ASEAN UNIVERSITY SYMPOSIUM FOR SUSTAINABLE FOOD SYSTEM

DRINKING WATER AND BEVERAGE INTAKE AFTER COVID-19: CASE STUDY IN NAY PYI TAW COUNCIL AREA, MYANMAR

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Introduction

- A healthy life – safe, nutritious food to meet their dietary needs and food preferences *(FAO,1996)*
- The outbreak of COVID-19 - raised public health, economic and food crises *(Kakaei H et.al, 2022)*
- Food insecurity was seriously leading an estimated one million who need food assistance *(OCHA, 2020)*
- Dietary diversity in rural areas - declined due to unbalance of income and expenditure *(Rural-Urban Food Security Survey, 2020)*
- Changes in consumption due to health - significant in the consumption of rice, vegetables, and pulses, purified water, and fruits *(May Thet Htar et.al, 2022)*

Introduction (Cond;)

- Drinking water and food - the basic need, necessity of life
- Water is an essential nutrient and a major constituent of the human body
- There are different categories - purified drinking water, soft and hot drinks, dairy and milk alternatives, and alcohol
- Purified drinking water - the second-highest in water intake when compared to rice, vegetables, and pulses
- In Myanmar, most of adult in both rural and urban areas, custom of drinking tea - an integral part of everyday life *(Lei Shwe Sin Myint, 2020)*

Introduction (Cond;)

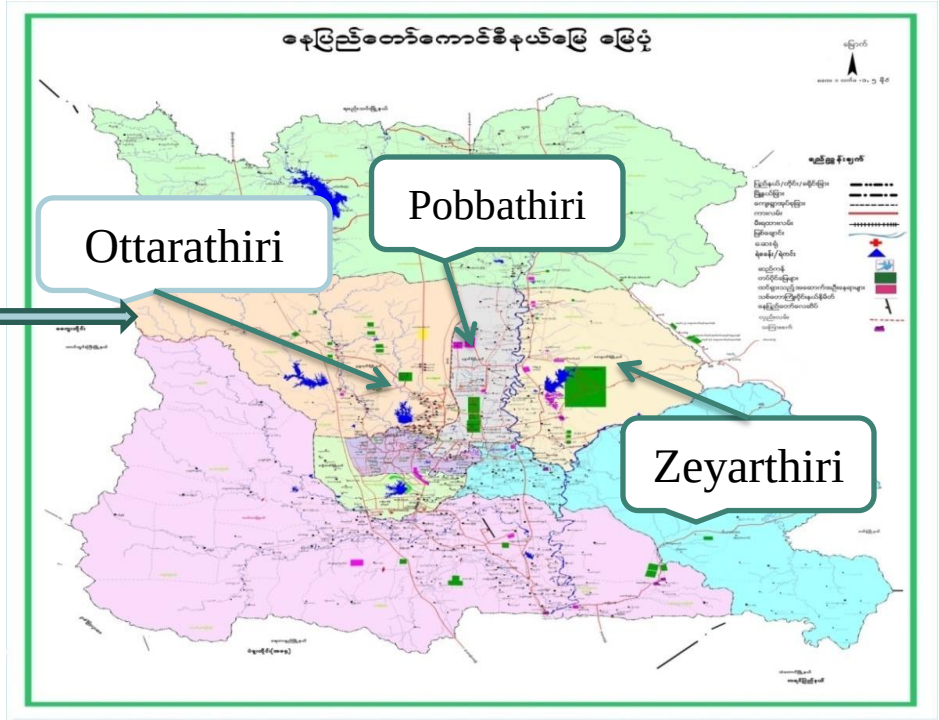
- The research – to examine the trends and status of drinking consumption following a health crisis
- The findings - contribute to supporting small and medium enterprises, as well as commercial groups
- This information is crucial - to comprehend the intake of types of beverage, per capita drinking water and beverage consumption based on different drink types

Types of beverage in Myanmar

Research Objectives

- To categorize the ratio of food cost and income and expenditure of selected households
- To establish the trend of drinking water and beverage consumption
- To identify per capita drinking water and beverage consumption of the selected households in Nay Pyi Taw Council area

