Review

Association between fruit and vegetable consumption and depression symptoms in young people and adults aged 15-45: A systematic review of cohort studies

Putu Novi Arfirsta Dharmayani, Melissa Juergens, Margaret Allman Farinelli, and Seema Mihrshahi

**Supplementary Table 1.** Inclusion and exclusion criteria for study designs

|  |  |  |
| --- | --- | --- |
|  | **Inclusion** | **Exclusion** |
| **Population** | People 15-45 years of age  Healthy population | Presence of chronic disease including depression  Adults with nutritional needs different from the general population  Unique populations which are less likely to be representative of the general population (e.g., monks)  Animal studies |
| **Study Design** | Original cohort studies with a minimum follow up time of 12 months or longer | Cross sectional studies  Randomised control trials  Case-control studies  Reviews  Reports  Non-empirical research |
| **Time Frame** | 1 January 2000 to 31 August 2020 | Prior to 2000 |
| **Exposure** | Fruit and vegetable consumption, both independently and/or together | Fruit and vegetables were not analysed separately from other dietary patterns |
| **Outcome** | Depressive symptoms or Depression measured using validated questions, QoL, doctors diagnosis or medication use for depression | No valid measure of depressive symptoms/depression |

**Supplementary Table 2.** Full electronic search strategy applied for Medline, Embase, and PsycInfo

|  |  |
| --- | --- |
| **Database** | **The applied full electronic search strategy** |
| Medline via Ovid | 1. Young Adult/  2. Adolescent/ or Adult/  3. (young people or young adult\* or early adult\* or emerging adult\* or adult\*).ti,ab.  4. 1 or 2 or 3  5. exp Fruit/ or "Fruit and Vegetable Juices"/  6. Malus/ or Citrus sinensis/ or Pyrus/ or Vitis/ or Musa/ or exp Citrus/ or Rubus/ or Psidium/ or Actinidia/  7. exp Vaccinium/ or Carica/ or cucurbitaceae/ or citrullus/ or Ananas/ or Fragaria/ or Carotenoids/ or exp Prunus/  8. Rheum/ or Bombacaceae/ or Cocos/ or Citrullus/  9. (fruit\* or apple\* or orange\* or pear or pears or grape or grapes or banana\* or berry or berries or citrus).ti,ab.  10. (blackberr\* or cranberr\* or guava\* or kiwi\* or lingonberr\* or papaya\* or mandarin\* or tangerine\* or melon\* or pineapple\*).ti,ab.  11. (raspberr\* or strawberr\* or grapefruit\* or satsuma\* or plum or plums or apricot\* or peach or peaches or rhubarb or durian or cherry or cherries).ti,ab.  12. (nectarine\* or coconut\* or dragonfruit\* or watermelon\*).ti,ab.  13. (fruit adj1 (intake\* or consumption\*)).ti,ab.  14. 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13  15. Vegetables/ or vegetarians/ or vegans/ or Plant Leaves/  16. Daucus carota/ or Lycopersicon esculentum/ or Solanum tuberosum/ or exp allium/ or onions/  17. Apium/ or Spinacia oleracea/ or peas/ or soybeans/ or Phaseolus/ or Fabaceae/ or exp Chenopodiaceae/ or exp Brassica/  18. Cucumis sativus/ or Salads/ or Solanum melongena/ or Capsicum/ or Abelmoschus/ or Cucurbita/  19. Cynara scolymus/ or Lettuce/ or Pastinaca/ or Asparagus Plant/ or Cicer/ or Foeniculum/ or seaweed/ or kelp/  20. Ipomoea batatas/ or Agaricales/ or Nuts/ or Soy Foods/ or "Fermented Foods and Beverages"/  21. (vegetable\* or vegan\* or vegetarian\* or leafy green\* or carrot\* or cabbage\* or brassica\* or tomato or tomatoes or potato or potatoes).ti,ab.  22. (onion\* or celery or spinach or pea or peas or bean or beans or broccoli or cauliflower\* or beetroot\* or turnip\* or cucumber).ti,ab. |
| **Database** | **The applied full electronic search strategy** |
