THE REASONS FOR VITAMIN-MINERAL SUPPLEMENT INTAKE

AMONG SECONDARY SCHOOL STUDENTS AND ITS CORRELATION WITH DIETARY HABITS AND NUTRITION STATUS

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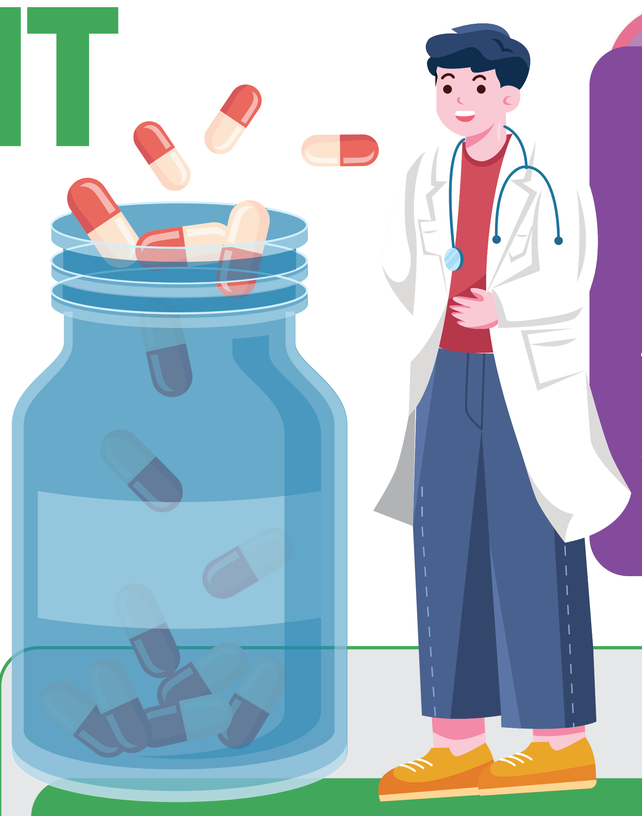
BACKGROUND

Prevalence rates of vitamin-mineral supplement (VMS) use among adolescents and the general population are observed to be increasing. This study aimed to determine the association of dietary practice and nutrition status with the reasons for vitamin-mineral supplement intake among adolescents.



METHODS

The Adolescent Health and Nutrition Survey 2017 was a cross-sectional study, employing a two-stage cluster sample design to produce a representative sample of students in government schools. The representatives in this study were 9077 secondary school adolescents aged 13 to 17 years old who reported consuming VMS were included in this study. Descriptive and multiple logistic regression analysis using complex sample was performed for data analysis.

RESULTS

The main reasons for VMS consumption were parent's advice (43.6%) and followed by self-awareness (31.7%), doctor's prescription (15.6%), other unspecified reasons (6.8%), and friend influences (2.3%). Using multinomial regression analysis, the expected risks of taking VMS due to doctors, parents, self-awareness, and friends versus other unspecified reasons were higher among adolescents who sometimes experienced hunger, had stunted growth, and were male. The expected risks of taking VMS were lower among Chinese, those who did not take breakfast, and those who eat out daily.

Table 1: *Vitamin and mineral consumption characteristics among secondary school adolescent in Malaysia*

	Frequency n (%)
Type of vitamin (N=9077)	
Multivitamin	1027 (11.3%)
Vitamin C	6308 (69.5%)
Iron	697 (7.7%)
Others	1045 (11.5%)
Reason of taking	
Prescribed by doctor	1415 (15.6%)
Advised by parent	3960 (43.6%)
Self-awareness	2880 (31.7%)
Friend influence	207 (2.3%)
Other unspecified reasons	615 (6.8%)
Frequency of taking	
Everyday	2897 (31.9%)
5-6 times / week	1075 (11.8%)
3-4 times / week	1932 (21.3%)
1-2 times / week	3173 (35.0%)

Table 2: *Factors associated with VMS prescription from multivariate multinomial logistic regression*