Study Area



Source: DOP, 2022

Figure 1. Selected Study areas in Nay Pyi Taw Council Area

Data Collection and Sample Size

- Study areas : Zeyarthiri, Ottarathiri, and Pobbathiri Townships in Nay Pyi Taw Council area
- Data collection period : November 2021
- Sampling method : Purposive random sampling method
- Total sample size : 400 sample households
- Data collection method : face to face interview by using a structured questionnaire

Source: Food Survey Team' photo record, Department of Agricultural Economics, 2021)

- Targeted sample criteria : Main household members managing food at the households

- Primary data - demographic characteristics, household composition by age groups, monthly income, expenditure, total cost of food and drink, cost of specific drink items, the intake amount of monthly drinking water and beverage

Source: Food Survey Team' photo record, Department of Agricultural Economics, 2021)

Adult equivalent

- Equivalence scales and the assumptions on which it is based on various criticisms and used to compare the standard of living of households of different size and composition, take into account the economies of scale resulting from pooling income and expenditure within households. (Martin, H, 2017)

Table 1. Adult equivalent conversion for the age range (years)

Age group	Adult equivalent conversion factor	Adult equivalent	Total Adult equivalent
Above 60 and 60	0.7	99	
50-19	1.0	986	
18-10	1.1	244	1430
9-2	0.7	94	
Under one year	0.5	7	

Source: MOHS, 2019

Data analysis

- Descriptive analysis of quantitative and qualitative data by using STATA statistical software
- Per capita Beverage and drink consumption

$$Per\ capita\ Beverage\ and\ drinking\ water\ consumption = \frac{amount\ of\ household\ monthly\ beverage\ and\ drinking\ water\ consumption}{total\ adult\ equilavent\ number\ of\ the\ household\ members}$$

(Thi Thi Soe et al., 2023)

Results and Discussion

Table 2. Demographic Information of Selected Households (n=400)

Items	Grouping		Frequency	Percent	
Gender	Female		376	94.00	
	Male		24	6.00	
Items	Unit	Average	Maximum	Minimum	SD
Age of respondents	Year	44.37	91	18	12.25
Household size	No.	3.75	13	1	1.76

Source: Survey data of Department of Agricultural Economics, 2021

In Myanmar culture, mostly those of women (mothers) - more responsible for cooking in their families and make the decision not only the different consumption pattern

(Thi Thi Soe et.al, 2023)

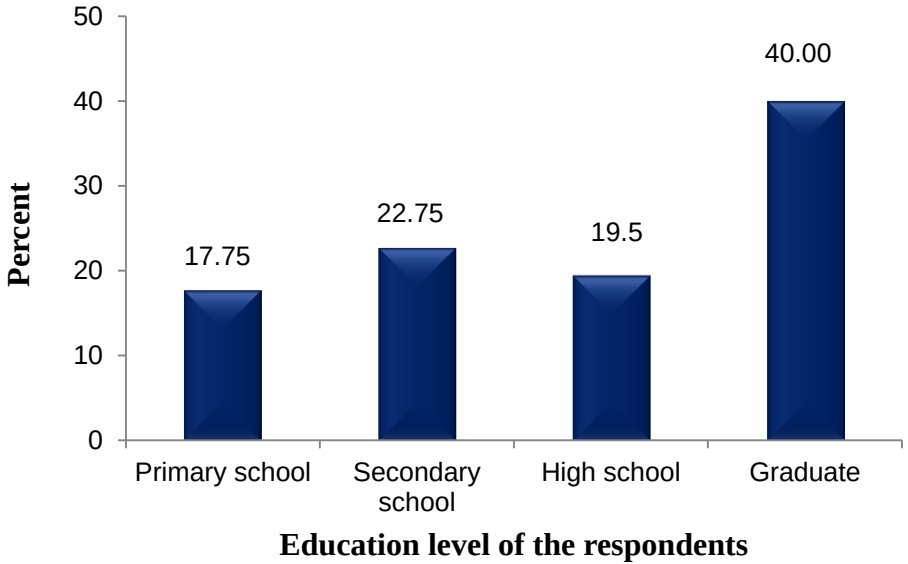


Figure 3. Education level of Respondents of Selected Households (n=400)

