**Supplementary Material 1 – Search Strategies**

**Table 1 - Search Strategy for CINAHL**

|  |  |  |  |
| --- | --- | --- | --- |
| **Search Number** | **Search Term** | **Limiters** | **Number of Results** |
| 1 | TI ( diet\* OR "diet\* quality" OR nutri\* OR food OR meal ) W/3 ( index OR indice\* OR scor\* OR tool OR indicator OR guideline OR pattern OR divers\* OR variety ) ) OR ( "Healthy Eating Index" OR "HEI" OR "Healthy Eating Index for Australians" OR "Aust-HEI" OR "HEIFA" OR "Mediterranean Diet Score" OR "Diet Quality Index" OR "DQI" OR "Alternative Healthy Eating Index" OR "AHEI" OR "Recommended Food Score" ) |  | 1545 |
| 2 | AB ( "Healthy Eating Index" OR "HEI" OR "Healthy Eating Index for Australians" OR "Aust-HEI" OR "HEIFA" OR "Mediterranean Diet Score" OR "Diet Quality Index" OR "DQI" OR "Alternative Healthy Eating Index" OR "AHEI" OR "Recommended Food Score" ) |  | 1457 |
| 3 | (MH "Nutritional Assessment/MT/ST/SN") OR (MH "Eating Behavior+/EP/EV/EH/TD") OR (MH "Diet+/EV/MT/ST/SN/TD") OR (MH "Nutrition Policy+/TD/SN/ST/MT") |  | 19218 |
| 4 | S1 OR S2 OR S3 |  | 20372 |
| 5 | TI valid\* OR AB valid\* OR TI ( index OR indice\* OR scor\* OR tool\* OR indicat\* OR guideline\* OR pattern\* OR divers\* OR variet\* ) |  | 386335 |
| 6 | S4 AND S5 |  | 3764 |
| 7 | S4 AND S4 | Published Date: 20000101-20201231; English Language; Human; Language: English | 2242 |

**Table 2 - Search Strategy for PubMed**

|  |  |  |  |
| --- | --- | --- | --- |
| **Search Number** | **Search Term** | **Limiters** | **Number of Results** |
| 1 | (diet\*[Title] OR "diet\* qualit\*"[Title] OR food\*[Title] OR meal\*[Title]) AND (index[Title] OR indice\*[Title] OR scor\*[Title] OR tool\*[Title] OR indicat\*[Title] OR guideline\*[Title] OR pattern\*[Title] OR divers\*[Title] OR variet\*[Title]) OR "Healthy Eating Index"[Title/Abstract] OR "HEI"[Title/Abstract] OR "Healthy Eating Index for Australian"[Title/Abstract] OR "Aust-HEI"[Title/Abstract] OR "HEIFA"[Title/Abstract] OR "Mediterranean Diet Score"[Title/Abstract] OR "Diet Quality Index"[Title/Abstract] OR "DQI"[Title/Abstract] OR "Alternative Healthy Eating Index"[Title/Abstract] OR "AHEI"[Title/Abstract] OR “Recommended Food Score”[Title/Abstract] |  | 15560 |
| 2 | “Feeding Behavior/epidemiology"[MeSH Terms] OR "Feeding Behavior/ethnology"[MeSH Terms] OR "Feeding Behavior/instrumentation"[MeSH Terms] OR "Feeding Behavior/methods"[MeSH Terms] OR "Feeding Behavior/standards"[MeSH Terms] OR "Feeding Behavior/statistics and numerical data"[MeSH Terms] OR "Feeding Behavior/trends"[MeSH Terms] OR "diet/standards"[MeSH Terms] OR "nutrition policy"[MeSH Terms]) |  | 22794 |
| 3 | (valid\*[Title/Abstract] OR (index[Title] OR indice\*[Title] OR scor\*[Title] OR tool\*[Title] OR indicat\*[Title] OR guideline\*[Title] OR pattern\*[Title] OR divers\*[Title] OR variet\*[Title]) |  | 1380746 |
| 4 | (#1 OR #2) AND #3 |  | 15156 |
| 5 | (#1 OR #2) AND #3 | Published 2010-2020, English, Humans | 6382 |

