**Supplementary Table S2: Quality appraisal of selected studies by GRADE**

| **Num** | **Included studies** | **Type of design** | **Risk of bias** | **Inconsistency** | **Indirectness** | **Imprecision** | **Publication bias** | **Strength** | **Plausible confounders** | **Dose response** | **Quality of evidence** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  | **First author** | **Agreement**  **by two authors** | **Reasons** |
| 1 | [Assefa N et al 2012(9)](file:///C:\Users\Christian\Documents\PhD\Thesis\Chapter%204%20SYSTEMATIC%20REVIEW\GRADE\QoE%20130518.xlsx#RANGE!_ENREF_9) | Case control study | Serious | Consistent. Same positive direction and positive magnitude for the estimate of the association of Mat. Education, WI and Low birth weight. | Indirect.  Conclusion did not proceed from sample size to population (pregnant women) on the SES and LBW. | Precise.  Sample size of 956 and CI of 95% were used in the study to appreciate the estimation of effect of outcomes. | Unclear | Strong.  Magnitude (AOR=2.1, p=0.01). | Absent. Confounders have been searched and adjusted for both exposure that we were investigating in the study. | Present.  The magnitude of AOR increases with increasing of Wealth index in the direction to poor category. | Very low | Moderate | Not bias of publication, Precise (the sample size is sufficient), strength of evidence upgrades with aOR (+1 point). |
| 2 | [Engebretsen MS et al., 2008(10)](file:///C:\Users\Christian\Documents\PhD\Thesis\Chapter%204%20SYSTEMATIC%20REVIEW\GRADE\QoE%20130518.xlsx#RANGE!_ENREF_10) | Cross sectional Survey | Unclear | Consistent. There is same negative direction of effect size for all household wealth index on Z- score mean of LAZ and WAZ. | Direct.  Data come from Uganda Demographic Survey??? Population and outcomes broadly generalizable. | Precise.  Large sample (723) to increase the precision. | Suspected. Marital status and twin variables are not analyzed or reported in the final model. | Weak.  Effect size less than 1 for adjusted effect size estimates. | Present. Having sibling may modify the effect of the association between wealth and LAZ adjusted by child gender and age. | Present. Larger effect size for mean of LAZ and WAZ with great level of poverty. | High | High | A Relative lower risk of bias increases the quality. |
| 3 | [Ickes SB et al., 2015(11)](file:///C:\Users\Christian\Documents\PhD\Thesis\Chapter%204%20SYSTEMATIC%20REVIEW\GRADE\QoE%20130518.xlsx#RANGE!_ENREF_11) | Cross sectional | Serious | Inconsistent. Lack of agreement for the socioeconomic and demographic factors associated to undernutrition forms. | Direct.  The inference was done in the study (participants and outcomes). | Precise.  Broad sample size (1897) and small CI of 95% . | Unclear | Weak.  At least one effect size is inferior to 2 and the other ones are no significant. | Absent.  No confounders. Confounders haven't been searched. | Undetected. The magnitude of the OR cannot be analyzed when variables are exclusively binary. | Very Low | Moderate | Consistent (consistent for wasting and underweight), not bias of publication. |
| 4 | [Mamabolo R et al., 2004(12)](file:///C:\Users\Christian\Documents\PhD\Thesis\Chapter%204%20SYSTEMATIC%20REVIEW\GRADE\QoE%20130518.xlsx#RANGE!_ENREF_12) |  | unclear | Inconsistent. Lack of agreement: various directions for the effect size estimates. | Direct.  Population broadly generalizable. | Not precise.  Narrow sample size (219) decreases the precision. | Undected. All outcomes were analyzed and reported. | Weak.  Various effect size: around 3 for occupation with wasting, ≤ 1 for other exposures (education and marital status). | Present. Confounders factors may be present and could reduce the effects size estimates for stunting, wasting and undernutrition (No adjustment). | Present. Paradoxal outcomes that poor SES (education, occupation) and demographic (being single) protect against stunting, wasting and underweight. Except? Wasting which is predicted by No working for the mother. | Very low | Low | Inconsistent effect size for WAZ (no agreement on WAZ). Total score wrongly calculated: |
| 5 | [Medhin G et al., 2010(20)](file:///C:\Users\Christian\Documents\PhD\Thesis\Chapter%204%20SYSTEMATIC%20REVIEW\GRADE\QoE%20130518.xlsx#RANGE!_ENREF_20) | Cohort study | Serious | Inconsistent. Lack of agreement. Poverty index has two directions in the same study depending on crude and adjusted effect size estimate. | Direct.  Data come from Butajiri DSS. Population and outcomes broadly generalizable. | Precise.  Large sample (1065) to increase the precision. | Undected. All outcomes were analyzed and reported. | Weak.  Effect size (OR) around 1 for adjusted effect size estimates. | Present. Confounders factors may be present and could reduce the effects size estimates for poverty on underweight and/or stunting. | Undecteted. There is no enough levels of exposure (SES) and any judgement could be made on the effects on the outcomes. | Low | Moderate | Inconsistent (lack of agreement on the effect of poverty index on WAZ and LAZ) =-1 |