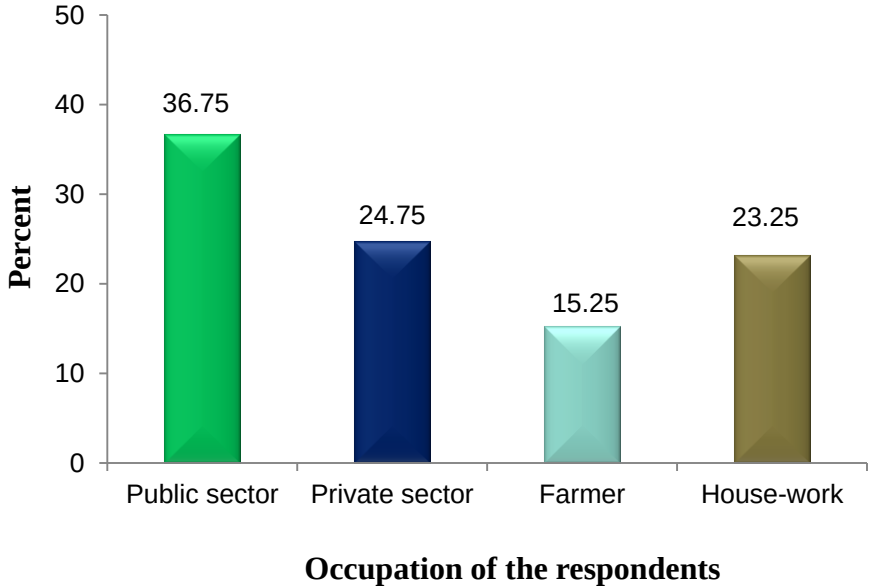


Figure 4. Occupation of Selected Households (n=400)

Source: Survey data of Department of Agricultural Economics, 2021

Table 3. Total household members by adult equivalent of the sample respondents (n= 400)

Items	Frequency
Total household members by age group	1,498
Total household members by adult equivalent	1,430

Source: Survey data of Department of Agricultural Economics, 2021

Table 4. Household Monthly Income, Expenditure and Food Cost of Selected Households

Item	Unit	Average	Maximum	Minimum	SD	N
Monthly Income	US $	232	2073	29	179	400
Expenditure	US $	169	691	29	91	400
Food Cost	US $	115	403	23	57	400

Note: 1US$ = 1773 MMK (Exchange rate of 1st November, 2021)

Table 5. Ratio of Household Monthly Income, Expenditure and Food Cost (Percent) (n=400)

Item	Average	Maximum	Minimum	SD	N
Expenditure/Income	84.37	300.00	23.40	36.50	400
Food cost/Income	59.68	250.00	10.00	30.75	400
Food cost/ Expenditure	70.20	100.00	20.00	14.24	400

Based on country notes, the disruptions caused by COVID-19 have affected the ability of both men and women to access paid work reduced credit availability. (CGIAR, 2021)