**Table 3 - Search Strategy for Scopus**

|  |  |  |
| --- | --- | --- |
| **Search Number** | **Search Term** | **Number of Results** |
| 1 | TITLE ( ( diet\* OR "diet\* quality" OR nutri\* OR food OR meal ) W/3 ( index OR indice\* OR scor\* OR tool OR indicator OR guideline OR pattern OR divers\* OR variety ) ) OR TITLE-ABS ( "Healthy Eating Index" OR "HEI" OR "Healthy Eating Index for Australians" OR "Aust-HEI" OR "HEIFA" OR "Mediterranean Diet Score" OR "Diet Quality Index" OR "DQI" OR "Alternative Healthy Eating Index" OR "AHEI" OR "Recommended Food Score" ) | 24553 |
| 2 | TITLE-ABS ( valid\* ) OR TITLE( index OR indice\* OR scor\* OR tool OR indicator OR guideline OR pattern OR divers\* OR variety ) | 3528432 |
| 3 | #1 AND #2 | 18374 |
| 4 | ( ( TITLE ( ( diet\* OR "diet\* quality" OR nutri\* OR food OR meal ) W/3 ( index OR indice\* OR scor\* OR tool OR indicator OR guideline OR pattern OR divers\* OR variety ) ) OR TITLE-ABS ( "Healthy Eating Index" OR "HEI" OR "Healthy Eating Index for Australians" OR "Aust-HEI" OR "HEIFA" OR "Mediterranean Diet Score" OR "Diet Quality Index" OR "DQI" OR "Alternative Healthy Eating Index" OR "AHEI" OR "Recommended Food Score" ) ) AND ( TITLE-ABS ( valid\* ) OR TITLE ( index OR indice\* OR scor\* OR tool OR indicat\* OR guideline\* OR pattern\* OR divers\* OR variet\* ) ) ) AND NOT ( animals ) AND NOT ( animals AND humans ) AND ( LIMIT-TO ( PUBYEAR , 2020 ) OR LIMIT-TO ( PUBYEAR , 2019 ) OR LIMIT-TO ( PUBYEAR , 2018 ) OR LIMIT-TO ( PUBYEAR , 2017 ) OR LIMIT-TO ( PUBYEAR , 2016 ) OR LIMIT-TO ( PUBYEAR , 2015 ) OR LIMIT-TO ( PUBYEAR , 2014 ) OR LIMIT-TO ( PUBYEAR , 2013 ) OR LIMIT-TO ( PUBYEAR , 2012 ) OR LIMIT-TO ( PUBYEAR , 2011 ) OR LIMIT-TO ( PUBYEAR , 2010 ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) ) AND ( LIMIT-TO ( SUBJAREA , "MEDI" ) OR LIMIT-TO ( SUBJAREA , "NURS" ) OR LIMIT-TO ( SUBJAREA , "MULT" ) ) | 6419 |

