

Supplementary file 1
Supplementary data associated with this article

Supplementary Table 1

Summary of Studies Examining the Association Between Diet and Mental Health in Emerging Adulthood

Author, year, country, study aim(s), design	Sample characteristics (N, participants, age (M, range), ethnicity)	Measure(s) of diet	Measure(s) of mental health	Relevant findings (diet, mental health, and diet-mental health associations)	Quality rating
Bakhtiyari et al., 2013	N= 1782 (54.2% female)	Processed food intake – 24-hour Diet Recall and FFQ scores converted to <i>low</i> (<1 consumption per week), <i>medium</i> (1-2 per week), <i>high</i> (>2 per week) average consumption rates	Anxiety – State-Trait Anxiety Inventory (STAI; Spielberger et al., 1983)	Diet – High (44.1%) and moderate (40.3%) intake of processed foods was common. Low intake (15.6%) was less frequent. Mental Health – State anxiety rates were low (6.3%), medium to low (44.0%), medium to high (45.3%), and high (4.4%). Trait anxiety rates were low (4.8%), medium to low (50.8%), and medium to high (44.4%). Association/s – Statistically significant relationship between processed food consumption and state and trait anxiety (p<0.0001). Those with high intake of processed foods had significantly greater odds of having increased state and trait anxiety than those reporting a low processed food intake (state OR: 4.73, 95% CI 2.89-12.54; trait OR: 4.91, 95% CI 2.88-13.99). Same was true for those reporting moderate versus low intake of processed foods (state OR: 2.01, 95% CI 1.31-5.02; trait OR 2.11, 95% CI 1.29-4.17). Adjusted for age, gender, SES, total calorie intake, BMI, smoking status, mental illness, and sedative drug use.	Strong
Iran	Participants: Community dwelling persons				
Aim: To examine the relationship between processed food consumption behaviour and anxiety	Age range: 18-35 years				
Cross-sectional	Mean age: Males 26.3y (SD 3.5y); females 25.8y (SD 2.8y)				
	Ethnicity: Unstated				
Conner et al., 2015	N= 405 (67.0% female)	Unhealthy and healthy diet proxies – 13-Day Food Diary recording daily	Positive and negative affect (PA/NA) – 13-Day Mood Diary assessing PA and NA.	Diet – Average daily intake of fruit (M 1.16, SD 0.76, range 0-4) and vegetables (M 1.27, SD 0.75, range 0-3.5) below recommended levels; average daily intake of sweets	Weak
New Zealand					

Author, year, country, study aim(s), design	Sample characteristics (<i>N</i> , participants, age (<i>M</i> , range), ethnicity)	Measure(s) of diet	Measure(s) of mental health	Relevant findings (diet, mental health, and diet-mental health associations)	Quality rating
<p>Aim: To determine whether FVI is associated with markers of wellbeing beyond happiness and life satisfaction</p> <p>Micro-longitudinal, correlational</p>	<p>Participants: University students</p> <p>Age range: 17-25y</p> <p>Mean age: 19.9y (SD 1.6y)</p> <p>Ethnicity: European (81.3%), Asian (9.9%), Maori or Pacific Islander (4.2%), Other (4.6%)</p>	<p>consumption of fruit, vegetables, hot chips, and sweets. Responses ranged from 0 (none) to 4 (4+ servings).</p>	<p>PA (e.g. relaxed) and NA (e.g. depressed) adjectives rated on applicability from 1 (not at all) to 5 (extremely) each day. Responses averaged across items for total daily score.</p>	<p>(<i>M</i> 0.63, <i>SD</i> 0.49, range 0-2.83), and chips (<i>M</i> 0.27, <i>SD</i> 0.33, range 0-2.54) was relatively low.</p> <p>Mental Health – Average daily positive PA (<i>M</i> 3.01, <i>SD</i> 0.50, range 1.24-4.20) higher than average daily NA (<i>M</i> 1.68, <i>SD</i> 0.48, range 1.00-3.25).</p> <p>Association/s – Between-person analyses: Fruit ($r = .176$, $p < .001$) and vegetable ($r = .109$, $p < .05$) intake associated with PA. Chip consumption associated with NA ($r = .134$, $p < .01$)</p> <p>Within-person analyses: Fruit ($r = .026$, $p < .05$), vegetable ($r = .041$, $p < .001$) and sweets ($r = .029$, $p < .05$) intake associated with PA. Vegetable intake inversely associated with NA ($r = -.018$, $p < .05$).</p> <p>Did not adjust for additional demographic or lifestyle variables</p>	
<p>Errisuriz et al., 2016</p> <p>USA</p> <p>Aim: To investigate the relationship between perceived stress and dietary choices and the moderating effect of perceived ability to manage stress</p> <p>Cross-sectional</p>	<p><i>N</i> = 736 (58.8% female)</p> <p>Participants: University students</p> <p>Age range: Unstated</p> <p>Mean age: 18.9y (SD 0.6y)</p> <p>Ethnicity: White (51.0%), Asian American/Pacific Islander (21.8%), Hispanic (19.8%),</p>	<p>Unhealthy and healthy diet proxies – single 7-point Likert-scale item measured consumption of 8 unhealthy food/beverage items (“during the past 7 days, how many times did you eat/drink the following things?”). Response options ranged “never” to 4+ times per day”.</p>	<p>Stress – single item, “on a scale from 1 (not stressed at all) to 10 (very stressed), how would you rate your average level of stress in the past 30 days?”</p>	<p>Diet – Independent findings not reported.</p> <p>Mental Health – Independent findings not reported.</p> <p>Association/s – Perceived stress was positively associated with past week consumption of multiple unhealthy diet indicators (soda, energy drink, salty snack, frozen food and fast food; $p < .05$)</p> <p>Perceived stress management moderated the relationship between stress and sweet snack consumption. Those with low perceived stress management consumed greater amounts of sweet snacks ($B = 0.09$, $SE = 0.04$, $p = 0.04$)</p> <p>Concluded that greater stress is associated with poorer diet amongst university students. The relationship between</p>	Weak