| Medline via Ovid | 24. (kale or parsnip\* or asparagus or chickpea\* or fennel or seaweed\* or sweet potato\* or kimchi or mushroom\* or tofu or tempeh).ti,ab.  25. (vegetable adj1 (intake\* or consumption\*)).ti,ab.  26. 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25  27. diet/ or diet, mediterranean/ or diet, vegetarian/ or diet, vegan/ or diet, western/ or diet, healthy/  28. Dietary Fiber/ or Antioxidants/ or Nutritional Status/ or Folic Acid/ or Micronutrients/ or Nutrition Surveys/ or Nutrition Assessment/ or "diet, food, and nutrition"/  29. (diet\* or healthy diet or nutrition\* or juice\*).ti,ab.  30. ((fruit and vegetable) adj1 (intake or consumption)).ti,ab.  31. 27 or 28 or 29 or 30  32. 14 or 26 or 31  33. affective symptoms/ or depression/ or mental fatigue/ or mental disorders/ or anxiety disorders/ or mood disorders/  34. Depressive Disorder, Major/ or Depressive Disorder/ or Dysthymic Disorder/ or Seasonal Affective Disorder/  35. Panic Disorder/ or Panic/ or self mutilation/ or exp suicide/ or exp stress, psychological/ or fear/ or frustration/ or loneliness/ or sadness/  36. (depression or depressive or anxiety or anxious or psychological distress or worries or sad or unhappy or unhappiness or helpless\* or hopeless\*).ti,ab.  37. (suicide\* adj2 (thought\* or idea\* or think\* or attempt\*)).ti,ab.  38. (self adj1 (injury or harm or hurt)).ti,ab.  39. healthy lifestyle/ or Life Change Events/ or Mental Health/ or affect/ or irritable mood/ or anxiety/  40. (automutilation or alienation or lonely or depressed or well-being or well being).ti,ab.  41. 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40  42. epidemiologic studies/ or exp cohort studies/  43. (cohort stud\* or cohort analysis).ti,ab.  44. (follow up adj1 (study or studies)).ti,ab.  45. (longitudinal adj1 (study or studies)).ti,ab.  46. 42 or 43 or 44 or 45  47. 4 and 32 and 41 and 46  48. limit 47 to (english language and humans and yr="2000 - 2020") |
| **Database** | **The applied full electronic search strategy** |
| Embase via Ovid | 1. young adult/ or adult/ or adolescent/  2. (young people or young adult\* or early adult\* or emerging adult\* or adult\*).ti,ab.  3. adolescence/ or adulthood/  4. 1 or 2 or 3  5. fruit juice/ or fruit consumption/ or fruit vegetable/ or exp fruit/  6. apple juice/ or apple/ or sweet orange/ or orange juice/  7. durian fruit/ or passion fruit/ or "lime (fruit)"/ or "orange (fruit)"/ or Evodia fruit/ or "date (fruit)"/ or pome fruit/ or citrus fruit/ or miracle fruit/8. pear juice/ or pear/ or grape juice/ or grape/ or banana/ or berry juice/ or berry/  9. citrus/ or grapefruit/ or lemon/ or mandarin/ or satsuma/ or tangerine/ or guava/ or blackberry/ or cranberry juice/ or cranberry/ or guava/  10. avocado/ or berry/ or black currant/ or blueberry/ or breadfruit/ or gooseberry/ or huckleberry/ or kiwifruit/ or lingonberry/ or loquat/ or lychee/ or mango/ or miracle fruit/ or muskmelon/ or papaya/ or passion fruit/ or persimmon/ or pineapple/ or pome fruit/ or pomegranate/ or raspberry/ or strawberry/ or tomato/ or watermelon/  11. mango juice/ or lime juice/ or beetroot juice/ or watermelon juice/ or plant juice/ or lemon juice/ or apple juice/ or cherry juice/ or aloe juice/ or mandarin juice/ or tomato juice/ or pineapple juice/  12. strawberry juice/ or grapefruit/ or grapefruit juice/ or plum/ or apricot/ or peach/ or rhubarb/ or nectarine/ or coconut/ or Hylocereus undatus/  13. (fruit\* or apple\* or orange\* or pear or pears or grape or grapes or banana\* or berry or berries or citrus).ti,ab.  14. (blackberr\* or cranberr\* or guava\* or kiwi\* or lingonberr\* or papaya\* or mandarin\* or tangerine\* or melon\* or pineapple\*).ti,ab.  15. (raspberr\* or strawberr\* or grapefruit\* or satsuma\* or plum or plums or apricot\* or peach or peaches or rhubarb or durian or cherry or cherries).ti,ab.  16. (nectarine\* or coconut\* or dragonfruit\* or watermelon\*).ti,ab.  17. (fruit adj1 (intake\* or consumption\*)).ti,ab.  18. 