**Supplementary Material 2 - Weightage and Scoring System**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Diet Quality Index** | **Construct Weighting**‡ | **Scoring Adjustment for Vegan/Vegetarian Diets** | **Penalty for intake exceeding recommenda-tions**§ | **Extra Points for Low Fat Dairy**§ | **Extra Points for Wholegrains**§ | **Extra Points for Lean Meat (including trimming fats)**§ |
| **Category 1 – Adherence to National Dietary Guidelines** | | | | | | |
| RDGI(25) | Equal weighting for each construct | * Nil | N | Y | Y | Y |
| S-RDGI1(25) | Different weighting assigned depending on the number of assessable items in each construct | NA | N |
| S-RDGI2(25) |
| ARFS(26) | Different weighting assigned depending on the number of assessable items in each construct | * Vegan/vegetarian diets may be penalized for having no meat consumption despite meat alternatives being scored in the index. | N | Y | Y | N |
| HEIFA-2013(37) | Different weighting assigned to constructs depending on their significance on overall diet recommendations | * Legumes are assigned to the meat category. Any additional legumes beyond the optimum serve were assigned to the vegetable group (Except soy milk which belongs to the dairy/alternatives group). | N | N | Y | N |
| TDS(39) | Equal weighting for each construct | * Extra point is given for consumption of lean red meat. Vegan/vegetarian diets may be penalized despite meat alternatives being scored in the index. | N | Y | Y | Y |
| DGI-2013(43) | Equal weighting for each construct | * Meat alternatives grouped into the same component with total meat. | N | N | Y | Y |
| Aussie-DQI(48) | Equal weighting for each construct except the diet variety construct, that was given heavier weighting | * Meat alternatives grouped into the same component with total meat. * Points are given if fish is included regularly in the diet, placing vegan/vegetarian diets at an disadvantage. | Y | N | Y | N |
| DGAI-2015(27) | Equal weighting for each construct | * Meat alternatives grouped into the same component with total meat. | Y | Y | Y | Y |
| HDHI(47) | Equal weighting for each construct | * Points are given for consumption of fish/shellfish. Vegan/vegetarian diets may be penalized despite meat alternatives being scored in the index. | N | Y | Y | Y |
| DQI(40) | Equal weighting for each construct | * A higher score is given to increased fish consumption, placing vegan/vegetarian diets at a disadvantage. | N | N | N | N |
| HEI-2015(36) | Equal weighting for each construct | * “Total Protein Foods” and “Seafood and Plant Proteins” components are inclusive of meat alternatives consumption. | N | N | Y | N |
| US HFD Index(44) | Weighting given to each construct as per proportion of total volume of each food group in a typical diet in accordance with the US Dietary Guidelines | * Nil | N | Y | Y | N |
| **Category 2 – Adherence to Mediterranean Diet** | | | | | | |
| MediCul(35) | Different weighting assigned depending on the number of assessable items in each construct | * Points are given for consumption of fish/shellfish. Vegan/vegetarian diets may be penalized despite meat alternatives (legumes) being scored in the index. | N | N | Y | N |
| MDS(34) | Equal weighting for each construct | * Points are given for consumption of fish. Vegan/vegetarian diets may be penalized despite meat alternatives (legumes) being scored in the index. | N | N | Y | Y  (Extra points to fish intake; meat/meat product as moderation components) |
| MEDI-LITE(42) | Equal weighting for each construct | * Points are given for consumption of fish. Vegan/vegetarian diets may be penalized for having no meat consumption despite meat alternatives (legumes) being scored in the index. | Y  (Alcohol only) | N | N | Y  (Extra points to fish/fish products; meat/meat product as moderation components) |
| MEDI-QUEST(45) | Equal weighting for each construct | * Points are given for consumption of fish and fish products. Vegan/vegetarian diets may be penalized for having no meat consumption despite meat alternatives (legumes) being scored in the index. | Y  (Alcohol only) | N | Y | Y  (Extra points to fish intake; meat/meat product as moderation components) |
| MDSS(32) | Different weighting assigned to constructs depending on significance on overall diet recommendations | * Points are given for consumption of fish. Vegan/vegetarian diets may be penalized for having no meat consumption despite meat alternatives (legumes) being scored in the index. | Y | N | N | Y  (Extra points to fish; red meat as moderation component) |
| EVIDENT Diet Score(6) | Equal weighting for each construct, resulting in a global scoring which was then standardized to a 0-100 point range | * Vegan/vegetarian diets may be penalized for having no meat consumption despite meat alternatives (beans, lentils, chickpeas) being scored in the index. | N | Y | Y | Y  (Extra points to fish/poultry/rabit; red/processed meat considered a negative food group component) |
| MEDAS  (41) | Equal weighting for each construct | * Points are given for consumption of fish/seafood. Vegan/vegetarian diets may be penalized for having no meat consumption despite meat alternatives (pulses) being scored in the index. | N | NA | NA | Y  (Extra points to preference for white meat over red meat/processed meat) |
| MSDPS  (38) | Equal weighting for each construct) and standardized to a 0-100 scale. Then multiplied by a weighting factor (% of total energy contributed by the 13 constructs) to obtain the final MSDPS score. | * Points are given for consumption of fish and other seafood, poultry and meats. Vegan/vegetarian diets may be penalized for having no meat consumption despite meat alternatives (legumes) being scored in the index. | Y | N | Y | N |
| **Category 3 – Specific Sub-populations and Chronic Disease Risk** | | | | | | |
| DST  (Older adults) (24) | Different weighting assigned depending on the number of assessable items in each construct | * Nil | N | N | Y | Y |
| DST  (Oldest adults) (30) | Equally by each construct | * No penalty given for no meat intake | N | NA | Y | N |
| DST  (Middle-aged adults) (31) | Different weighting assigned depending on the number of assessable items in each construct | * No details provided on whether penalties applies if participants does not eat meat | No details provided | Y | Y | Y |
| AHEI-2010(8) | Equally by each construct | * Vegan/vegetarian participants may be penalized for having no meat consumption despite meat alternatives being scored in the index. | Y | Y | Y | N |
| Dietary Risk Assessment  (28) | Equally by each construct | * Frequency of trimming fats from meat and fish intake were assessed and option of not eating meat or fish/soya milk were available in the questionnaire. However, the study did not elaborate whether penalty were given to individuals who does not consume fish or meat. | N | Y | Y | Y |
| EDI(29) | Equally by each construct | * Did not assess meat intake and assessed only nuts/beans/peas/lentils and processed meat intake. Vegan/vegetarian individuals are not penalized for not having meat/processed meat. | N | N | Y | NA  (Meat not assessed. Processed meat included in scoring for considerations of sodium content) |

**Abbreviations**: RDGI, RESIDE Dietary Guideline Index; S-RDGI1, Simple RESIDE Dietary Guideline Index 1; S-RDGI2, Simple RESIDE Dietary Guideline Index 2; ARFS, Australian Recommended Food Score; FFQ, Food frequency Questionnaire; WFR, Weighted Food Record; HEIFA, Healthy Eating Index For Australian; TDS, Total Diet Score; DGI, Dietary Guideline Index; DQI, Diet Quality Index; DGAI, Dietary Guidelines Adherence Index; HDHI, Healthy Dietary Habits Index; HEI, Healthy Eating Index; HFD, Healthy Food Diversity; MediCul, Mediterranean Diet And Culinary Index; MDS, Mediterranean Diet Score; MD, Mediterranean Diet; MEDAS, Mediterranean Diet Adherence Screener; MDSS, Mediterranean Diet Serving Score; MEDAS, Mediterranean Diet Adherence Screener; MSDPS, Mediterranean-Style Dietary Pattern Score; DST, Dietary Screening Tool; A-HEI, Alternate Healthy Eating Index; EDI, Elderly Dietary Index; DQT, Diet Quality Tool; DASH, Dietary Approaches To Stop Hypertension; DASH-Q, DASH Quality

