**SUPPLEMENTARY MATERIAL**

**SupplementalTable 1** - Quality classification of the reviewed studies, according to the scoring system of Loney et al. (9)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Study**  **(first author)** | 1.  Random  sample | 2.  Cross-sectional  design | Total sample | 3.  Sample  Size >300 | 4.  Venous  blood | 5.  Unbiased assessors | 6.  Response  rate >70% | 7.  Anaemia as a dependent variable | 8.  Children  6 or 12 to 60 months old | Total  score |
| ***Studies carried out on childcare centres*** | | | | | | | | | | |
| Novaes (13) | 1 | 1 | 677 | 1 | 0 | 1 | 1 | 1 | 1 | 7 |
| Landim (14) | 1 | 0 | 48 | 0 | 1 | 1 | 0 | 0 | 0 | 3 |
| Zuffo (15) | 1 | 1 | 334 | 1 | 0 | 0 | 0 | 1 | 0 | 4 |
| Matos (16) | 1 | 0 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Pedraza (17) | 1 | 1 | 53 | 0 | 1 | 1 | 1 | 1 | 0 | 6 |
| Oliveira (18) | 1 | 1 | 201 | 0 | 0 | 0 | 0 | 1 | 1 | 4 |
| Lander (19) | 1 | 1 | 319 | 1 | 1 | 1 | 1 | 1 | 0 | 7 |
| Coutinho (20) | 1 | 0 | 99 | 0 | 1 | 1 | 0 | 0 | 0 | 3 |
| Rocha (21) | 1 | 1 | 312 | 1 | 0 | 0 | 0 | 1 | 1 | 5 |
| Costa (22) | 1 | 1 | 93 | 0 | 0 | 0 | 1 | 1 | 0 | 4 |
| Camillo (23) | 1 | 1 | 160 | 0 | 1 | 0 | 1 | 1 | 1 | 6 |
| Hadler (24) | 1 | 0 | 196 | 0 | 1 | 1 | 1 | 1 | 0 | 5 |
| Vieira (25) | 1 | 1 | 162 | 0 | 1 | 0 | 1 | 1 | 1 | 6 |
| ***Studies conducted in health services*** | | | | | | | | | | |
| Magalhães (26) | 1 | 1 | 366 | 1 | 0 | 1 | 1 | 1 | 0 | 6 |
| Bortolini (27) | 1 | 0 | 131 | 0 | 1 | 1 | 1 | 1 | 0 | 5 |
| **Garcia (28)** | **1** | **1** | **164** | **0** | **1** | **1** | **1** | **1** | **0** | **6** |
| Engstrom (29) | 1 | 0 | 94 | 0 | 0 | 1 | 1 | 1 | 0 | 4 |
| ***Studies conducted in populations submitted to social inequities*** | | | | | | | | | | |
| Ferreira (30) | 1 | 1 | 143 | 0 | 0 | 1 | 1 | 1 | 1 | 6 |
| Campos (31) | 1 | 1 | 97 | 0 | 0 | 1 | 1 | 0 | 1 | 5 |
| Ferreira (32) | 1 | 1 | 55 | 0 | 0 | 1 | 0 | 0 | 1 | 4 |
| Barreto (33) | 1 | 1 | 115 | 0 | 0 | 1 | 1 | 0 | 1 | 5 |
| Leite (34) | 1 | 1 | 5,397 | 1 | 0 | 1 | 1 | 1 | 1 | 7 |
| Ferreira (35) | 1 | 1 | 937 | 1 | 0 | 1 | 1 | 0 | 1 | 6 |
| Mondini (36) | 1 | 1 | 54 | 0 | 0 | 0 | 1 | 1 | 1 | 5 |
| ***Studies with population-based samples*** | | | | | | | | | | |
| Vieira (37) | 1 | 1 | 782 | 1 | 0 | 1 | 1 | 1 | 1 | 7 |
| Arruda (38) | 1 | 0 | 96 | 0 | 0 | 0 | 1 | 1 | 1 | 4 |
| Saraiva (39) | 1 | 1 | 661 | 1 | 1 | 1 | 0 | 1 | 1 | 7 |
| Silla (40) | 1 | 1 | 1,433 | 1 | 0 | 1 | 1 | 1 | 0 | 6 |
| Granado (41) | 1 | 1 | 189 | 0 | 1 | 1 | 1 | 1 | 0 | 6 |
| Gondim (42) | 1 | 1 | 1,108 | 1 | 1 | 0 | 1 | 1 | 1 | 7 |
| Cardoso (43) | 1 | 1 | 526 | 1 | 1 | 1 | 1 | 1 | 1 | 8 |
| Netto (44) | 1 | 1 | 104 | 0 | 1 | 1 | 0 | 1 | 0 | 5 |
| Oliveira (45) | 1 | 1 | 429 | 1 | 0 | 0 | 0 | 1 | 1 | 5 |
| Leal (46) | 1 | 1 | 1,403 | 1 | 1 | 0 | 0 | 1 | 1 | 6 |
| Fujimori (47) | 1 | 1 | 254 | 0 | 0 | 1 | 1 | 1 | 0 | 5 |
| Muniz (48) | 1 | 1 | 200 | 0 | 1 | 1 | 1 | 1 | 1 | 7 |
| Zanin (49) | 1 | 0 | 306 | 1 | 1 | 1 | 1 | 1 | 1 | 7 |

