

Self-reported rate of eating and prevalence of obesity among children in the great east Japan earthquake affected prefecture

A. Nishide¹, H. Matsubara², M. Nagai², S. Kure^{2,3} and S. Kuriyama¹

¹International Research Institute of Disaster Science, Tohoku University, Sendai, Japan, ²Tohoku Medical Megabank Organization, Tohoku University, Sendai, Japan and ³Department of Pediatrics, Graduate School of Medicine, Tohoku University, Sendai, Japan.

An immediate weight gain among children in the great east Japan earthquake affected prefectures, that could presume due to the change of eating behaviour after the earthquake, was reported⁽¹⁾. Eating behaviour, such as eating quickly, has been advised for weight management. Slower eating might allow satiation to register before having too much food⁽²⁾. Several previous observation studies^(3,4) have shown the association between eating speed and prevalence of obesity in Japanese children using the data of children in where was not affected by the disaster. Thus, the aim of this study was to investigate whether the association between eating speed and prevalence of obesity might presence among children in the affected area.

We conducted a cross-sectional study using the baseline data of cluster randomization trial involving one affected primary school, which was defined by the location where has over 5% of fatality rate by the disaster⁽⁵⁾, and five non-affected school in the city of Miyagi prefecture. Brief self-administered diet history questionnaire was distributed to the parents of all six school children in first grade to fifth grade aged 6 yr to 11 yr on August 29th, 2017 (n = 1397). Study participants were 403 children whose parents returned the questionnaires (response rate: 28.8%). Of these, we analysed 402 children after excluding child who answered “unknown” for its eating speed. Eating speed was defined as item (“How fast is your rate of eating?”) of which answers were chosen from five qualitative categories, which were divided into three categories as fast (very fast or fast), moderate (moderate), and slow (slow or very slow). Obesity was defined as obesity index; (real weight – standard weight)/standard weight × 100, more than 20%⁽⁶⁾. We used logistic regression analysis to estimate multivariate adjusted odds ratio (OR), 95% confidence interval (CI) for prevalence of obesity in each eating speed category, with the moderate in non-affected used as a reference.

Table 1. Odds ratios (ORs) and 95% confidence intervals (CIs) of obesity by three categories of eating speed.

	Eating Speed	n	OR	affected school		p
				95%CI		
				low	upper	
affected	fast	28	4.18	1.43	12.21	0.009
	moderate	51	1.65	0.55	4.98	0.370
	slow	45	0.61	0.15	2.37	0.472
non-affected	fast	67	3.78	1.56	9.16	0.003
	moderate	107	1.00	(ref)		
	slow	104	0.69	0.24	1.94	0.480

*Adjustment for age, sex

Compared with moderate speed of eating in non-affected, “fast” was significantly associated with a higher prevalence of obesity in both affected and non-affected school (p = 0.009, p = 0.003). Odds ratio of fast in affected was slightly higher than this in non-affected, but not huge different. This study has limitations that we did not actually observe the eating speed and anthropometry, because these data were obtained from self-administered questionnaires. Although this limitation, the results could be interpreted the association between rate of eating and prevalence of obesity among children in affected school might not be effected by the disaster. To determine the factors to associate with an immediate weight gain among children after the disaster, further studies with an assessment at immediately after disaster was needed.

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