#)



christinemclean10.wordpress.com

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- vii. Healthy Meal Prep Week 2. <https://www.youtube.com/watch?v=Rv7TrUDlvH8>

Acknowledgements

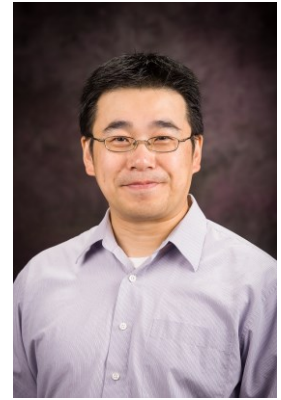
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 - Dr. Wei-Wen Hsu
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 - Barta Stevenson, MPH Program Assistant
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 - Ginny Barnard, Field Experience Preceptor
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- **Head Start Program**
 - Andy Hutchinson, Program Director
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- **Family and Friends**



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Question?





Thank you.