Associations Between Food Literacy and Food Insecurity Among College Students in Lebanon: A Cross-Sectional Study

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Objectives: The present study aims to explore the eating and food literacy behaviours of college students in Lebanon and to examine their associations with food insecurity (FI).

Methods: An online survey was administered among college students enrolled in public and private universities in Lebanon. FI was assessed using the Food and Drug Administration (FAO) eightitem Food Insecurity Experience Scale (FIES), previously validated and used in this context. The eating and food literacy behaviors of college students were assessed using the Eating and Food Literacy Behaviors (EFLBQ) tool. Multiple logistic regression analyses were conducted to investigate the associations of food literacy behaviors with FI.

Results: FI was reported among 39% of study participants. Approximately half of college students in the study sample reported that they "never" or "seldom" ate a balanced diet (55.6%) and consumed healthy food (47.7%). Less frequent food literacy behaviors reported

among college students included: "select healthy foods "(37.5%)", and" plan what I will eat" (33.2%). However, most college students do "often" or "always" eat foods convenient to them (82.9%) and prepare food made quickly (71.9%). Significant differences were observed in several food literacy behaviors between food secure and insecure students. For instance, food insecure students less frequently buy foods that are healthy (p < 0.001), select healthy foods (p = 0.004), cook healthy foods (p = 0.020) and choose nutritionally balanced meals (p < 0.001) compared to food secure ones. Multiple logistic regression analyses showed that behaviors related to nutrition and food preparation were all statistically independently associated with FI. Food insecure participants were significantly less likely to "choose nutritionally balanced meals (OR = 2.10, 95% CI:1.45,3.03), "read nutrition information before" (OR = 1.93, 95% CI:1.31,2.84), or "buy foods that are healthy" (OR = 1.87, 95% CI:1.26,2.78). In terms of food preparation, food insecure participants were 1.85 times more likely to report that they "never" or "seldom" accurately measure dry food ingredients when preparing food (OR = 1.85, 95% CI:1.30,2.64).

Conclusions: Findings highlight the need for nutrition education interventions to improve food literacy and alleviate FI among college students in Lebanon.

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