Diet quality of household members by the type of agricultural engagement
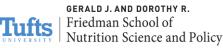
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Aim

To determine if household's active engagement with aquaculture and/or horticulture production had influenced diet quality of household members

➢ Households were named by the type of engagement to aquaculture and/or horticulture production

Engagement with

✓ aquaculture and horticulture named as "both engagements"

✓ aquaculture or horticulture named as "either engagements"

✓ No engagements named as "neither engagements"

➢ *Dietary data collection*

Preceding 7 days quantitative dietary intakes of households including food sources

Adult male equivalent units (AMEs): to allocate age and sex specific distribution of individual's dietary intake

➢ *Diet quality was assessed using nutrient adequacy in the diet*

✓ Nutrient Adequacy Ratio (NAR)

$$NAR = \frac{Daily\ nutrient\ intake}{Recommended\ nutrient\ intake}$$

✓ Overall diet quality was measured using NAR

$$MAR = \frac{\sum NAR\ (each\ truncated\ at\ 1)}{Number\ of\ nutrients}$$

➢ Iron, calcium, zinc, vitamin A, thiamine, riboflavin, niacin, vitamin B6, folic acid, vitamin B12, and vitamin C

DIET QUALITY OF HOUSEHOLD MEMBERS BY TYPE OF HOUSEHOLD ENGAGEMENT

Type of household engagement	Mean (MAR)	SD	df	F	Sig	n
Neither engagement	0.36	0.20	2, 14330	101.42	<0.001	1,452
Either engagement	0.38	0.20				8,432
Both engagements	0.43	0.23				4,449
Total	0.39	0.21				14,333

MULTIPLE REGRESSION PREDICTING DIET QUALITY OF HOUSEHOLD MEMBERS OVER INDEPENDENT VARIABLES

Model fit measures			Overall Model Test		
Observation	R^2	Adjusted R^2	F	df	Sig
14333	0.21	0.21	286.42	13, 14319	<0.001

Parameters	B	SE	t	Sig	95% CI	
Both engagements		Reference				
Either engagement	-0.05	0.00	-12.97	<0.001	-0.05 to -0.04	
Neither engagement	-0.06	0.01	-10.81	<0.001	-0.07 to -0.05	
Daily food expenditure	0.07	0.00	47.7	<0.001	0.07 to 0.07	
Graduate level		Reference				
College level	-0.01	0.02	-0.75	0.452	-0.04 to 0.02	
Secondary level	-0.05	0.01	-3.64	<0.001	-0.08 to -0.02	
Primary level	-0.06	0.01	-4.36	<0.001	-0.09 to -0.03	
Gender	-0.04	0.00	-9.23	<0.001	-0.04 to -0.03	

CONCLUSIONS

➤ Better diet quality was associated with the members from households had both engagements, compared to other two type of engagements

➤ Daily household's food expenditures and level of education of adult household members influenced diet quality

➤ Household engagements with homestead aquaculture and horticulture production, has the potential to improve diet quality of household members

Thank you

PAIRWISE COMPARISON OF MEAN MAR WITH EQUAL VARIANCE

Type of household engagement	Contrast	SE	Tukey		
			t	Sig	95% CI
Either vs neither engagement	0.02	0.01	3.48	<0.01	0.007 to 0.035
Both vs neither engagement	0.07	0.01	11.04	<0.001	0.056 to 0.085
Either vs both engagement	0.05	0.00	12.67	<0.001	0.040 to 0.059

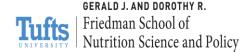| Parameters	B	SE	t	Sig	95% CI	β
Both engagements		Reference				
Either engagement	-0.05	0.00	-12.97	<0.001	-0.05 to -0.04	-0.11
Neither engagement	-0.06	0.01	-10.81	<0.001	-0.07 to -0.05	-0.09
Daily food expenditure	0.07	0.00	47.7	<0.001	0.07 to 0.07	0.37
Salary or business		Reference				
Self-employment	0.00	0.01	0.00	0.998	-0.02 to 0.02	0.00
Daily wage labor	-0.04	0.01	-4.25	<0.001	-0.06 to -0.02	-0.04
No earning	-0.06	0.01	-7.49	<0.001	-0.07 to -0.04	-0.12
Graduate level	0.00	Reference				0
College level	-0.01	0.02	-0.75	0.452	-0.04 to 0.02	-0.01
Secondary level	-0.05	0.01	-3.64	<0.001	-0.08 to -0.02	-0.10
Primary level	-0.06	0.01	-4.36	<0.001	-0.09 to -0.03	-0.13
Dhaka		Reference				
Barisal	-0.03	0.00	-7.76	<0.001	-0.04 to -0.03	-0.07
Khulna	-0.02	0.00	-5.11	<0.001	-0.03 to -0.01	-0.05
Age	0.00	0.00	-26.79	<0.001	0.00 to 0.00	-0.22
Gender	-0.04	0.00	-9.23	<0.001	-0.04 to -0.03	-0.08
Intercept	0.50	0.01	34.35	<0.001	0.47 to 0.53	.

INTERPRETATION

- Dietary intake of subsistence farmers largely depend on food supplies from their own farm

- Diversified agricultural production of households (plant and animal source foods) improve diet quality of household members

- A small amount of ASF to a plant-based diet, can enhance the absorption of vitamins and minerals

➢ *Minimum dietary diversity* was not achieved preceding 24 h
  – 54% women (10-49 years)
  – 63% children (6-24 months)

✓ Adequate dietary nutrient intake is crucial for tackling multiple nutritional situation
✓ Improving diet for all is much more logical and achievable goal for agriculture than addressing childhood stunting!

Source: FSNSP 2015