**Table S3: Risk of bias (according to the Effective Public Health Practice Project (EPHPP) quality assessment of the studies***(ordered by study ID)*

**Barnick et al, 2014 1**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | moderate | the selected individuals are at least somewhat likely to be representative of the target population and the percentage of participation was not described |
| **Study design** | weak | quasi-experimental pre-post test |
| **Confounders** | weak | Control of confounders was not described |
| **Blinding** | weak | blinding was not described |
| **Data collection methods** | weak | both reliability and validity of checklist for data collection were not described |
| **Withdrawals and drop-outs** | moderate  | Can't tell |
| **Global rating for this paper** | weak  | there is four weak |
| **Overall assessment**  | **weak**  |  |

**Beckman et all, 2007 2**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | strong | ninety-six youth completed the pre-survey |
| **Study design** | moderate | case-control study |
| **Confounders** | weak | Control of confounders was not described |
| **Blinding** | moderate | Blinding of teachers and students not possible.  |
| **Data collection methods** | weak | data collection tools were not shown to be valid.  |
| **Withdrawals and drop-outs** | moderate | 69% completed the post-survey |
| **Global rating for this paper** | weak | It has two weak |
| **Overall assessment**  | **weak** |  |

**Block et al, 2012 3**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | Strong | Percentage of selected individuals agreed to participate is more than 80%. |
| **Study design** | Strong | It is a randomised controlled study |
| **Confounders** | moderate | Adjustment for baseline and clustering somewhat (<80%) was done. |
| **Blinding** | moderate | Blinding of teachers and students not possible.  |
| **Data collection methods** | weak | They didn't state that data collection tools were shown to be valid or not. |
| **Withdrawals and drop-outs** | modertate | follow-up rate was 60 – 79%. |
| **Global rating for this paper** | modertate | There is one weak. |
| **Overall assessment** | **modertate** |  |

**Cunningham-Sabo et al, 2014, 4**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | moderate | Participants were predominantly lowincome and Hispanic, which limited the generalization of findings to other populations |
| **Study design** | weak | Pre–post, quasi-experimental, 2 cohorts & nonrandomized assignmen  |
| **Confounders** | moderate | there was no difference at baseline and post-intervention based on the SES demographic factors |
| **Blinding** | moderate | Blinding of researchers and students not possible. |
| **Data collection methods** | strong | both reliability and validity of checklist for data collection were described |
| **Withdrawals and drop-outs** | moderate  | the follow-up rate was 69.9% |
| **Global rating for this paper** | moderate | there is one weak |
| **Overall assessment**  | **moderate** |  |

**Gavaravarapu et al, 2016 5**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | strong | Participants were randomly selected |
| **Study design** | weak | pre-post design without control group |
| **Confounders** | moderate | there was no difference at baseline and post-intervention based on the SES demographic factors |
| **Blinding** | moderate | Blinding of teachers and students not possible. |
| **Data collection methods** | moderate | The data collection tool has been shown to be valid but has not been shown to be reliable |
| **Withdrawals and drop-outs** | strong  | All of the participants completed the study |
| **Global rating for this paper** | moderate | there is one weak |
| **Overall assessment**  | **moderate** |  |

**Gold et al, 20176**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | moderate | No significant differences exist between the schools in terms of free and reducedpriced meal eligibility, access to the FFVSP, or other demographic variables.Since, only those schools that agreed to participate were used in the study, and thus a potential for selection bias may be exist.  |
| **Study design** | strong | randomized control and intervention group study  |
| **Confounders** | strong | controlled for at least 80% of relevant confounders |
| **Blinding** | moderate | Blinding of teachers and students not possible. |
| **Data collection methods** | weak | Data collection was selfreported and the reliability of scale was not shown |
| **Withdrawals and drop-outs** | strong | Of 662, 599 completed the baseline (pre)survey and 535 completed both the pre- and postsurveys (89.3% retention) |
| **Global rating for this paper** | moderate | there is one weak |
| **Overall assessment**  | **moderate** |  |