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17  19. vegetable/ or "root vegetable"/ or pickled vegetable/ or leafy vegetable/ or stem vegetable/ or vegetable consumption/ or vegetable juice/  20. vegan diet/ or vegan/ or vegetarian diet/ or vegetarian/ or fermented soybean/ or tofu/ or kimchi/  21. carrot juice/ or carrot/ or Chinese cabbage/ or celery cabbage/ or cabbage/ or white cabbage/ or red cabbage/ or Brassica/ or potato/ or sweet potato/ or onion/ or celery/ |
| **Database** | **The applied full electronic search strategy** |
| **Embase via Ovid** | 22. spinach/ or pea/ or bean/ or legume/ or soybean/ or broccoli/ or cauliflower/ or beetroot juice/ or beetroot/ or turnip/ or cucumber/ or salad/ or leek/ or aubergine/  23. Romaine lettuce/ or lettuce/ or leaf lettuce/ or iceberg lettuce/ or kale/ or Chinese kale/ or parsnip/ or asparagus/ or chickpea/ or fennel/  24. seaweed/ or edible mushroom/ or pepper/ or okra/ or squash/ or artichoke/  25. (vegetable\* or vegan\* or vegetarian\* or leafy green\* or carrot\* or cabbage\* or brassica\* or tomato or tomatoes or potato or potatoes).ti,ab.  26. (onion\* or celery or spinach or pea or peas or bean or beans or broccoli or cauliflower\* or beetroot\* or turnip\* or cucumber).ti,ab.  27. (salad or salads or legume\* or leek or leeks or aubergine\* or pepper\* or okra or pumpkin\* or squash\* or artichoke\* or lettuce\*).ti,ab.  28. (kale or parsnip\* or asparagus or chickpea\* or fennel or seaweed\* or sweet potato\* or kimchi or mushroom\* or tofu or tempeh).ti,ab.  29. (vegetable adj1 (intake\* or consumption\*)).ti,ab.  30. 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29  31. diet/ or high fiber diet/ or mediterranean diet/ or western diet/  32. exp healthy diet/ or nutrient/ or nutrient intake/ or trace element/ or antioxidant/ or folic acid/ or dietary fiber/ or fruit vegetable/  33. nutrition/ or adolescent nutrition/ or dietary intake/ or dietary pattern/ or food intake/ or nutritional assessment/  34. (fruit and vegetable).ti,ab.  35. (diet\* or healthy diet or nutrition\* or juice\*).ti,ab.  36. ((fruit and vegetable) adj1 (intake or consumption)).ti,ab  37. 31 or 32 or 33 or 34 or 35 or 36  38. 18 or 30 or 37  39. depression inventory/ or minor depression/ or Self-rating Depression Scale/ or "mixed anxiety and depression"/ or major depression/ or depression/ or adolescent depression/ or depression assessment/ or mental health/  40. depression/ or seasonal affective disorder/ or dysthymia/ or panic/ or mental disease/ or anxiety disorder/ or emotional disorder/ or mood disorder/  41. suicidal behavior/ or suicidal ideation/ or suicide/ or suicide attempt/ or automutilation/ or frustration/ or loneliness/ or sadness/ |
| **Database** | **The applied full electronic search strategy** |
| **Embase via Ovid** | 42. emotion/ or affect/ or anger/ or fear/ or helplessness/ or hopelessness/ or mood/ or mood change/ or nervousness/ or unhappiness/  43. (depression or depressive or anxiety or anxious or psychological distress or worries or sad or unhappy or unhappiness or helpless\* or hopeless\*).ti,ab.  44. (symptom\* of depression or depressive symptom\*).ti,ab.  45. (suicide\* adj2 (thought\* or idea\* or think\* or attempt\*)).ti,ab.  46. (self adj1 (injury or harm or hurt)).ti,ab.  47. healthy lifestyle/  48. life event/  49. ("loss of interest" or alienation or lonely or depressed or well-being or well being).ti,ab.  50. 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49  51. epidemiology/ or cohort analysis/ or longitudinal study/ or follow up/  52. (cohort stud\* or cohort analysis).ti,ab.  53. (follow up adj1 (study or studies)).ti,ab.  54. (longitudinal adj1 (study or studies)).ti,ab.  55. 51 or 52 or 53 or 54  56. 4 and 38 and 50 and 55  57. limit 56 to (human and english language and yr="2000 -2020") |