Author, year, country, study aim(s), design	Sample characteristics (<i>N</i> , participants, age (<i>M</i> , range), ethnicity)	Measure(s) of diet	Measure(s) of mental health	Relevant findings (diet, mental health, and diet-mental health associations)	Quality rating
	Black (2.2%), Other (5.2%)	FVI measured by asking how many servings of each fruit and vegetable item is usually consumed per day. Response options ranged from “0 servings” to “5 or more servings”.		stress and sweet snack consumption was exacerbated amongst those who reported low ability to manage stress. Adjusted for gender, race/ethnicity, and BMI.	
Fabian et al., 2013 Puerto Rico Aim: To describe the dietary patterns of college students in Puerto Rico and the association of these patterns with perceived academic stress Cross-sectional	<i>N</i> = 275 (67.6% female) Participants: University students Age range: 21-30y (<i>n</i> = 242, <i>M</i> 28.59y, <i>SD</i> 9.57y); 31+y (<i>n</i> = 33, <i>M</i> 33.33y, <i>SD</i> 11.07y) Mean age: As above Ethnicity: Unstated	Diet quality (DQ) – FFQ and modified DQI used to provide a measure of overall diet quality. Total DQI scores (range 0 – 65) categorised into “adequate” (scores of ≥ 33) or “inadequate” (scores of <33) dietary pattern groups. Scores also calculated to measure the adequacy of key food group consumption (e.g. FVI) and moderation of unhealthy foods (e.g. SSB, sugary/fatty snacks)	Stress –27-item stress questionnaire. Responses ranged from never to always. Scores were summed across items and total scores were grouped to represent low (<67.9 points), moderate (68-81 points), and high (>82) stress levels.	Diet – Inadequate DQ (62.1%) more common than adequate DQ (37.9%). Below adequate consumption of fruit (87.7%), vegetables (97.0%), grains (96.3%), dairy (94.8%) and protein (56.9%) was common. On average, 98.2% and 67.5% had the minimum score in non-healthy snack and soft drink moderation, respectively. Older students (31y+) had better DQ than younger students (21-30y; $p = <.05$). Mental Health – Perceived stress was most commonly moderate (60.7%), followed by low (37.1%), and high (2.2%) Association/s – DQ not associated with stress, income, gender, or BMI. Did not adjust for additional demographic or lifestyle variables	Mod
Fang et al., 2014 Canada	<i>N</i> = 152 (43.4% female) Participants: Community	Unhealthy diet proxies – consumption measured using checklist of unhealthy food and	Depressed mood – 5-items from the General Health Questionnaire (GHQ-12; Goldberg et al., 1977). Summed	Diet – Dietary habits were poor on average (<i>M</i> 2.03, <i>SD</i> 2.45). Mental Health – Average depressed mood was in the low-moderate range (<i>M</i> 5.30, <i>SD</i> 3.77), stress was moderate (<i>M</i>	Mod