\* Higher score indicates higher diet quality based on dietary pattern assessed

†Higher score indicates lower diet quality based on dietary pattern assessed

‡Each construct ais a whole food/food group or key nutrient, depending on the grouping of each individual index, where a criteria for maximum or minimum scoring were given to each constructs to contribute to the total score. Significance of constructs depends on the main focus of each indices or their theoretical framework. For example, indices assessing adherence to national dietary guidelines may allocate higher weighting to main food groups (vegetables, fruit, dairy, meat/alternatives and grains) than to fluid (water and alcohol) intake. Some indices may have multiple components under each constructs to facilitate assessment of certain dimensions of diet quality.

§Y, Yes; N, No; NA, Not Assessed by Index

**Supplementary Material 3 - COSMIN Risk of Bias Checklist\***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **RDGI,**  **S-RDGI1 &**  **S-RDGI2** | **ARFS** | **HEIFA-2013** | **TDS** | **DG1-2013** | **Aussie-DQI** | **DGAI-2015** |
|  |  | Bivoltsis, et al., 2018(25) | Collins, et al., 2015(26) | Roy et al., 2015(37) | Russell et al., 2017(39) | Thorpe et al., 2016(43) | Zarrin et al., 2013(48) | Jessri, et al., 2016(27) |
| ***6. Reliability*** | |  |  |  |  |  |  |  |
| 1 | Were patients stable in the interim period on the construct to be measured? | N | N | N | N | N | N | N |
| 2 | Was the time interval appropriate? | N | N | N | N | N | N | N |
| 3 | Were the test conditions similar for the measurements? e.g. type of administration, environment, instructions | A | A | A | V | A | V | V |
| 4 | For continuous scores: Was an intraclass correlation coefficient (ICC) calculated? | A | V | A | A | I | I | A |
| 5 | For dichotomous/nominal/ordinal scores: Was kappa calculated? | N | N | N | N | N | N | N |
| 6 | For ordinal scores: Was a weighted kappa calculated? | N | N | N | N | N | N | N |
| 7 | For ordinal scores: Was the weighting scheme described? e.g. linear, quadratic | N | N | N | N | N | N | N |
| 8 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-8* | **A** | **A** | **A** | **A** | **I** | **I** | **A** |
|  |  |  |  |  |  |  |  |  |
| ***7. Measurement error*** | |  |  |  |  |  |  |  |
| 1 | Were patients stable in the interim period on the construct to be measured? | N | N | N | N | N | N | N |
| 2 | Was the time interval appropriate? | N | N | N | N | N | N | N |
| 3 | Were the test conditions similar for the measurements? e.g. type of administration, environment, instructions | A | A | A | A | A | A | A |
| 4 | For continuous scores: Was the Standard Error of Measurement (SEM), Smallest Detectable Change (SDC) or Limits of Agreement (LoA) calculated? | V | A | V | V | I | I | I |
| 5 | For dichotomous/nominal/ordinal scores: Was the percentage (positive and negative) agreement calculated? | N | N | N | N | N | N | N |
| 6 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-6* | **I** | **A** | **A** | **A** | **I** | **I** | **I** |
|  |  |  |  |  |  |  |  |  |
| ***8. Criterion validity*** | |  |  |  |  |  |  |  |
| 1 | For continuous scores: Were correlations, or the area under the receiver operating curve calculated? | V | V |  | V |  | V | V |
| 2 | For dichotomous scores: Were sensitivity and specificity determined? | V | N |  | N |  | N | N |
| 3 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-3* | **V** | **V** | **N** | **V** | **N** | **V** | **V** |
|  |  |  |  |  |  |  |  |  |
| ***9. Hypotheses testing for construct validity*** | |  |  |  |  |  |  |  |
| **9a. Comparison with other outcome measurement instruments (convergent validity)** | |  |  |  |  |  |  |  |
| 1 | Is it clear what the comparator instrument(s) measure(s)? |  | V |  |  |  |  |  |
| 2 | Were the measurement properties of the comparator instrument(s) adequate? |  | V |  |  |  |  |  |
| 3 | Was the statistical method appropriate for the hypotheses to be tested? |  | V |  |  |  |  |  |
| 4 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-4* | **N** | **V** | **N** | **N** | **N** | **N** | **N** |
|  |  |  |  |  |  |  |  |  |
| **9b. Comparison between subgroups (discriminative or known-groups validity)** | |  |  |  |  |  |  |  |
| 5 | Was an adequate description provided of important characteristics of the subgroups? | V |  |  | V | V | V | V |
| 6 | Was the statistical method appropriate for the hypotheses to be tested? | V |  |  | V | V | V | V |
| 7 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 5-7* | **V** | **N** | **N** | **V** | **V** | **V** | **V** |