| PsycInfo via Ovid | 1. Adult Offspring/  2. (young people or young adult\* or early adult\* or emerging adult\* or adult\*).ti,ab.  3. Emerging Adulthood/  4. 1 or 2 or 3  5. Diets/ or Food Intake/ or Food Preferences/ or Nutrition/  6. (fruit\* or apple\* or orange\* or pear or pears or grape or grapes or banana\* or berry or berries or citrus).ti,ab.  7. (blackberr\* or cranberr\* or guava\* or kiwi\* or lingonberr\* or papaya\* or mandarin\* or tangerine\* or melon\* or pineapple\*).ti,ab.  8. (raspberr\* or strawberr\* or grapefruit\* or satsuma\* or plum or plums or apricot\* or peach or peaches or rhubarb or durian or cherry or cherries).ti,ab.  9. (nectarine\* or coconut\* or dragonfruit\* or watermelon\*).ti,ab. |
| **Database** | **The applied full electronic search strategy** |
| PsycInfo via Ovid | 10. (fruit adj1 (juice\* or consumption or intake)).ti,ab.  11. (vegetable\* or vegan\* or vegetarian\* or leafy green\* or carrot\* or cabbage\* or brassica\* or tomato or tomatoes or potato or potatoes).ti,ab.  12. (onion\* or celery or spinach or pea or peas or bean or beans or broccoli or cauliflower\* or beetroot\* or turnip\* or cucumber).ti,ab.  13. (salad or salads or legume\* or leek or leeks or aubergine\* or pepper\* or okra or pumpkin\* or squash\* or artichoke\* or lettuce\*).ti,ab.  14. (kale or parsnip\* or asparagus or chickpea\* or fennel or seaweed\* or sweet potato\* or kimchi or mushroom\* or tofu or tempeh).ti,ab.  15. "fruit and vegetable".ti,ab.  16. (vegetable adj1 (juice\* or consumption or intake)).ti,ab.  17. Folic Acid/  18. Antioxidants/  19. (nutritional adj1 (assessment\* or survey\*)).ti,ab.  20. (mediterranean diet or healthy diet or dietary pattern\* or dietary intake).ti,ab.  21. ((fruit and vegetable) adj1 (intake or consumption)).ti,ab.  22. 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21  23. major depression/ or affective disorders/ or dysthymic disorder/ or seasonal affective disorder/  24. Adolescent Development/ or Anxiety Disorders/ or "Depression (Emotion)"/  25. mental health/ or mental status/ or "mental health and illness assessment"/ or well being/  26. mental disorders/ or psychological assessment/ or suicide/  27. negative emotions/ or fatigue/ or Life Changes/ or Stress/ or psychological stress/  28. emotional states/ or alienation/ or anxiety/ or distress/ or fear/ or frustration/ or hopelessness/ or loneliness/ or pessimism/ or restlessness/ or sadness/ or suffering/  29. (depression or depressive or anxiety or anxious or psychological distress or worries or sad or unhappy or unhappiness or helpless\* or hopeless\*).ti,ab.  30. ("symptom\* of depression" or "depressive symptom\*").ti,ab.  31. (suicide\* adj2 (thought\* or idea\* or think\* or attempt\*)).ti,ab.  32. (self adj1 (injury or harm or hurt)).ti,ab.  33. ("loss of interest" or alienation or lonely or depressed or well-being or well being).ti,ab. |
| **Database** | **The applied full electronic search strategy** |
| **PsycInfo via Ovid** | 34. 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33  35. cohort analysis/ or longitudinal studies/ or prospective studies/ or followup studies/ or epidemiology/  36. (cohort stud\* or cohort analysis).ti,ab.  37. (follow up adj1 (study or studies)).ti,ab.  38. (longitudinal adj1 (study or studies)).ti,ab.  39. 35 or 36 or 37 or 38  40. 4 and 22 and 34 and 39  41. limit 40 to (english language and yr="2000 -2020") |

