

Dietary sodium intake of women (aged 19-65 years) in selected township of Yangon Region

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Background and Justification

- **Hypertension is a risk factor for cardiovascular diseases.**
- **Non Communicable disease risk factor survey Myanmar 2014-the percentage of population with raised blood pressure (SBP \geq 140 and/or DBP \geq 90 mmHg or currently on medication for raised blood pressure) was 30% (Male: 24.7%, Female: 28.0%)(1) .**
- **High dietary sodium intake is associated with the development of hypertension which is one of the most important risk factors for cardiovascular disease(CVD), including stroke(2).**

- **Reviewing the amount and sources of dietary sodium intake in the community can help identify knowledge-gaps and provide directions for future research and policy recommendations.**
- **Measuring sodium intake at the population level is challenging. The 24-hour urine collection which is considered the “gold standard” to measure sodium intake captures 85-90% of ingested sodium.(1,7)**
- **However, its high cost and participant burden may render it a less feasible option.**

- **Sodium intake may also be estimated indirectly from questionnaire or food consumption data.**
- **Measures of food consumption include 24-hour food recalls, food diaries, duplicates of food collection, and food frequency questionnaires(8) .**
- **Sodium intake is then assessed by linking food intake information to a food composition database.**
- **Dietary sodium intake and the major sources vary among different regions and populations, largely determined by cultural preference.**

- **Awareness of contemporaneous sodium intake and identification of food sources of sodium in diets will inform more specific tailoring of salt reduction policies in local population.**
- **There is no study in estimating salt consumption using characterizing the food groups to assess contributions to the source of sodium and dietary intake of sodium in Myanmar.**
- **Therefore, this study aimed to know the source of dietary sodium and assess the dietary sodium intake of women (aged 19 to 64 years) from selected township of Yangon Region.**

Objectives :

General objective :

- **To assess the dietary sodium intake of women (aged 19 to 64 years) from selected township of Yangon Region.**

Specific objectives:

- **To identify the intake of foods with high content of salt by using food frequency questionnaires.**
- **To assess sodium intake of women from three days 24 hour dietary recalls.**
- **To analyse sodium contents in foods consumed by women by Atomic Absorption Spectrometry.**
- **To calculate sodium intake of women by summing the estimates from all contributory food items collecting from 3 days 24-hour recalls.**

Materials and Method

- **Study design: Cross sectional descriptive study.**

- **Study population and study place**

Women aged 19 to 64 years old from South Okalapa township in Yangon Region.

- **Sample size calculation**

Using the data on proportion of Hong Kong Chinese postmenopausal women who consumed high intake of salt above WHO recommendation of 5 g/day was 82.1% (10).

$$n = 1.96 \times 1.96 \times pq / d^2$$

Confidence level 95% and absolute precision of 7%, With 25 % non response rate, sample size will be 150 .

Sampling

- South Okkalapa township was randomly chosen In Yangon Region.**
- Five wards from South Okklapa township will be chosen again randomly.**
- 30 households from each ward will be chosen with the help of midwives and local authorities.**
- Women aged 19 to 64 years within each household will be eligible to take part in the study.**
- Where there will be more than one eligible women in a household, one woman will be randomly selected again and this women can answer the household use of condiments such as salt, monosodium glutamate, chicken powder and others, fish sauce.**
- Females who were pregnant or breastfeeding will not eligible to take part in the study.**

Data collection

- **Each participant will have three visits: the first two on consecutive days, and on week end.**
- **After getting informed consent, housewives will be interviewed with structured questionnaires (socio-demographic data and food frequency questionnaires including uses of salt, monosodium glutamate, fermented fish paste, fish sauce, pickled food, dried meat/prawn and fish and condiments during the preceding month) .**
- **These data will enable identification of foods and food groups that account for individual dietary sodium intake.**

- **At each of the three study visits, 24-hour dietary recall will be collected .**
- **All foods and beverages consumed in the previous 24 hours will be recorded.**
- **Subjects will be asked to estimate the serving size by using common household measures such as household cups, bowls, spoons (for the cooked foods like vegetables) and visual atlas of different sizes of fruits (small, medium, large) were shown.**



- **Quantitative intake of dietary salt included amount of salt used during cooking and/or added will be recorded.**
- **Sodium containing foods will be identified from food frequency questionnaires and 24-hour dietary recalls .**
- **If it is possible, the duplicate sample of food will be asked from subject or buying / cooking of these food will be done.**
- **Sodium content of these foods will be analysed at Nutrition Laboratory by using Atomic Absorption Spectrometry by standard method proposed by ASEAN Manual of Nutrient Analysis,2011.**

- **Sodium content in food item will be also obtained from Food Composition Tables from other sources.**



Thick soy sauce(2g)

Oyster sauce(2g)

Chili sauce(2g)

Light soy sauce(5g)

- **The interviewers will record the respondent's reported description of the food as well as detailed recipe information .**
- **Amount of food intake was converted to nutrient intake by using the food composition tables.**
- **Total sodium intake will be calculated by summing the estimates from all contributory food items collecting from 3 days 24-hour recall.**

- **High dietary sodium intake will be assumed if sodium intake of women exceed more than 2 g sodium/day (equivalent to 5 g salt/day) according to World Health Organization (WHO) recommendation on sodium consumption for adults (11).**
- **Blood pressure measurement will be taken using automatic blood pressure monitor. Two readings will be taken 5 minutes apart and the average will be taken.**
- **If the blood pressure is raised (SBP \geq 140 and/or DBP \geq 90 mmHg), antihypertensive treatment will be given and referred to Township Medical Officer or Physician.**

- **After conducting the survey, health education talk will be conducted at the Township Health Department to the participants and local authorities.**

DMR

Data entry and analysis

- **Data entry and analysis will be done with Epi Data and SPSS 16.0**
- **Univariate categorical data will be presented with frequency and percent tables and that of continuous variables will be presented with mean \pm SD .**
- **Bivariate categorical data will be analyzed with X² test or Fisher's exact test.**
- **Mean differences between two groups will be analysed by independent t test or Mann-Whitney U test.**
- **The level of significance will be set at P- value <0.05 .**

Ethical aspects

This proposal will be submitted to Ethics Review Committee of Department of Medical Research for approval.

Expected Outcomes/outputs

- The findings from this study will provide data sodium contents of food and dietary sodium intake of Myanmar people.**
- This study provides data to establish target to reduce the average population salt intake in Myanmar population**
- This data will also provide the evidence base for a national salt reduction programme.**

References:

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- 11. World Health Organization, 2012 .Guideline: Sodium intake for adults and children.**

Detail budgetary breakdown

No.	Description		Estimate Cost (US\$)
1.	Advocacy meetings		150
2.	Stationary and questionnaires development		200
3.	Subject fees		750
	Gifts for women(5US\$x150)		
4.	Field Survey		1,600
	Vehicle hiring	600	
	Per diem for interviewers	720	
	Per diem for midwives	180	
	Per diem for workers	100	
5.	Buying foods		100
6.	Data processing, analysis		200
	Data entry (8\$x2personsx10days)	160	
	Data analysis (8\$x1person x 5dyas)	40	
7.	Chemicals and equipments		1,000
	TOTAL COST		4,000