Author, year, country, study aim(s), design	Sample characteristics (<i>N</i> , participants, age (<i>M</i> , range), ethnicity)	Measure(s) of diet	Measure(s) of mental health	Relevant findings (diet, mental health, and diet-mental health associations)	Quality rating
<p>Aim: To assess the associations between lifestyle practices and mental health and substance use</p> <p>Cross-sectional</p>	<p>dwelling persons of Chinese descent</p> <p>Age range: 17-24y</p> <p>Mean age: 17-18y (67.8%), 19-24y (32.2%)</p> <p>Ethnicity: Chinese-Canadian</p>	<p>drink items rated on a scale from 0-9. Higher scores represent higher endorsement of an unhealthy diet</p>	<p>scores ranged 0-15, with higher scores reflecting greater depressed mood</p> <p>Suicide ideation – 2-items (e.g. “In the past 12-months did you seriously think about committing suicide or taking your own life?”). Scores summed and ranged from 0-2, with higher scores indicating greater suicidal ideation.</p> <p>Stress – single item from modified version of the Perceived Stress Scale. Participants rated average level of stress from 0 (not stressed at all) to 10 (very stressed)</p>	<p>5.46, SD 2.88) and suicidal ideation was low but highly variable and heterogeneous (<i>M</i> 0.35, SD 0.68).</p> <p>Association/s – Poor dietary habits were positively associated with suicidal ideation ($B = 0.06$, $p < .05$). No association between dietary habits and depressed mood or stress.</p> <p>Adjusted for participant age, gender and length of time lived in Canada.</p>	
<p>Fuglestad et al., 2013</p> <p>USA</p> <p>Aim: To investigate the relationship between eating-related attitudinal consistency between</p>	<p><i>N</i> = 2287 (55% female)</p> <p>Participants: sample from Project EAT-III (University of Minnesota, 2019)</p>	<p>Unhealthy and healthy diet proxies – Willett FFQ used to measure FVI, unhealthy snacks and SSB consumption (transformed to servings per day). Additional questions measured past-month</p>	<p>Depression – 6-item Depressive Mood Scale. Likert-scale responses were summed to form a total scale score (higher scores indicated greater depression)</p>	<p>Diet – Independent findings not reported.</p> <p>Mental Health – Independent findings not reported.</p> <p>Association/s – Depression was significantly associated with the consumption of unhealthy snacks ($r = .05$, $p < .05$), SSBs ($r = .06$, $p < .05$), and FF ($r = .05$, $p < .05$). No association observed between depression and FVI ($p > .05$)</p>	Mod

Author, year, country, study aim(s), design	Sample characteristics (<i>N</i> , participants, age (<i>M</i> , range), ethnicity)	Measure(s) of diet	Measure(s) of mental health	Relevant findings (diet, mental health, and diet-mental health associations)	Quality rating
self and friends to psychological wellbeing and eating behaviours Cross-sectional	Age range: 20-31y (31.0% 20-25y, 69.0% 26-31y) Mean age: 25.3y Ethnicity: White (64.0%), Black (8.0%), Hispanic (3.0%), Asian (16.0%), Native American (2.0%), Other or Mixed-Race (7.0%)	consumption of various fast foods (FF) and were rescaled to produce a summary variable of total monthly FF servings.		Adjusted for BMI, gender, race, and age.	
Lazarevich et al., 2017 Mexico Aim: To determine the prevalence of depression and the consumption of unhealthy food in first-year college students and analyse the association between depression scores and food consumption frequency Cross-sectional	<i>N</i> = 1104 (59.7% female) Participants: University students Age range: Unstated Mean age: 19.6y (SD 2.4y) Ethnicity: Unstated Female (%): 59.7%	Unhealthy diet proxies – FFQ comprising 69 items used to measure weekly unhealthy food intake. Unhealthy foods categorised into five groups (e.g. SSB and FF). Consumption of unhealthy food groups 2-3+ times per week was considered ‘unhealthy’ behaviour.	Depression – 20-item CES-D (Spanish-language version) assessed past-week frequency of depressive symptoms. Total scores ranged 0 (absence of depressive symptoms) to 60 (severe depression), with cut-off score of 16 indicative of the presence of depressive symptoms.	Diet – Poor eating habits were common, with high consumption (2+ times/week) of fried food (30.3%), SSBs (49.0%), and sugary food (51.8%). Mental Health – The prevalence of depression symptoms was 18.2% in men and 27.5% in women. Association/s – In females, higher depression was associated with a higher frequency of consumption of FF (OR= 2.08, <i>p</i> = .018), fried food (OR= 1.92, <i>p</i> = .01), and sugary food (OR= 2.16, <i>p</i> = .001). In males, no association was observed between depression and food consumption variables. Adjusted for age, gender and BMI.	Mod