**Supplementary Table 3.**Justification of exclusion at full text screening

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Reason for exclusion** | **Number of studies** | **Excluded studies reference** | | | | |
| Incorrect study design:  Cross sectional  Case-control  Randomised control trial  Poster format  Short time follow-up  Abstract only available | n= 64 | Godos J, et al., 2019  Emerson SD, et al., 2019  Schiltchen D, et al., 2019  Abildsnes E, et al. 2017  Adjibade M, et al. 2017  Wirth M, et al. 2016  Herbison CE, et al. 2012  Szabo de Edelenyi F, et al., 2020  Moreno-Agostino D, et al., 2019  Sánchez-Villegas A, et al. 2009  Esteban-Fonzalo L, et al., 2019  Gibson-Smith D, et al., 2018  Sangsefidi ZS, et al., 2020  Wesselman LMP, et al., 2019  Matta J, Hoertel N, et al., 2020  Gascoyne CR, et al., 2019 | Saghafian F, et al., 2019  Paans NPG, et al., 2019  Moludi J, et al., 2020  Matta J, et al., 2018  Solmi M, et al., 2019  Paslakis G, et al., 2020  Miyake Y, et al., 2018  Hajianfar H, et al., 2020  Alfawas W, et al., 2019  Bryan J,et al. 2004  Richard A, et al. 2015  Won MS,et al. 2016  Ashurst J, et al. 2016  Ackard DM, et al. 2002  Konttinen H, et al. 2010  Gregorio MJ, et al. 2017 | Matta J, et al., 2019  Pfeiler TM, et al., 2020  Sousa KT, et al., 2019  Philips A, et al., 2020  Lee J, et al., 2020  Wu H, et al., 2020  Ju SY, et al., 2019  Sangsefidi ZS, et al., 2020  Sakai H, et al. 2017  Miki T, et al. 2015  Beydoun MA, et al 2010  Watanabe H, et al 2012  Ahmed N, et al. 2017  Beydoun MA, et al. 2010  Yary T. et al. 2013  Bergmans RS, et al. 2017 | | Liu C, et al. 2007  Watanabe H, et al. 2011  Adams TB, et al. 2008  Shakya PR, et al., 2020  Grases G, et al., 2019  Avalos LA, et al., 2020  Ashurst J, et al., 2018  Liao Y, et al., 2019  Shakya PR, et al., 2020  Shin Y, et al., 2019  Wu S, et al., 2018  Patel S, et al., 2019  Nanri A, et al. 2010  Fabian C, et al. 2013  Bertram L, et al. 2014  Wirth MD, et al. 2017 |
| Incorrect population  Started with depression  Had existing medical issues  Age only >45 years old  Age only < 14 years old  Most participants in population is older people  Unique population | n= 26 | Ramin S, et al., 2020  Nathanson R, et al., 2018  Pengpid S, et al., 2019  Elstgeest LEM, et al., 2019  Cherian L, et al., 2020  Sanchez-Villegas A, et al. 2006  Sanchez-Villegas A, et al. 2017 | Youri J et al 2016  Notara V, et al. 2016  Tolmunen T, et al. 2004  Walsh JL, et al. 2013  Hingle MD, et al. 2014  Adjibade M, et al. 2017  Baek D, et al. 2013 | Huang P, et al., 2019  Loewen OK, et al., 2019  Boehm JK, et al., 2018  Kobayashi LC, et al., 2018  Lavalee K, et al., 2019  Matthews KA, et al., 2019 | | Nanri A, et al. 2013  Ruusunen A, et al. 2014  Ribeiro SML, et al. 2017  Lai JS, et al. 2017  Cheng HY, et al., 2019  Hoare E et al., 2020 |
| **Reason for exclusion** | **Number of studies** | **Excluded studies reference** | | | | |
| Incorrect intervention/exposure  Fruit and vegetables not analysed separate from diet  Only looking at specific nutrients | n= 35 | Adjibade M, et al., 2019  Adjibabe M, Lemogne C, et al., 2019  Adjibabe M, Lemogne C, Julia C, et al., 2019  Sanchez-Villegas A, Ruiz-Canela M, et al. 2015  Sharpe PA, et al. 2016  Northstone K, et al. 2018  Smith-Marek EN et al. 2016  Vermeulen E, et al. 2016 | Opie RS, et al., 2020  Recchia D, et al., 2020  Nanri A, et al., 2020  Marozoff S, et al., 2020  Oftedal S, et al., 2020  Schweren LJS, et al., 2020  Oddy WH, et al., 2018  Carlos S, et al., 2018  Northstone K, et al., 2020  Guo F, et al., 2019  Sanchez-Villegas A et al. 2015 | | Fresan U, et al., 2019  Wilson CA, et al., 2020  Velten J, et al., 2018  Riuz-Estigarribia L, et al., 2019  Miki T, et al., 2018  Derom ML, et al. 2012  Kesse-Guyot E, et al. 2013  Nanri A, et al. 2013  Pisinger C, et al. 2016 | Henriquez Sanchez P 2012  Beydoun MA, et al. 2016  Kurspahic-Mujcic A, et al. 2014  Astorg P, et al. 2008  Gall SL, et al. 2016  Mouchacca J, et al. 2013  Akbaraly T, et al. 2016 |
| Incorrect outcome  Looked at key life transitions  Looked at cognitive functioning  Looked at happiness as an outcome | n= 7 | Winpenny EM, et al., 2018  Kesse-Guyot E, et al. 2014 | Mujcic R, et al. 2016  Haibach JP, et al 2016 | Allen MS, et al. 2016  Kim O, et al. 2017 | | Haibach JP, et al. 2015 |