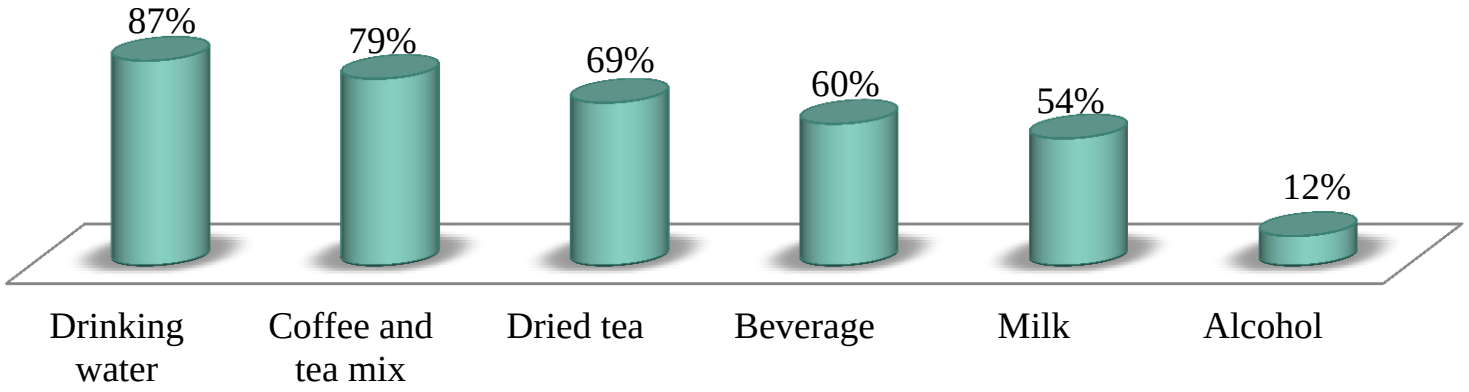


Figure 5. The proportion of various types of drinks and beverages consumed by sample households (n=400)

Source: Survey data of Department of Agricultural Economics, 2021

The average proportion of monthly expenditure on milk - highlighting its significance as a nutritional and essential element in drinking culture with health concerns

(May Thet Htar et.al, 2023)

Table 6. Monthly Cost of drinking water and beverage by the selected households (Percent) (n=400)

No.	Items	Monthly expenditure for drinking water and beverage			
		Average	Maximum	Minimum	N
1	Drinking water	3.01	15.00	0.35	350
2	Coffee and tea mix	3.20	16.47	0.25	319
3	Dried tea	1.11	10.5	0.08	278
4	Beverage	2.93	18.13	0.20	242
5	Milk	3.05	16.67	0.25	217
6	Alcohol	9.29	37.50	1.60	50

Source: Survey data of Department of Agricultural Economics, 2021

Table 7. Preference for different type of drinking water (n=395)

No.	Item	Frequency	Percent
1	Purified water	320	81.01
2	Tube-well water	97	24.56
3	Dam water	23	5.82

Source: Survey data of Department of Agricultural Economics, 2021

Table 8. Amount of Per capita drinking water and beverage consumption

Items	Sample size	Unit		Daily	Monthly	Annually
Drinking water	(n=1212)	Liter	Average	2.31	70.27	843.24
			Maximum	14.09	428.57	5142.84
			Minimum	0.15	4.44	53.28
Coffee and tea mix	(n=1153)	No. cup	Average	0.34	10.31	123.77
			Maximum	2.92	88.89	1066.67
			Minimum	0.01	0.18	2.16
Dried tea	(n=1067)	No. cup	Average	0.006	0.14	1.71
			Maximum	0.120	3.70	44.44
			Minimum	0.000	0.01	0.12
Beverage	(n=684)	Bottle	Average	0.08	2.52	30.28
			Maximum	0.59	18.00	216.00
			Minimum	0.00	0.07	0.90
Milk	(n=746)	Liter	Average	0.06	1.80	21.65
			Maximum	0.49	15.00	180.00
			Minimum	0.00	0.12	1.46
Alcohol	(n=155)	Bottle	Average	0.09	2.63	31.53
			Maximum	0.32	9.68	116.13
			Minimum	0.01	0.20	2.40

Conclusion (Cond;)

- A significant percentage of households allocate a substantial portion of their expenditure to drink costs
- A considerable proportion within households is spent on coffee and tea mix, and drinking water, excluding alcohol
- Purified drinking water emerged as the commonly consumed type among households
- Household monthly expenditures exhibited significant variations, with the lowest proportion attributed to dried tea based on the quantity and price of the consumed items

Conclusion (Cond;)

- It is presumed that purified water and prioritize affordability and express a preference based on health concerns
- The most common drink and beverage - drinking water, followed by coffee and tea mix
- The common preference of purified drinking water among the selected respondents in the study area lean towards a healthy food system
- Signify their preference, involving a combination of diverse drinking water and various types of beverage items

Recommendations

- It is proposed that preferences and demands for various types of drinking water and coffee and tea mix be strengthened to meet local demand, enhancing household health and nutrition
- For future research,
  - small and medium enterprises in the business need to modify and
  - focus on consumer demand, pricing, and trends in drinking, particularly related to purified drinking water and beverage items
- This approach can create a win-win situation that aligns with both producers' offerings and consumers' preferences

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Thank you very much for your kind attention

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