Was given one point to each of the eight questions (Criterion not met or not reported = 0):

1. Random sample or whole population.
2. Used a cross-sectional design.
3. Adequate sample size (>300 subjects).
4. Standard measures (venous blood rather than capillary blood).
5. Outcomes measured by unbiased assessors.
6. Adequate response rate (>70%).
7. Had anemia prevalence as a dependent variable.
8. The study included children from 6 or 12 to 60 months old in full.

**Sensitivity analysis**

**SupplementalTable 2 -**  Subgroup Analysis

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Scenario**  **PR (95CI)** | **Indicator** | **Cross-sectional**  **Design**  **yes vs. no** | **Sample**  **Size >300**  **yes vs. no** | **Venous**  **Blood**  **yes vs. no** | **Unbiased**  **assessors**  **yes vs. no** | **Response**  **rate >70%**  **yes vs. no** | **Anaemia as**  **dependent variable**  **yes vs. no** | **Children 6 or 12**  **to 60 months old**  **yes vs. no** | **High quality**  **Score ≥5**  **yes vs. no** |
| Day care center (n=13)  I2 = 92.8%  PR = 1.06  95CI = 0.81 - 1.40) | n  I2 (%) | 9 x 4  93.9 x 86.7 | 4 x 9  96.6 vs. 82.7 | 7 x 6  93.2 vs. 91.7 | 6 x 7  96.2 vs. 76.9 | 7 x 6  96.2 vs. **48.3** | 10 x 3  94.3 vs. **0.0** | 5 x 8  95.4 vs. 91.0 | 7 x 6  96.1 vs. 60.6 |
| PR (95CI) | 1.03 (0.74, 1.45) | 0.71 (0.38, 1.35) | 1.02 (0.66, 1.59) | 0.77 (0.39, 1.55) | 0.96 (0.57, 1.61) | 1.12 (0.82, 1.52) | 1.19 (0.76, 1.86) | 1.02 (0.65, 1.62) |
| 1.13 (0.63, 2.01) | 1.31 (1.03, 1.67) | 1.09 (0.77, 1.55) | 1.37 (1.13, 1.67) | 1.31 (1.12, 1.54) | 0.92 (0.68, 1.25) | 0.97 (0.65, 1.44) | 1.19 (0.95, 1.49) |
| Health services (n=4)  I2 = 87.8%  PR = 1.76  95CI = 1.33 – 2.35 | n  I2 (%) | 2 x 2  76.7 x **0.0** | 1 x 3  **nc** x 58.0 | 2 x 2  75.3 x 93.7 | 4 x 0  - | 4 x 0  - | 4 x 0  - | 0 x 4  - | 3 x 1  89.8 x **nc** |
| PR (95CI) | 1.41 (1.05-1.90) | 1.22 (1.01-1.48) | 1.92 (1.45- 2.55) | - | - | - | - | 1.65 (1.16-2.34) |
| 2.20 (1.91-2.53) | 2.01 (1.67- 2.41) | 1.63 (0.92-2.88) | - | - | - | - | 2.18 (1.76-2.71) |
| Iniquities (n=7)  I2 = 38.5%  PR = 2.02  95CI = 1.87- 2.18 | n  I2 (%) | 7 x 0  - | 2 X 5  0.0 X 54.1 | 0 X 7  - | 6 X 1  47.3 X nc | 6 x 1  0.0 x nc | 3 x 4  0.0 x 66.5 | 7 x 0  - | 6 x 1  0.0 x nc |
| PR (95CI) | - | 1.97 (1.86-2.09) | - | 2.01 (1.84-2.19) | 2.01 (1.91-2.12) | 1.98 (1.86-2.12) | - | 2.01 (1.91-2.12) |
| - | 2.03 (1.72-2.39) | - | 2.15 (1.62-2.86) | 0.96 (0.56-1.66) | 1.98 (1.66-2.36) | - | 0.96 (0.56-1.66) |
| Populations (n=13)  I2 = 91.4%  PR = 1.42  95CI = 1.23-1.64 | n  I2 (%) | 11 x 2  92.7 x 42.0 | 8 x 5  94.8 x **33.8** | 8 x 5  87.5 x 90.9 | 9 x 4  92.6 x 89.3 | 9 x 4  86.9 x 96.1 | 13 x 0  - | 9 x 4  92.1 x 69.2 | 12 x 1  92.0 x nc |
| PR (95CI) | 1.40 (1.10-1.80) | 1.40 (1.15-1.70) | 1.31 (1.11-1.54) | 1.34 (1.11-1.67) | 1.47 (1.28-1.70) | - | 1.34 (1.12-1.60) | 1.44 (1.24-1.67) |
| 1.43 (1.22-1.68) | 1.52 (1.33-1.73) | 1.63 (1.32-2.02) | 1.58 (1.28-1.94) | 1.31 (0.88-1.94) | - | 1.68 (1.43-1.98) | * 1. 0.81-1.68) |