**Supplementary Table 4.** The Newcastle-Ottawa Scale results

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author** | **Selection\*** | | | | **Comparability‡** | | **Outcome†** | | | **Total§** |
| **Representativeness of the exposed cohort** | **Selection of the non-exposed cohort** | **Ascertainment of exposure** | **Demonstration that outcome of interest was not present at start of study** | **Adjust for** **the most important risk factors** | **Adjust for other risk factors** | **Assessment of outcome** | **Follow-up adequacy** | **Adequacy of follow up of cohorts** |
| Choda et al., 2020 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 7  Good |
| Mujcic and Oswald, 2019 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 7  Good |
| Ocean et al., 2019 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 6  Good |
| Winzer et al., 2018 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 6  Good |
| Winpenny et al., 2018 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 6  Good |
| Hoare et al., 2018 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 6  Good |
| Chang et al., 2016 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 6  Good |
| Collin et al., 2016 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 5  Moderate |
| Kingsbury et al., 2016 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 8  Very Good |
| Akbaraly et al., 2013 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 6  Good |
| Chai et al., 2010 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 4  Moderate |
| Sanchez-Villegas et al., 2009 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 6  Good |

\*Maximum 4 points awarded for cohort representativeness, selection of non-exposed cohort, exposure assessment and demonstration outcome not present at baseline.

‡Maximum 2 points awarding for controlling for the primary confounding variable and the secondary confounding variables.

†Maximum 3 points awarded for follow-up length, adequacy of follow-up and outcome assessment.

§A maximum of 9 points could be awarded.

Category:

Very Good quality = 8-9 points; Good quality = 6-7 points; Moderate quality = 4-5 points; Low quality = 0-3 points

|  |  |
| --- | --- |
|  | © 2020 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/). |