Different intentions and self-efficacies toward eating breakfast and associated factors among breakfast skippers in Japanese university students

Makiko Nakade, Yuya Shiozawa, Tomohiro Itagoshi, Naomi Aiba

[1]Tokai Gakuin University, Japan. [2]Kanagawa Institute of Technology, Japan.



【Objective】 To clarify the characteristics of breakfast skippers with different intentions and self-efficacies toward eating breakfast among university students.

【Methods】 In 2016, a self-administered questionnaire survey was conducted at a university in Japan (n=2816, response rate: 86.5%). Multinomial logistic regression analyses were performed to compare characteristics (lifestyle, attitude, knowledge and environmental factors) of breakfast eaters with four categories of breakfast skippers: those with intention and self-efficacy in increasing breakfast frequency (**IS**); with intention, without self-efficacy (**INS**); without intention, with self-efficacy (**NIS**); and with neither intention nor self-efficacy (**NINS**).

【Results】 Compared with breakfast eaters, breakfast skippers without self-efficacy (**INS, NINS**) were more likely to eat alone and lack knowledge about a well-balanced diet. Those without intention (**NIS, NINS**) reported less frequency of breakfast to maintain own health. Additionally, the **INS** students were less likely to exercise, while be more likely to participate in circle activities and have financial limitations. The **NINS** students were less likely to participate in circle activities or report weight management behavior. Current smoking and having late-night snacks were commonly seen in breakfast skippers (**Table 1**).

【Conlusion】 These results suggest the need for approaches considering different intentions and self-efficacies toward eating breakfast.

Table 1 Odds ratios for correlated lifestyles, attitudes and knowledge, and environmental factors, according to multinomial logistic regression model

	Versus Breakfast eaters; Odds ratios (95% confidence interval)			
	Breakfast skippers with intention and self-efficacy (IS) (n = 262)	Breakfast skippers with intention, without self-efficacy (INS) (n=244)	Breakfast skippers without intention, with self-efficacy (NIS) (n=103)	Breakfast skippers without intention, without self-efficacy (NINS) (n=296)
Smoking status				
Never/past smoker	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Current smoker	2.22 (1.49 - 3.31) ***	2.02 (1.33 - 3.06) **	2.22 (1.22 - 4.03) **	3.06 (2.06 - 4.54) ***
Has late-night snacks (days/week)				
Rarely	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
≥ 2	1.65 (1.25 - 2.16) ***	1.85 (1.38 - 2.47) ***	1.56 (1.03 - 2.37) *	1.44 (1.10 - 1.90) **
Eats breakfast with family or friends				
Yes	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
No	1.31 (0.93 - 1.84)	3.27 (2.07 - 5.16) ***	1.71 (0.99 - 2.96)	2.67 (1.79 - 3.98) ***
Frequency of exercise (days/week)				
5–7	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
2–4	1.24 (0.71 - 2.17)	1.42 (0.76 - 2.63)	1.12 (0.48 - 2.60)	1.36 (0.74 - 2.51)
0–1	1.58 (0.94 - 2.64)	1.84 (1.04 - 3.27) *	1.12 (0.51 - 2.45)	1.58 (0.89 - 2.78)
Alcohol intake (days/week)				
< 1	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
≥ 1	1.19 (0.86 - 1.64)	1.26 (0.90 - 1.76)	0.72 (0.42 - 1.22)	1.05 (0.75 - 1.46)
Participates in circle activities				
No	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Yes	1.08 (0.82 - 1.44)	1.53 (1.14 - 2.06) **	0.88 (0.57 - 1.36)	0.72 (0.54 - 0.97) *
Knowledge about a well-balance				
Yes	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
No	1.05 (0.80 - 1.39)	1.88 (1.36 - 2.59) ***	1.30 (0.84 - 2.01)	1.44 (1.07 - 1.94) *
Breakfast frequency needed to maintain health (days/week)				
Every day	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
≤ 6	1.23 (0.87 - 1.73)	1.22 (0.85 - 1.74)	4.11 (2.71 - 6.25) ***	6.44 (4.88 - 8.49) ***
Weight management behavior				
Yes	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
No	1.06 (0.81 - 1.40)	1.13 (0.84 - 1.51)	1.22 (0.80 - 1.88)	1.59 (1.19 - 2.12) **
Financial limitations				
No	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Yes	1.12 (0.86 - 1.48)	1.44 (1.09 - 1.92) *	0.86 (0.56 - 1.31)	1.12 (0.85 - 1.48)
Locations nearby to buy breakfast				
Yes	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
No	0.81 (0.52 - 1.26)	0.73 (0.45 - 1.18)	0.58 (0.28 - 1.19)	1.28 (0.89 - 1.85)

Odds ratios adjusted by academic department, year, sex, and living arrangements. * P<0.05, ** P<0.01, *** P<0.001.