

Validation of a Culture-specific Dietary Assessment Questionnaire in the Adult Population of Trinidad and Tobago
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INTRODUCTION

- ❑ Dietary intake is one of the most modifiable risk factors for reducing and preventing non-communicable diseases (NCDs).
- ❑ Epidemiological studies use food frequency questionnaires (FFQ) as a dietary assessment tool to help determine diet-disease relationships.
- ❑ Trinidad and Tobago has no validated dietary assessment questionnaire (DAQ) to assess dietary patterns of the population, therefore a culture-specific DAQ which includes local composite foods, mixed foods and street foods would identify the dietary patterns specific to population of Trinidad and Tobago.
- ❑ Food and nutrient intake estimates from this DAQ may be useful in improving primary prevention strategies through the establishment of nutrition policies, and nutrition education and intervention programs that can help reduce the risk and prevent onset of several NCDs.

OBJECTIVE

To determine the validity of a culture-specific semi-quantitative culture-specific dietary assessment questionnaire (DAQ) when compared to multiple 1-day food records to assess nutrient intake estimates in the adult population of Trinidad and Tobago.

METHODS

- ❑ A 154-item electronic semi-quantitative DAQ for the Trinidad and Tobago population was created using Google forms.
- ❑ The questionnaire was administered to 91 participants ≥ 18 years.
- ❑ Four 1-day food records were collected from participants over a period of 3 months.
- ❑ The food records consisted of two weekdays and two weekend days
- ❑ The nutrient intake estimates for the DAQ and the multiple food records were determined using Nutrition Data System for Research version 2018.
- ❑ The DAQ was validated against the weighted average of four 1-day food records completed by 80 of the 91 participants.
- ❑ Validity was determined with paired t-tests, bivariate correlations and cross-classifications using SPSS Version 26.



RESULTS

Table 1. Nutrient intake estimates of DAQ and Multiple Food Records

Nutrients	Mean ± SD ^a			Correlations			Agreement ^f
	DAQ ^b	FR ^b	p-value	r ^b	En-adj r ^d	Deatt r ^e	%
Energy (kcal)	1769 ± 670	2191 ± 678	<0.001	0.2	0.2	0.2	64
Carbohydrates (g)	231.3 ± 96.9	303.9 ± 110.5	<0.001	0.3**	0.4**	0.4	58
Protein (g)	70.4 ± 26.9	82.0 ± 27.5	0.003	0.3**	0.4**	0.4	64
Fats (g)	66.45 ± 28.6	76.7 ± 28.6	0.017	0.1	0.2	0.2	54
SFA (g)	18.9 ± 7.7	23.2 ± 8.6	0.001	0.3**	0.4**	0.3	63
Omega3 (g)	2.5 ± 1.3	2.8 ± 1.6	0.562	0.1	0.2	0.2	60
Trans fat (g)	0.9 ± 0.5	1.6 ± 0.9	0.000	0.3**	0.5**	0.5	75
Cholesterol (mg)	201.3 ± 168.7	232.5 ± 110.5	0.002	0.6**	0.7**	0.6	76
Fiber (g)	29.5 ± 15.2	28.1 ± 11.9	0.562	0.4**	0.5**	0.5	73
Vitamin A (IU)	15236.3 ± 11160	11160.6 ± 8082	0.001	0.3*	0.4**	0.4	59
Vitamin C (mg)	176.4 ± 110.7	155.8 ± 113.1	0.034	0.3*	0.3**	0.4	63
Vitamin D (µg)	5.5 ± 3.4	5.2 ± 4.0	0.127	0.4**	0.5**	0.5	63
Vitamin E (mg)	12.4 ± 6.2	10.8 ± 4.5	0.057	0.2	0.3**	0.2	63
Vitamin B12 (mg)	3.9 ± 2.2	3.8 ± 2.0	0.649	0.3**	0.4**	0.4	65
Folate (µg)	526.2 ± 251.8	562.0 ± 238.3	0.287	0.2*	0.3*	0.3	65
Choline (mg)	321.8 ± 161.9	330.8 ± 110.6	0.238	0.4**	0.5**	0.5	69
Iron (mg)	15.1 ± 6.8	15.9 ± 5.3	0.057	0.2**	0.3**	0.3	56
Calcium (mg)	682.9±302.7	870.5±342.2	0.001	0.1	0.3**	0.3	60
Phosphorus (mg)	1093.4±420.7	1226.8±354.1	0.017	0.2*	0.4**	0.4	58
Sodium (mg)	2903.8±1203.7	3407.5±1181.8	0.003	0.2	-0.1	-0.03	48
Potassium (mg)	3101.4±1427.2	2921.2±1055.3	0.289	0.3**	0.5**	0.5	69
Zinc (mg)	9.5±3.9	9.8±3.4	0.391	0.2	0.3*	0.3	64

^a Determined with paired t-tests
^b DAQ=dietary assessment questionnaire; FR=multiple food records (weighted average of 4 one-day food records)
^c Pearson's i= Food s used to determine correlations (r) between the log transformed crude nutrient crude intake estimates of FFQ and FR
^d Correlations between DAQ and FR's energy-adjusted nutrient intake estimates; nutrients were log transformed.
^e Correlations between DAQ and FR corrected for between- and within-person variations of nutrient intake
^f % agreement within 1 quintile of the exact match of the cross-classified ranked estimates between DAQ and FR
* p<0.05 level (2-tailed).
** p<0.01 level (2-tailed).

CONCLUSION

Our findings show that the culture-specific DAQ assessed in this study has a good level of validity. This DAQ can be considered a valid tool for assessing intake of several nutrients for adults living in Trinidad and Tobago.