**Hawthorne et al, 2006 7**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | moderate | The selected individuals are at least somewhat likely to be representative of the target population |
| **Study design** | weak | Single cohort using pre-post tests |
| **Confounders** | weak | controlled for confounders were not described  |
| **Blinding** | moderate | Blinding of teachers and students not possible |
| **Data collection methods** | strong | Instrument has validity and reliability  |
| **Withdrawals and drop-outs** | strong | All of participants completed the study |
| **Global rating for this paper** | weak | there is two weak |
| **Overall assessment**  | **weak** |  |

**KATZ, et al. 2011 8**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | weak  | Results were obtained from a single school district which potentially limiting generalizability. |
| **Study design** | moderate | case-control study |
| **Confounders** | weak | Control of confounders was not described. |
| **Blinding** | moderate | The study participants wes not aware of the research question but assessors were aware. |
| **Data collection methods** | strong |  data collection tools were shown to be valid and reliable.(FFQ & Youth and Adolescent Questionnaire) |
| **Withdrawals and drop-outs** | weak | withdrawals and drop-outs were not described |
| **Global rating for this paper** | weak | There was three weak. |
| **Overall assessment**  | **weak** |  |

**McAleese & Rankin, 20079**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | strong | The sample populations at each school contained asimilar representation of ethnic, cultural, and socioeconomic traits. |
| **Study design** | moderate | Nonrandomized trial |
| **Confounders** | strong | there was no difference at baseline and post-intervention |
| **Blinding** | strong | Blinding of teachers and students not possible.  |
| **Data collection methods** | weak | the nature of self-reported data (data collection tools was 24-hour food recall) |
| **Withdrawals and drop-outs** | Can't tell  | Can't tell |
| **Global rating for this paper** | moderate  | one weak |
| **Overall assessment**  | **moderate**  |  |

**Miller A, et al. 2016 10**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | weak | No random sequence generation due to study design: non-randomised controlled study using a convenience sample |
| **Study design** | moderate | a pre-post test design |
| **Confounders** | moderate | there was no difference at baseline and post-intervention based on the SES and demographic factors |
| **Blinding** | strong | blinding of researchers and students not possible. |
| **Data collection methods** | weak | information gathering was self-report |
| **Withdrawals and drop-outs** | strong |  all of participants completed the study |
| **Global rating for this paper** | weak | two weaks. |
| **Overall assessment**  | **week** |  |

**Morgan et al, 2010 11**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | moderate | this study was conducted in one area of the Hunter region, the results may not be generalisable to other populations |
| **Study design** | modearte | was not a randomized controlled trial |
| **Confounders** | weak | The percentage of relevant confounders that were controlled was not indicated |
| **Blinding** | moderate | Blinding of teachers and students not possible |
| **Data collection methods** | strong | Data collection method/tool is valid and reliable |
| **Withdrawals and drop-outs** | strong | The percentage of follow up was 82.8%  |
| **Global rating for this paper** | moderate | there is one weak |
| **Overall assessment**  | **moderate** |  |

**Perez-Rodrigo & Aranceta, Education dept Spain, in Bilbao, 1997 12**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | weak | Participants may to be representative of the target population (low-income area) |
| **Study design** | moderate | pre-post test survey without control group |
| **Confounders** | moderate | there was no difference at baseline and post-intervention based on the SES and demographic factors |
| **Blinding** | moderate | blinding of teachers and students not possible |
| **Data collection methods** | weak | Instruments were not valid and reliable |
| **Withdrawals and drop-outs** | moderate | The most of the participants completed the study (has not been stated the percentage) |
| **Global rating for this paper** | weak | There is two weak |
| **Overall assessment**  | **weak** |  |

**PHABC, 201713**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | weak | They didn't state the percentage of selected individuals who agreed to participate.  |
| **Study design** | weak | Pre-post tes, without controlt |
| **Confounders** | moderate | there was no difference at baseline and post-intervention based on the SES and demographic factors |
| **Blinding** | moderate | Blinding of teachers and students not possible.  |
| **Data collection methods** | weak | They didn't state that data collection tools were shown to be valid/reliable or not. |
| **Withdrawals and drop-outs** | modertate | Indicate the percentage of participants completing the study. |
| **Global rating for this paper** | weak | It has three weak. |
| **Overall assessment**  | **weak** |  |