**COSMIN Risk of Bias Checklist (continued)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **HDHI** | **DQI** | **HEI-2015** | **US HFD Index** | **MediCul** | **MDS** | **MEDI-LITE score** |
|  |  | Wong et al., 2017(47) | Schroder, et al., 2012(40) | Reedy et al., 2018(36) | Vadiveloo et al., 2014(44) | Radd-Vagenas, et al., 2018(35) | Panagiotakos, et al., 2006(34) | Sofi et al., 2017(42) |
| ***6. Reliability*** | |  |  |  |  |  |  |  |
| 1 | Were patients stable in the interim period on the construct to be measured? | N | N | N | N | N | N | N |
| 2 | Was the time interval appropriate? | N | N | N | N | N | N | N |
| 3 | Were the test conditions similar for the measurements? e.g. type of administration, environment, instructions | V | A | A | A | V | V | V |
| 4 | For continuous scores: Was an intraclass correlation coefficient (ICC) calculated? | I | A | A | A | V | I | A |
| 5 | For dichotomous/nominal/ordinal scores: Was kappa calculated? | N | N | N | N | N | N | N |
| 6 | For ordinal scores: Was a weighted kappa calculated? | N | N | N | N | N | N | N |
| 7 | For ordinal scores: Was the weighting scheme described? e.g. linear, quadratic | N | N | N | N | N | N | N |
| 8 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-8* | **I** | **A** | **A** | **A** | **V** | **I** | **A** |
|  |  |  |  |  |  |  |  |  |
| ***7. Measurement error*** | |  |  |  |  |  |  |  |
| 1 | Were patients stable in the interim period on the construct to be measured? | N | N | N | N | N | N | N |
| 2 | Was the time interval appropriate? | N | N | N | N | N | N | N |
| 3 | Were the test conditions similar for the measurements? e.g. type of administration, environment, instructions | V | A | A | A | V | V | V |
| 4 | For continuous scores: Was the Standard Error of Measurement (SEM), Smallest Detectable Change (SDC) or Limits of Agreement (LoA) calculated? | I | V | I | I | V | I | I |
| 5 | For dichotomous/nominal/ordinal scores: Was the percentage (positive and negative) agreement calculated? | N | N | N | N | N | N | N |
| 6 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-6* | **I** | **A** | **I** | **I** | **V** | **I** | **I** |
|  |  |  |  |  |  |  |  |  |
| ***8. Criterion validity*** | |  |  |  |  |  |  |  |
| 1 | For continuous scores: Were correlations, or the area under the receiver operating curve calculated? | V |  | V |  |  | V |  |
| 2 | For dichotomous scores: Were sensitivity and specificity determined? | N |  | N |  |  | N |  |
| 3 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-3* | **V** | **N** | **V** | **N** | **N** | **V** | **N** |
|  |  |  |  |  |  |  |  |  |
| ***9. Hypotheses testing for construct validity*** | |  |  |  |  |  |  |  |
| **9a. Comparison with other outcome measurement instruments (convergent validity)** | |  |  |  |  |  |  |  |
| 1 | Is it clear what the comparator instrument(s) measure(s)? |  | V | V | V | V |  | V |
| 2 | Were the measurement properties of the comparator instrument(s) adequate? |  | V | V | V | V |  | V |
| 3 | Was the statistical method appropriate for the hypotheses to be tested? |  | V | V | V | V |  | V |
| 4 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-4* | **N** | **V** | **V** | **V** | **V** | **N** | **V** |
|  |  |  |  |  |  |  |  |  |
| **9b. Comparison between subgroups (discriminative or known-groups validity)** | |  |  |  |  |  |  |  |
| 5 | Was an adequate description provided of important characteristics of the subgroups? | V |  | V | V |  | V |  |
| 6 | Was the statistical method appropriate for the hypotheses to be tested? | V |  | V | V |  | V |  |
| 7 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 5-7* | **V** | **N** | **V** | **V** | **N** | **V** | **N** |