Author, year, country, study aim(s), design	Sample characteristics (<i>N</i> , participants, age (<i>M</i> , range), ethnicity)	Measure(s) of diet	Measure(s) of mental health	Relevant findings (diet, mental health, and diet-mental health associations)	Quality rating
Lolokote et al., 2017 China Aim: To assess SRH, HPL and their associations in an international and local sample of college students Cross-sectional	<i>N</i> = 829 (60.1% female) Participants: University students Age range: Unstated Mean age: 23.04y (SD 3.30) Ethnicity: Unstated	Diet quality – measured via 9-item nutrition scale of the HPLP-II. Responses ranged 1 (never) to 4 (routinely), with higher scores indicating healthier nutritional choices. Responses summed across items and averaged to yield a mean scale score (range 1-4; scores >2.50 considered ‘positive’) Unhealthy and healthy diet proxies – past week food consumption measured via CSIRO FFQ. Responses for each food item ranged from “never” to “3+ times per day”. Weekly consumption scores were converted into daily equivalence scores.	Psychological health – measured via 12-item psychological health scale of the SHMS V1.0. Total subscale scores ranged 0 to 100, with higher scores indicative of better psychological health. Using a threshold score of 67, participants were categorised as “healthy” or with “sub-optimal health”. Stress – measured via the 14-item Stress Scale of the DASS-42. Item responses were summed, with total stress scores categorised as normal (0-14), mild (15-18), moderate (19-25), severe (26-33), and extremely severe (34+).	Diet – Average nutrition scale scores were generally positive for males (M 2.74, SD 0.55) and females (M 2.68, SD 0.60) Mental Health – Average psychological health was suboptimal for males (M 64.78, SD 12.40) and females (M 66.51, SD 13.53) Association/s – Nutrition was significantly associated with psychological health in both Chinese ($r = .320$, $p = <.0001$) and International ($r = .162$, $p = <.05$) groups. Adjusted for age, gender, BMI, education level, drinking, smoking, and financial status.	Strong
Papier et al., 2015 Australia Aim: To examine the relationship between stress and food selection patterns by sex among first-year undergraduate students Cross-sectional	<i>N</i> = 728 (54.5% female) Participants: University students Age range: Unstated (48.0% of sample aged 18-20; 52.0% aged 21+y) Mean age: Males 21.5y (SD 2.8y), Females 21.2y (3.0y) Ethnicity: Unstated			Diet – FVI was poor across both genders and worse for males (median 1.47, range 0-9) than females (median 1.75, range 0-8). Males consumed significantly more processed/highly processed foods (median 0.56/1.71, range 0-3.91/0-9.28) than females (median 0.28/1.61, range 0-3.29/0-16.56) Mental Health – Approx. 53.0% of all participants were found to suffer from some level of stress (mild 15.5%, moderate 27.9%, severe/very severe 9.5%). Association/s – Participants with mild to moderate stress were more likely to eat highly processed foods (males adjusted OR 1.79, $p = .04$; females adjusted OR 2.22, $p = <.001$) and less likely to eat fruit and vegetables (males adjusted OR 0.50, $p = .02$; females adjusted OR 0.78, $p = .02$) than unstressed participants (dose-response relationships significant for males $p = <.05$ and females $p = <.01$)	Strong