	Doctor's instruction vs other unspecified reasons RRR (95% CI)	Parent's advices other unspecified reasons RRR (95% CI)	Self-awareness vs other unspecified reasons RRR (95% CI)	Friends influence vs other unspecified reasons RRR (95% CI)
Gender (n = 9077)				
Boy (n = 4795)	0.90 (0.74 – 1.10)	0.70 (0.59 – 0.84)**	1.13 (0.94 – 1.35)	2.29 (1.60 – 3.29)**
Girl (n = 4282)	1	1	1	1
Strata (n = 9077)				
Urban (n = 5430)	0.95 (0.78 – 1.16)	1.40 (1.17 – 1.69)**	1.00 (0.84 – 1.21)	0.81 (0.58 – 1.13)
Rural (n = 3647)	1	1	1	1
Ethnicity (n = 9077)				
Malay (n = 6107)	0.54 (0.28 – 1.06)	0.76 (0.40 – 1.45)	0.84 (0.43 – 1.62)	1.30 (0.36 – 4.76)
Chinese (n = 1287)	0.41 (0.20 – 0.84)*	0.96 (0.49 – 1.89)	0.78 (0.39 – 1.56)	1.22 (0.31 – 4.78)
Indian (n = 544)	1.38 (0.63 – 3.03)	1.06 (0.49 – 2.24)	0.98 (0.45 – 2.11)	1.07 (0.23 – 4.94)
Bumiputra Sabah (n = 610)	0.69 (0.32 – 1.46)	0.79 (0.39 – 1.60)	0.73 (0.35 – 1.51)	1.31 (0.32 – 5.41)
Others (n = 215)	1	1	1	1
Height for age (n = 9070)				
Stunted (n = 786)	1.51 (1.11 – 2.10)*	1.09 (0.80 – 1.50)	0.96 (0.70 – 1.33)	0.72 (0.38 – 1.37)
Normal (n = 8281)	1	1	1	1
Experience of hunger (n = 9063)				
Never (n = 386)	1	1	1	1
Rare (n =1867)	0.96 (0.76 – 1.20)	0.92 (0.75 – 1.12)	0.74 (0.49 – 1.13)	1.61 (1.10 – 2.35)*
Sometimes (n = 2655)	1.41 (1.08 – 1.85)*	1.26 (0.98 – 1.62)	1.38 (1.07 – 1.77)*	1.98 (1.27 – 3.08)**
Always (n = 4155)	0.81 (0.51 – 1.27)	0.79 (0.53 – 1.19)	0.74 (0.49 – 1.13)	1.50 (0.73 – 3.09)
Dietary behavior for the past month				
a) Vegetable intake at least three times daily (n = 9050)				
Do not eat three times daily (n = 5726)	1.08 (0.80 – 1.46)	1.13 (0.86 – 1.48)	1.16 (0.88 – 1.54)	1.16 (0.70 – 1.91)
Eat three times daily (n=3324)	1	1	1	1
b) Fruit and vegetables intake at least five times daily (n=9050)				
Not meet 2 serving fruit and 3 serving vegetable) (n=6773)	1.24 (0.89 – 1.73)	1.18 (0.87 – 1.59)	1.01 (0.75 – 1.38)	1.46 (0.82 – 2.58)
Meet 2 serving fruit and 3 serving vegetable) (n=2277)	1	1	1	1
c) Soft drink intake at least once a day (n=9050)				
Do not consume once a day (n=5515)	0.94 (0.77 – 1.15)	1.13 (0.94 – 1.35)	1.07 (0.89 – 1.29)	0.93 (0.67 – 1.30)
Consume at least once in a day (n=3535)	1	1	1	1
Meal pattern				
a) Breakfast intake frequency (n=9064)				
Did not take breakfast (n= 800)	0.53 (0.39 – 0.72)**	0.50 (0.38 – 0.66)**	0.59 (0.45 – 0.78)**	0.70 (0.41 – 1.18)
7 days / week (n=2787)	0.76 (0.61 – 0.96)*	1.08 (0.89 – 1.31)	0.96 (0.79 – 1.18)	0.91 (0.63 – 1.32)
1 – 6 days / week (n=5477)	1	1	1	1
b) Eating outside frequency (n=9040				
Never (n=794)	0.74 (0.53 – 1.04)	0.75 (0.56 – 1.01)	0.95 (0.71 – 1.26)	1.04 (0.60 – 1.80)
7 times / week (n=319)	0.86 (0.53 – 1.39)	0.63 (0.41 – 0.97)*	0.72 (0.46 – 1.11)	1.43 (0.71 – 2.96)
4 – 6 times / week (n=1112)	0.95 (0.71 – 1.29)	0.80 (0.74 – 1.26)	0.92 (0.70- 1.21)	1.29 (0.82 – 2.05)
1-3 times / week (n=6815)	1	1	1	1
c) Snack food consumption (n=9046)				
Never (n=249)	0.93 (0.55 – 1.60)	0.66 (0.41 – 1.08)	0.70 (0.43 – 1.16)	0.99 (0.40 – 2.41)
7 times or more / week (n=698)	0.84 (0.57 – 1.23)	0.99 (0.71 – 1.38)	1.10 (0.78 – 1.55)	1.03 (0.54 – 1.94)
4 – 6 times / week (n=2305)	0.74 (0.59 – 0.93)	0.91 (0.74 – 1.11)	0.93 (0.76 – 1.14)	1.23 (0.85 – 1.76)
1 – 3 times / week (n=5811)	1	1	1	1

** Significant at p value < 0.001 * Significant at p value < 0.05
RRR: Relative Risk Ratio

CONCLUSION

Gender, height for age, strata, ethnicity, hunger experience, eating out, and breakfast intake frequency were associated with the reasons for VMS intake. Other dietary behaviour and meal patterns did not show significant associations with the reason for VMS intake Understanding factors associated with the reason for VMS intake could determine the essential actions for nutrition education on VMS usage, thus promoting healthier dietary habits.

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Keywords: Vitamin mineral supplement, adolescent, dietary supplement, Malaysia