**COSMIN Risk of Bias Checklist (continued)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **MEDI-Quest score** | **MDSS** | **EVIDENT diet index** | **MEDAS Score** | **MSDPS** | **DST** | **DST** |
|  |  | Vitale et al., 2018(45) | Monteagudo, et al., 2015(32) | Rodríguez-Martin et al., 2017(6) | Schroder et al., 2011(41) | Rumawas et al., 2009(38) | Bailey, et al., 2009(24) | Liu, et al., 2019(30) |
| ***6. Reliability*** | |  |  |  |  |  |  |  |
| 1 | Were patients stable in the interim period on the construct to be measured? | N | N | N | N | N | N | N |
| 2 | Was the time interval appropriate? | N | N | N | N | N | N | N |
| 3 | Were the test conditions similar for the measurements? e.g. type of administration, environment, instructions | V | A | V | V | A | V | V |
| 4 | For continuous scores: Was an intraclass correlation coefficient (ICC) calculated? | A | I | I | V | A | I | A |
| 5 | For dichotomous/nominal/ordinal scores: Was kappa calculated? | N | N | N | N | N | N | N |
| 6 | For ordinal scores: Was a weighted kappa calculated? | N | N | N | N | N | N | N |
| 7 | For ordinal scores: Was the weighting scheme described? e.g. linear, quadratic | N | N | N | N | N | N | N |
| 8 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-8* | **A** | **I** | **I** | **V** | **A** | **I** | **A** |
|  |  |  |  |  |  |  |  |  |
| ***7. Measurement error*** | |  |  |  |  |  |  |  |
| 1 | Were patients stable in the interim period on the construct to be measured? | N | N | N | N | N | N | N |
| 2 | Was the time interval appropriate? | N | N | N | N | N | N | N |
| 3 | Were the test conditions similar for the measurements? e.g. type of administration, environment, instructions | V | A | V | V | A | V | V |
| 4 | For continuous scores: Was the Standard Error of Measurement (SEM), Smallest Detectable Change (SDC) or Limits of Agreement (LoA) calculated? | I | I | I | V | I | I | I |
| 5 | For dichotomous/nominal/ordinal scores: Was the percentage (positive and negative) agreement calculated? | N | N | N | N | N | N | N |
| 6 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-6* | **I** | **I** | **I** | **V** | **I** | **I** | **I** |
|  |  |  |  |  |  |  |  |  |
| ***8. Criterion validity*** | |  |  |  |  |  |  |  |
| 1 | For continuous scores: Were correlations, or the area under the receiver operating curve calculated? |  |  | V | V |  | V |  |
| 2 | For dichotomous scores: Were sensitivity and specificity determined? |  |  | V | N |  | N |  |
| 3 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-3* | **N** | **N** | **V** | **V** | **N** | **V** | **N** |
|  |  |  |  |  |  |  |  |  |
| ***9. Hypotheses testing for construct validity*** | |  |  |  |  |  |  |  |
| **9a. Comparison with other outcome measurement instruments (convergent validity)** | |  |  |  |  |  |  |  |
| 1 | Is it clear what the comparator instrument(s) measure(s)? | V | V | V | V |  | V | V |
| 2 | Were the measurement properties of the comparator instrument(s) adequate? | V | V | V | V |  | V | V |
| 3 | Was the statistical method appropriate for the hypotheses to be tested? | V | V | V | V |  | V | V |
| 4 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-4* | **V** | **V** | **V** | **V** | **N** | **V** | **V** |
|  |  |  |  |  |  |  |  |  |
| **9b. Comparison between subgroups (discriminative or known-groups validity)** | |  |  |  |  |  |  |  |
| 5 | Was an adequate description provided of important characteristics of the subgroups? |  | V | V | V | V | V | V |
| 6 | Was the statistical method appropriate for the hypotheses to be tested? |  | V | V | V | V | V | V |
| 7 | Were there any other important flaws? |  |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 5-7* | **N** | **V** | **V** | **V** | **V** | **V** | **V** |