Author, year, country, study aim(s), design	Sample characteristics (<i>N</i> , participants, age (<i>M</i> , range), ethnicity)	Measure(s) of diet	Measure(s) of mental health	Relevant findings (diet, mental health, and diet-mental health associations)	Quality rating
Pelletier et al., 2016 USA Aim: To examine the relationship between stress, weight-related health risk behaviours (including eating behaviours) and weight status Cross-sectional	<i>N</i> = 441 (67.6% female) Participants: University students Age range: Unstated (50.6% of sample <21y, 49.4% 21-35y) Mean age: Unstated Ethnicity: White (73.0%), Non-White (27.0%)	Unhealthy diet proxies – measured via eating related items from CHOICES survey (Nanney et al., 2015). Questions of interest primarily related to frequency of FF and SSB consumption	Stress – measured via the 4-item Cohen Perceived Stress Scale (Cohen and Williamson, 1988). Scores ranged 0 to 16, with higher scores indicative of greater stress	Adjusted for marital status, academic group, study status, living situation, working hours, exercise, BMI, dieting and smoking. Diet – 50.6% reported eating FF 1-2+ times per week and 34.9% reported drinking 1+ SSB per day Mental Health – Average stress level in the sample was 5.4 (<i>SD</i> 2.7, range 0-13) Association/s – No significant associations were observed between stress and dietary variables (FF and SSB consumption) Adjusted for weight status, age, sex, race, financial status, parent education, current relationship status, number of children, and other health behaviours (exercise, sedentary behaviour, smoking, drinking).	Strong
Quehl et al., 2017 Canada Aim: To examine the association between depressive symptoms and diet quality in female university students Cross-sectional	<i>N</i> = 141 (100.0% female) Participants: University students Age range: 18-28y Mean age: 19.1y (<i>SD</i> 1.5y) Ethnicity: Caucasian (86.5%), Other (13.5%)	Diet quality – Diet assessed via 3-day food records. The Canadian version of the Healthy Eating Index (HEI-C) was used to assess overall diet quality. Scores ranged 0 to 100 and were categorised as “poor diet quality” (0-50), “needs improvement” (50-80), and “good diet quality” (80-100)	Depressive symptoms – past-fortnight symptoms measured via 20-item CES-D. Item 2 of original CES-D (“I did not feel like eating; my appetite was poor”) was excluded due to its potential to confound the diet variable. Maximum global CES-D score therefore 57, with higher scores indicating greater depressive symptoms.	Diet – Average HEI-C score was in the ‘needs improvement’ range (<i>M</i> 68.2, <i>SD</i> 15.2). Overall, only 23% of diets were classified as ‘good’, while 77% were classified as ‘poor’ or ‘needs improvement’. Participants consumed fewer vegetables, grains and unsaturated fats and more saturated fats and sodium than recommended. Mental Health – Mean total CES-D score was 12.1 (<i>SD</i> 8.3, range 0-45) Association/s – Overall diet quality was significantly inversely associated with CES-D score (<i>B</i> = -0.016, <i>CI</i> -0.029 to -0.003, <i>p</i> = .017) Adjusted for physical activity, % body fat, and BMI.	Weak