**SupplementalTable 3 -**  Effect of omitting individual studies on the heterogeneity of the results obtained by reanalysis of the remaining studies

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Daycare Centers** | **I2 = 92.8%** | **Health Services** | **I2 = 87.8%** | **Iniquities** | **I2 = 38.5%** | **Populations** | **I2 = 91.4%** |
| **Studies** |  | **Studies** |  | **Studies** |  | **Studies** |  |
| Camillo et al., 2008 | 93.2 | Bortolini and Vitolo, 2012 | 87.5 | Barreto et al., 2014 | 35.2 | Arruda et al., 2016 | 92.0 |
| Costa et al., 2011 | 93.3 | Engstrom et al., 2008 | 89.8 | Campos et al., 2016 | 47.3 | Cardoso et al., 2012 | 90.6 |
| Coutinho et al., 2013 | 93.3 | Garcia et al., 2011 | 91.7 | **Ferreira and Torres, 2015** | **0.0** | Fujimori et al., 2008 | 92.1 |
| Hadler et al., 2008 | 92.0 | Magalhães et al., 2018 | 58.0 | Ferreira et al., 2011 | 48.8 | Gondim et al., 2012 | 92.1 |
| Lander et al., 2014 | 91.0 |  |  | Ferreira et al., 2017 | 48.2 | Granado et al., 2013 | 92.1 |
| Landim et al., 2016 | 93.2 |  |  | Leite et al., 2013 | 45.2 | Leal et al., 2011 | 92.0 |
| Matos et al., 2015 | 93.4 |  |  | Mondini et al., 2007 | 47.3 | Muniz et al., 2007 | 92.1 |
| Novaes et al., 2017 | 88.8 |  |  |  |  | Netto et al., 2011 | 92.0 |
| Oliveira et al., 2014 | 93.4 |  |  |  |  | Oliveira et al., 2011 | 90.1 |
| Pedraza and Sales, 2014 | 93.4 |  |  |  |  | Saraiva et al., 2014 | 87.7 |
| Rocha et al., 2012 | 93.4 |  |  |  |  | Silla et al., 2013 | 89.7 |
| Vieira et al., 2007 | 92.4 |  |  |  |  | Vieira et al., 2018 | 91.5 |
| Zuffo et al., 2016 | 93.4 |  |  |  |  | Zanin et al., 2015 | 92.1 |