**COSMIN Risk of Bias Checklist (continued)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **DST** | **AHEI-2010** | **Dietary Risk Assessment** | **EDI** | **DQT** | **DASH- Q** |
|  |  | Marra, et al., 2018(31) | Chiuve et al., 2012(8) | Jilcott, et al., 2007(28) | Kourlaba, et al., 2009(29) | O’Reilly et al., 2012(33) | Warren-Findlow et al., 2016(46) |
| ***6. Reliability*** | |  |  |  |  |  |  |
| 1 | Were patients stable in the interim period on the construct to be measured? | N | N | N | N | N | N |
| 2 | Was the time interval appropriate? | N | N | N | N | N | N |
| 3 | Were the test conditions similar for the measurements? e.g. type of administration, environment, instructions | V | A | V | A | A | A |
| 4 | For continuous scores: Was an intraclass correlation coefficient (ICC) calculated? | I | I | A | I | A | A |
| 5 | For dichotomous/nominal/ordinal scores: Was kappa calculated? | N | N | N | N | N | N |
| 6 | For ordinal scores: Was a weighted kappa calculated? | N | N | N | N | N | N |
| 7 | For ordinal scores: Was the weighting scheme described? e.g. linear, quadratic | N | N | N | N | N | N |
| 8 | Were there any other important flaws? |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-8* | **I** | **I** | **A** | **I** | **A** | **A** |
|  |  |  |  |  |  |  |  |
| ***7. Measurement error*** | |  |  |  |  |  |  |
| 1 | Were patients stable in the interim period on the construct to be measured? | N |  | N | N | N | N |
| 2 | Was the time interval appropriate? | N |  | N | N | N | N |
| 3 | Were the test conditions similar for the measurements? e.g. type of administration, environment, instructions | V |  | V | A | A | A |
| 4 | For continuous scores: Was the Standard Error of Measurement (SEM), Smallest Detectable Change (SDC) or Limits of Agreement (LoA) calculated? | I |  | I | I | I | I |
| 5 | For dichotomous/nominal/ordinal scores: Was the percentage (positive and negative) agreement calculated? | N |  | N | N | N | N |
| 6 | Were there any other important flaws? |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-6* | **I** | **N** | **I** | **I** | **I** | **I** |
|  |  |  |  |  |  |  |  |
| ***8. Criterion validity*** | |  |  |  |  |  |  |
| 1 | For continuous scores: Were correlations, or the area under the receiver operating curve calculated? | V | V | V | V |  |  |
| 2 | For dichotomous scores: Were sensitivity and specificity determined? | N |  | N | V |  |  |
| 3 | Were there any other important flaws? |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-3* | **V** | **V** | **V** | **V** | **N** | **N** |
|  |  |  |  |  |  |  |  |
| ***9. Hypotheses testing for construct validity*** | |  |  |  |  |  |  |
| **9a. Comparison with other outcome measurement instruments (convergent validity)** | |  |  |  |  |  |  |
| 1 | Is it clear what the comparator instrument(s) measure(s)? |  |  | V | V | V | V |
| 2 | Were the measurement properties of the comparator instrument(s) adequate? |  |  | V | V | V | A |
| 3 | Was the statistical method appropriate for the hypotheses to be tested? |  |  | V | V | V | A |
| 4 | Were there any other important flaws? |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 1-4* | **N** | **N** | **V** | **V** | **V** | **A** |
|  |  |  |  |  |  |  |  |
| **9b. Comparison between subgroups (discriminative or known-groups validity)** | |  |  |  |  |  |  |
| 5 | Was an adequate description provided of important characteristics of the subgroups? | V | V |  |  | V | V |
| 6 | Was the statistical method appropriate for the hypotheses to be tested? | V | V |  |  | V | V |
| 7 | Were there any other important flaws? |  |  |  |  |  |  |
|  | **TOTAL** *Lowest score of items 5-7* | **V** | **V** | **N** | **N** | **V** | **V** |

Abbreviations: RDGI, RESIDE Dietary Guideline Index; S-RDGI1, Simple RESIDE Dietary Guideline Index 1; S-RDGI2, Simple RESIDE Dietary Guideline Index 2; ARFS, Australian Recommended Food Score; HEIFA, Healthy Eating Index For Australian; TDS, Total Diet Score; DGAI, Dietary Guidelines Adherence Index; DGI, Dietary Guideline Index; DQI, Diet Quality Index; HDHI, Healthy Dietary Habits Index; HEI, Healthy Eating Index; HFD, Healthy Food Diversity; MediCul, Mediterranean Diet And Culinary Index; MDS, Mediterranean Diet Score; MDSS, Mediterranean Diet Serving Score; MEDAS, Mediterranean Diet Adherence Screener; MSDPS, Mediterranean-Style Dietary Pattern Score; DQT, Diet Quality Tool; DASH-Q, DASH Quality; DASH, Dietary Approaches To Stop Hypertension; EDI, Elderly Dietary Index; AHEI, Alternative Healthy Eating Index; DST, Dietary Screening Tool

\*Ratings from COSMIN Risk of Bias Checklist: N, Not Applicable; A, Adequate; V, Very good; I, Inadequate