Author, year, country, study aim(s), design	Sample characteristics (<i>N</i> , participants, age (<i>M</i> , range), ethnicity)	Measure(s) of diet	Measure(s) of mental health	Relevant findings (diet, mental health, and diet-mental health associations)	Quality rating
<p>Sakai et al., 2017</p> <p>Japan</p> <p>Aim: To examine cross-sectional associations between a diet quality score and depressive symptoms in young and middle-aged adults</p> <p>Cross-sectional</p>	<p><i>N</i>= 3963 (100.0% female)</p> <p>Participants: University students (Three-Generation Study of Women on Diets and Health)</p> <p>Age range: Young adult group all 18.0y</p> <p>Mean age: Young adult group 18.0y; Middle-aged group 47.9y</p> <p>Ethnicity: Unstated</p>	<p>Diet quality (DQ) – Dietary habits during the preceding month were assessed using a comprehensive diet history questionnaire (DHQ). Data related to amount and frequency of consumption of various foods was used to compute an overall diet quality score ranging from 0-70, with higher scores indicating greater diet quality.</p>	<p>Depressive symptoms – measured using the 20-item CES-D (Japanese version). Total scores ranged 0-60, with higher scores indicative of greater depressive symptoms. The adjusted cut-off score for prevalent cases of depressive symptoms was 23+ for young women</p>	<p>Diet – Mean DQ score for young women was 41.1 (SD 7.9; Range 0-70). Higher DQ scores were characterised particularly by higher intakes of dairy, fruit, seaweed, soya products, and vegetables and lower intakes of confectionaries, sugar and soft drinks.</p> <p>Mental Health – Prevalence of depressive symptoms was 22.0% for young women (vs. 16.8% for middle-aged women)</p> <p>Association/s – In young women, higher DQ scores were associated with lower prevalence of depressive symptoms. After adjustment for confounds, OR for depressive symptoms in the highest vs. lowest quintiles of the diet quality score was 0.65 (95% CI 0.50 to 0.84, $p < .0005$).</p> <p>Mean DQ scores were significantly lower for young women with depressive symptoms (<i>M</i> 39.8, <i>SD</i> 8.1) compared to those without (<i>M</i> 41.4, <i>SD</i> 7.8, $p = < .0001$).</p> <p>Adjusted for BMI, smoking, medication use, self-reported stress, dietary reporting status, physical activity, energy intake and living alone.</p>	Strong
<p>Smith-Marek, et al., 2016</p> <p>USA</p> <p>Aim: To determine whether exercise, diet, and trauma are associated with posttraumatic stress symptoms, depression, and</p>	<p><i>N</i>= 321 (76.0% female)</p> <p>Participants: University students</p> <p>Age range: Unstated (89.0% of sample between 18-21y)</p> <p>Mean age: Unstated</p>	<p>Healthy diet-related practices – measured via 3-items from the Family Transitions Project survey. Items inquired about frequency of engagement in healthy dietary practices (i.e. FVI, regular balanced meals, and limiting intake of high fat/sugar</p>	<p>Depressive symptoms – past-week symptoms measured using the 20-item CES-D. Total scores ranged 20 (minimal symptoms of depression) to 80 (high symptoms of depression)</p>	<p>Diet – Mean total healthy diet-related practices score was 8.98 (SD 1.97, range 3-12)</p> <p>Mental Health – Mean total depressive symptoms score was 34.12 (SD 10.30, range 20-69)</p> <p>Association/s – Higher healthy diet-related practices scores were significantly associated with lower depressive symptoms scores ($b = -2.57$, $p = < .001$)</p> <p>Adjusted for exercise and traumatic life events.</p>	Weak

Author, year, country, study aim(s), design	Sample characteristics (<i>N</i> , participants, age (<i>M</i> , range), ethnicity)	Measure(s) of diet	Measure(s) of mental health	Relevant findings (diet, mental health, and diet-mental health associations)	Quality rating
relationship quality and whether healthy diet moderates the association between trauma and the above psychosocial outcomes	Ethnicity: White/Non-Hispanic (91.0%), African American (3.1%), Latino (5.0%), Asian (2.8%)	foods). Response options ranged 0 (never) to 4 (regularly or most of the time). Scores were summed to yield a total score ranging 3 (low healthy diet-related practices) to 12 (high healthy diet-related practices)			
Cross-sectional					
Wattick et al., 2018 USA	<i>N</i> = 1956 (67.5% female)	Unhealthy and healthy diet proxies – Dietary intake was measured using a 27-item Dietary Screener Questionnaire (DSQ; Ritchie et al., 2015). Responses were grouped into a score for FVI (as a marker of overall diet quality) and sugar consumption (as a marker of unhealthy diet). Higher scores were indicative of greater daily consumption.	Depression and anxiety symptoms – measured via selected questions from the Centre for Disease Control and Prevention (2018) Healthy Days Measure	Diet – Mean FVI was 1.80 ± 1.27 times per day and mean added sugars intake was 1.79 ± 1.26 times per day Mental Health – Rates of depression (30.3%) and anxiety (48.6%) were high. Mean number of depressed and anxious days over the past month was 9.67 (SD 8.80) and 14.1 (SD 10.03), respectively. Association/s – FVI was significantly associated with depression in males (OR 0.68, 95% CI 0.28 to 0.88) but not in females (OR 0.94, 95% CI 0.83-1.06). Depressed males had lower FVI than non-depressed males. Added sugar intake was significantly associated with anxiety in both males (OR 1.09, CI 0.91-1.30) and females (OR 2.08, CI 0.43-0.84). Males and females with anxiety had a higher added sugar intake than those without anxiety. Models were stratified by sex. Did not adjust for additional demographic or lifestyle variables	Weak
Aim: To examine the relationship between diet intake and mental health status in a college-attending young adult population	Participants: University students Mean age: 19-21y Age range: Unstated Ethnicity: Unstated				
Cross-sectional					
White et al., 2013 New Zealand	<i>N</i> = 281 (55.4% female)	Unhealthy and healthy diet proxies – 5-item, 21-Day Diary measured consumption	Positive and negative affect (PA/NA) – 21-Day Mood Diary assessing PA and NA.	Diet – Independent findings not reported. Mental Health – Independent findings not reported.	Weak