**Revill et al, 2004 14**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | strong | schools were recruited randomly between two groupd. The allocation of schoolst o control and intervention group did not affect numbers of volunteers.  |
| **Study design** | moderate | case control study design |
| **Confounders** | strong | Adjustment for confounders was statistically done |
| **Blinding** | strong | sustain the anonymity of intervention and control groups to research nutritionist responsible for collecting dietary data and to carry out a blind evaluation |
| **Data collection methods** | weak | There was no information on reliability measures.  |
| **Withdrawals and drop-outs** | weak | Don't indicate the percentage of participants completing the study. |
| **Global rating for this paper** | weak | It has two weak |
| **Overall assessment**  | **weak** |  |

**Scherr RE et al, 2017, northern and central California 15**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | strong | the individuals are selected to participate in the study likely to be representative of the target population |
| **Study design** | strong | A clustered, randomized, controlled intervention |
| **Confounders** | strong | Intervention and control schools were identified within the same school district so that they have similar characteristics across the 2 groups, and multilevel mixed-effects modeling was conducted to account for clustering within the schools and to adjust for any potential confounders in the study. |
| **Blinding** | weak | It was not stated |
| **Data collection methods** | moderate | "When possible, previously validated tools will be used."  |
| **Withdrawals and drop-outs** | strong  | withdrawals and drop-outs were reported in terms of numbers and/or reasons per group control and intervention |
| **Global rating for this paper** | moderate | It has one weak |
| **Overall assessment**  | **moderate** |  |

**Thonney & Bisogni, Cornell University, New York, 2006 16**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | moderate | the individuals are selected to participate in the study likely to be representative of the target population |
| **Study design** | weak | without control group |
| **Confounders** | weak | It is not shown |
| **Blinding** | moderate | Blinding of teachers and students not possible.  |
| **Data collection methods** | weak | data collection tools were not shown to be valid |
| **Withdrawals and drop-outs** | weak  | withdrawals and drop-outs were not reported in terms of numbers and/or reasons per group |
| **Global rating for this paper** | weak | It has three weak |
| **Overall assessment**  | **weak** |  |

**Townsend et al, 2006 17**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | strong | Leaders in the treatment condition were asked to document the activities they conducted with their participants. Of those leaders, 80% (n = 128) completed the questionnaire. |
| **Study design** | strong |  It is a Randomized controlled trial. |
| **Confounders** | strong | The explanatory variable was condition (“intervention” treatment or “delayed intervention” control) as main effect with covariates being preintervention score, gender, age, and ethnicity, with group nested in condition. |
| **Blinding** | moderate | Blinding of teachers and students not possible. The outcome measures are direct (task-based assessment) and not likely to be influenced by lack of blinding. |
| **Data collection methods** | weak | Data collection tools were not valid. Nutrition and food safety knowledge and food preparation skills were assessed by self-report |
| **Withdrawals and drop-outs** | strong | Indicate the percentage of participants completing the study. |
| **Global rating for this paper** | moderate | It has one weak |
| **Overall assessment**  | modearte |  |

**Treu et al, 2017 18**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | moderate | The selected individuals are at least somewhat likely to be representative of the target population (results were obtained from a single intervention school district and a single control district in the same geographic area may limiting generalizability) |
| **Study design** | moderate | Quasi-experimental with three arms |
| **Confounders** | weak | There was a substantial risk of confounding by factors within the school districts (control of confounders was not described e.g., adjusted based on race and etc.) |
| **Blinding** | moderate | Blinding of teachers and students not possible |
| **Data collection methods** | strong | the instrument was valid and reliable |
| **Withdrawals and drop-outs** | strong | the follow-up rate was greater than 80%  |
| **Global rating for this paper** | moderate | there is one weak |
| **Overall assessment**  | **moderate** |  |

**Wolf et al, 2018 19**

|  |  |  |
| --- | --- | --- |
| **Bias** | **Authors’ judgement** | **Support for judgement** |
| **Selection bias** | strong | All participants agreed to participate in the study |
| **Study design** | weak | pre-post surveys without control group |
| **Confounders** | moderate | there was no difference at baseline and post-intervention based on the SES demographic factors |
| **Blinding** | moderate | Blinding of teachers and students not possible |
| **Data collection methods** | moderate | The measures used internally reliable, but they need further testing |
| **Withdrawals and drop-outs** | weak | the follow-up rate was not described |
| **Global rating for this paper** | weak | there is two weak |
| **Overall assessment**  | **weak** |  |

**References**

1 Barnick, A. The Impact of a School Gardening Program on Nutrition Attitudes, Behaviors and Interests Amongst Fourth Grade Students. (2014).