**Supplementary Material 4 – Quality Assessment**

**Table 1 – Quality Assessment of Cross-Sectional Studies\***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Index | 1. Were the criteria for inclusion in the sample clearly defined? | 2. Were the study subjects and the setting described in detail? | 3. Was the exposure measured in a valid and reliable way? | 4. Were objective, standard criteria used for measurement of the condition? | 5. Were confounding factors identified? | 6. Were strategies to deal with confounding factors stated? | 7. Were the outcomes measured in a valid and reliable way? | 8. Was appropriate statistical analysis used? |
| **Category 1 – Adherence to National Dietary Guidelines** | | | | | | | | |
| RDGI(25)  S-RDGI1(25)  S-RDGI2(25) | Y | Y | Y | Y | Y | Y | Y | Y |
| HEIFA-2013(37) | N – Inclusion criteria not specified | N – Participant characteristic not described | Y | Y | N – Did not mention about adjusting for confounding | NA | Y | Y |
| DGI-2013(43) | Y | Y | Y | Y | Y | Y | Y | Y |
| DGAI-2015(27) | Y | Y | Y | Y | Y | Y | Y | Y |
| HDHI(47) | Y | Y | Y | Y | Y | Y | Y | Y |
| US HFD Index(44) | Y | Y | Y | Y | Y | Y | Y | Y |
| **Category 2 - Adherence to the Mediterranean Diet** | | | | | | | | |
| MDS(34) | Y | Y | Y | Y | Y | Y | Y | Y |
| MEDI-LITE(42) | Y | Y | Y | Y | Y | Y | Y | Y |
| MEDI-QUEST(45) | Y | Y | Y | Y | Y | Y | Y | Y |
| MDSS(32) | Y | Y | Y | Y | Y | Y | Y | Y |
| EVIDENT Diet Score(6) | Y | Y | Y | Y | Y | Y | Y | Y |
| MEDAS  (41) | Y | Y | Y | Y | Y | Y | Y | Y |
| MDS(34) | Y | Y | Y | Y | Y | Y | Y | Y |
| **Category 3 - Others** | | | | | | | | |
| DST  (Oldest adults) (30) | Y | Y | Y | Y | Y | Y | Y | Y |
| DST  (Middle-aged adults) (31) | Y | Y | Y | Y | Y | Y | Y | Y |
| Dietary Risk Assess-ment(28) | Y | Y | Y | Y | Y | Y | Y | Y |
| EDI(29) | Y | Y | Y | Y | Y | Y | Y | Y |
| DQT(33) | Y | Y | Y | Y | N – Did not mention about adjusting for confounding | NA | Y | Y |
| DASH-Q(46) | Y | Y | Y | Y | N – No mention of confounders besides demographic differences | N – No adjustments made to account for significant demographic differences between university and national sample | Y | Y |

Abbreviations: RDGI, RESIDE Dietary Guideline Index; S-RDGI1, Simple RESIDE Dietary Guideline Index 1; S-RDGI2, Simple RESIDE Dietary Guideline Index 2; HEIFA, Healthy Eating Index For Australian; DGI, Dietary Guideline Index; DGAI, Dietary Guidelines Adherence Index; HDHI, Healthy Dietary Habits Index; HFD, Healthy Food Diversity; MD, Mediterranean Diet; MDS, Mediterranean Diet Score; MDSS, Mediterranean Diet Serving Score; MEDAS, Mediterranean Diet Adherence Screener; MSDPS, Mediterranean-Style Dietary Pattern Score; DQT, Diet Quality Tool; DASH, Dietary Approaches To Stop Hypertension; DASH-Q, DASH Quality; EDI, Elderly Dietary Index; DST, Dietary Screening Tool

\*Y, Yes; N, No; NA, Not Applicable

**Table 2 – Quality Assessment of Cohort Studies\***

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Index | 1. Were the two groups similar and recruited from the same population? | 2. Were the exposures measured similarly to assign people to both exposed and unexposed groups? | 3. Was the exposure measured in a valid and reliable way? | 4. Were confounding factors identified? | 5. Were strategies to deal with confounding factors stated? | 6. Were the groups/participants free of the outcome at the start of the study (or at the moment of exposure)? | 7. Were the outcomes measured in a valid and reliable way? | 8. Was the follow up time reported and sufficient to be long enough for outcomes to occur? | 9. Was follow up complete, and if not, were the reasons to loss to follow up described and explored? | 10. Were strategies to address incomplete follow up utilized? | 11. Was approp  -riate statistical analysis used? |
| **Category 1 - Adherence to National Dietary Guidelines** | | | | | | | | | | | |
| ARFS(26) | NA | NA | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| TDS(39) | Y | NA | Y | Y | Y | Y | Y | Y | Y | Y | NA |
| Aussie-DQI(48) | Y | NA | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| DQI(40) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| HEI-2015(36) | Y | NA | Y | Y | Y | Y | Y | Y | Y | Y | NA |
| **Category 2 - Adherence to the Mediterranean Diet** | | | | | | | | | | | |
| MediCul(35) | NA | NA | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| **Category 4 – Others** | | | | | | | | | | | |
| DST(24) | NA | NA | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| AHEI-2010(8) | NA | NA | Y | Y | Y | Y | Y | Y | Y | Y | Y |

Abbreviations: ARFS, Australian Recommended Food Score; TDS, Total Diet Score; DQI, Diet Quality Index; HEI, Healthy Eating Index; MD, Mediterranean Diet; MediCul, Mediterranean Diet And Culinary Index; AHEI, Alternative Healthy Eating Index; DST, Dietary Screening Tool

\*NA, Not Applicable; Y, Yes