Author, year, country, study aim(s), design	Sample characteristics (<i>N</i> , participants, age (<i>M</i> , range), ethnicity)	Measure(s) of diet	Measure(s) of mental health	Relevant findings (diet, mental health, and diet-mental health associations)	Quality rating
Aim: To investigate the bidirectional relationships between daily negative and positive affect and food consumption in a naturalistic setting among healthy young adults Micro-longitudinal, correlational	Participants: University students Age range: 18-25y Mean age: 19.1y (SD 1.2y) Ethnicity: European (78.3%), Asian (6.7%), Maori (3.2%), Pacific Islander (0.7%), Other (11%)	of various food groups. Participants reported number of servings eaten per day of healthy (e.g. FVI) and unhealthy (e.g. sweets, snack foods) diet proxies. Possible response options ranged 0 (no servings) to 3 (3+ servings).	PA (e.g. relaxed) and NA (e.g. depressed) adjectives rated on applicability from 1 (not at all) to 5 (extremely) each day. Responses averaged across items for total daily score.	Association/s – Within-person analyses revealed a significant positive association between PA and consumption of fruit ($B[SE] = .112 [.034]$, $p = .002$) and vegetables ($B[SE] = .147 [.038]$, $p = <.001$). NA was positively associated with crisps, corn snacks, and corn chip consumption ($B[SE] = .069 [.030]$, $p = .020$), and inversely with fruit consumption ($B[SE] = -.085 [.040]$, $p = .036$). Did not adjust for additional demographic or lifestyle variables	
Ye et al., 2016 China Aim: To investigate the prevalence of multiple health risk behaviours and their relation to mental health among Chinese college students Cross-sectional	$N = 2422$ (40.8% female) Participants: University students Age range: 16-24y Mean age: 19.7y (SD 1.2y) Ethnicity: Unstated	Healthy diet proxies – Single item asking about frequency of FVI in the last 30 days. Response options ranged from “<1 time per week” to “1+ times per day”. Poor dietary behaviour was defined as eating fruit and vegetables ≤ 3 times per week.	Depression and anxiety – measured using the SDS and SAS. Higher scores indicated a higher level of depression or anxiety. Total standard scores of 53 and 50 were set as cut-off points for depression and anxiety, respectively.	Diet – Overall prevalence of poor dietary behaviour (i.e. $FVI \leq 3$ times per week) was 29.8%. Mental Health – Independent findings not reported. Associations – Poor dietary behaviour (i.e. $FVI \leq 3$ times per week) significantly increased risk for anxiety (OR 1.38, 95% CI 1.11 to 1.72, $p = .004$) but not depression (OR 1.07, 95% CI 0.88 to 1.29, $p = .508$). Adjusted for university, sex, age, BMI and maternal education.	Weak

Note. BMI= Body Mass Index; CES-D= Centre for Epidemiologic Studies Depression Scale; CI= Confidence Interval; DASS-42= Depression Anxiety Stress Scales; DHQ= Diet History Questionnaire; DQ= Diet Quality; DQI= Diet Quality Index; DSQ= Dietary Screener Questionnaire; FF= Fast Food; FFQ= Food Frequency Questionnaire; FVI= Fruit and Vegetable Intake; HPLP-II= Health-Promoting Lifestyle Profile II; M= Mean; NA= Negative Affect; OR= Odds Ratio; PA= Positive Affect; SD= Standard Deviation; SES= Socioeconomic Status; SHM S= Sub-Health Measurement Scale Version 1.0; SSB= Sugar Sweetened Beverage.