2 Lautenschlager, L. & Smith, C. Beliefs, knowledge, and values held by inner-city youth about gardening, nutrition, and cooking. Agriculture and Human Values 24, 245 (2007).

3 Block, K. et al. Growing community: the impact of the Stephanie Alexander Kitchen Garden Program on the social and learning environment in primary schools. Health Education & Behavior 39, 419-432, doi:<http://dx.doi.org/10.1177/1090198111422937> (2012).

4 Cunningham-Sabo, L. & Lohse, B. Impact of a school-based cooking curriculum for fourth-grade students on attitudes and behaviors is influenced by gender and prior cooking experience. Journal of nutrition education and behavior 46, 110-120 (2014).

5 Gavaravarapu, S. M., Saha, S., Vemula, S. R. & Mendu, V. V. R. Read-B4-U-Eat: A multicomponent communication module to promote food label reading skills among adolescents in India. Journal of nutrition education and behavior 48, 586-589. e581 (2016).

6 Gold, A., Larson, M., Tucker, J. & Strang, M. Classroom nutrition education combined with fruit and vegetable taste testing improves children's dietary intake. Journal of School Health 87, 106-113 (2017).

7 Hawthorne, K. M., Moreland, K., Griffin, I. J. & Abrams, S. A. An educational program enhances food label understanding of young adolescents. Journal of the American Dietetic Association 106, 913-916 (2006).

8 Katz, D. L. et al. Teaching healthful food choices to elementary school students and their parents: the Nutrition Detectives™ program. Journal of School Health 81, 21-28 (2011).

9 McAleese, J. D. & Rankin, L. L. Garden-based nutrition education affects fruit and vegetable consumption in sixth-grade adolescents. Journal of the American Dietetic Association 107, 662-665 (2007).

10 Miller, A. et al. Food-related behavior and intake of adult main meal preparers of 9–10 year-old children participating in iCook 4-H: A five-state childhood obesity prevention pilot study. Appetite 101, 163-170 (2016).

11 Morgan, P. J. et al. The impact of nutrition education with and without a school garden on knowledge, vegetable intake and preferences and quality of school life among primary-school students. Public health nutrition 13, 1931-1940 (2010).

12 Perez-Rodrigo, C. & Aranceta, J. Nutrition education for schoolchildren living in a low-income urban area in Spain. Journal of Nutrition Education 29, 267-273 (1997).

13 Public Health Association of British Columbia (PHABC). 2017. History. Farm to School BC. <http://farmtoschoolbc.ca/about-us/history/>. Accessed 12 November 2020.

14 Revill, S. A. Evaluation of a school-based nutrition and food preperation skills intervention delivered to schoolchildren from deprived social backgrounds, Newcastle University, (2004).

15 Scherr, R. E. et al. A multicomponent, school-based intervention, the shaping healthy choices program, improves nutrition-related outcomes. Journal of Nutrition Education and Behavior 49, 368-379. e361 (2017).

16 Thonney, P. F. & Bisogni, C. A. Cooking up fun! A youth development strategy that promotes independent food skills. Journal of Nutrition Education and Behavior 38, 321-323 (2006).

17 Townsend, M. S., Johns, M., Shilts, M. K. & Farfan-Ramirez, L. Evaluation of a USDA nutrition education program for low-income youth. Journal of nutrition education and behavior 38, 30-41 (2006).

18 Treu, J. A., Doughty, K., Reynolds, J. S., Njike, V. Y. & Katz, D. L. Advancing School and Community Engagement Now for Disease Prevention (ASCEND) a quasi-experimental trial of school-based interventions to prevent childhood obesity. American journal of health promotion 31, 143-152 (2017).

19 Wolfe, W. & Dollahite, J. Choose Health: Food, Fun, and Fitness Curriculum Promotes Positive Behaviors in Youth Compared to Control Period. Journal of nutrition education and behavior 50, S153-S154 (2018).