| 6 | [Muhihi, S et al. 2016(14)](file:///C:\Users\Christian\Documents\PhD\Thesis\Chapter%204%20SYSTEMATIC%20REVIEW\GRADE\QoE%20130518.xlsx#RANGE!_ENREF_14) | RCT | No serious | Inconsistent. Maternal education and household wealth index have no dose response, sparse directions on the effect of outcomes (either for SGA or PTB as well). | Direct. The wide sample size admitted us to consider that the inference from participants to population is easier (One way). | Precise. The sample size is broad and CI of 95%. |  | Weak. The magnitude of associations was less than 2 and sometimes not significant. | Absent. They were minimized by adjustment by covariates on the estimates effect of PTB and SGA. | Undetected. Lack of agreement for dose response for the association of Maternal education and wealth index with SGA, PTB in rural and urban area. | High | High |  |
| 7 | [Ndirangu J et al., 2012(15)](file:///C:\Users\Christian\Documents\PhD\Thesis\Chapter%204%20SYSTEMATIC%20REVIEW\GRADE\QoE%20130518.xlsx#RANGE!_ENREF_15) | Cohort study | Serious | Consistency. Positive direction and positive magnitude for Relative risk for maternal education in association with SGA/PTB. Both were not significant. | Directness.  The inference was done according SES and adverse birth outcomes (PTB, SGA and LBW). | Precision.  Broad sample size of 2368 and small CI of 95% were used in the study to appreciate the estimation of the effect of outcomes. | Unclear | Weak.  Not significant (Small adjusted RR around 1 and not significant). | Present.  No confounders. Confounders haven't been searched for Maternal education -SGA/PTB. | Present.  Dose response. The magnitude of the RR for the estimate effect increases with 3 levels of maternal education (No, Primary, Secondary and tertiary. | Moderate | Moderate |  |
| 8 | Ukwani et al., 2003 | Cross sectional study | Serious | Consistent.  Protective role of HWI on infant nutritional status | Direct. Conclusion proceed from sample size to population (worker mothers) in the effect of mother’s work on infant nutritional status. | Imprecise. Sample size of 1338 with lack of the CI in the study. | Unclear | Weak. Magnitude (aOR=0.57, p≤0.01). | Absent. Confounders have been searched and adjusted for few factors in the study. | Absent. The magnitude of AOR was not modified with infant nutritional changes. | Very low | High | Not bias of publication, Precise (the sample size is enough), strength of evidence upgrades with aOR (+1 point). |
| 9 | [Wamani H et al., 2004(18)](file:///C:\Users\Christian\Documents\PhD\Thesis\Chapter%204%20SYSTEMATIC%20REVIEW\GRADE\QoE%20130518.xlsx#RANGE!_ENREF_18) | Cross sectional survey | No serious | Consistent. There is same positive direction of effect size for all SES variables. | Direct.  Data come from Uganda Demographic Survey??? Population and outcomes broadly generalizable. | Precise.  Large sample (720) to increase the precision. | Suspected. Marital status and twin variables are not analyzed or reported in the final model. | Strong.  Effect size more than 1 and significant. | Present. Maternal education was adjusted by child sex and age but not with all covariates. | Present.  There is an increment in maternal education is likely to have a positive influence on child growth. | High | High |  |
| 10 | [Wamani H et al., 2005(17)](file:///C:\Users\Christian\Documents\PhD\Thesis\Chapter%204%20SYSTEMATIC%20REVIEW\GRADE\QoE%20130518.xlsx#RANGE!_ENREF_17) | Cross sectional Survey | No serious | Consistent. There is same positive direction of effect size for Maternal education on stunting. | Direct.  Data come from Uganda Demographic Survey Population and outcomes broadly generalizable. | Precise. Large sample (698) to increase the precision. | Suspected. Marital status and twin variables are not analyzed or reported in the final model. | Strong.  Effect size more than 1 and significant for mothers who didn't completed primary school and above. | Absent. Maternal education was adjusted by child sex and age, having latrine, child not de-wormed, child not who had not received food in 24h and fever in 2 last week. | Present.  There is an increment in maternal education is likely to have a positive influence on child growth. | High | High |  |
| 11 | [Watson-Jones D et al., 2007(19)](file:///C:\Users\Christian\Documents\PhD\Thesis\Chapter%204%20SYSTEMATIC%20REVIEW\GRADE\QoE%20130518.xlsx#RANGE!_ENREF_19) | Cohort study | Serious | Consistent. Positive direction and positive magnitude for the estimate effect of the association of Maternal occupation with Preterm birth and Low birth weight. | Indirect.  Two problems for directness:1) no inference from participants to population, 2) the Benzathine injection intervention was different than routines one. | Precise.  Sample size of 1536 and small CI of 95% were used in the study to appreciate the estimation of the effect of outcomes. | Unclear | Weak.  (Small adjusted odds ratio less than 1 for all the estimate of effect). | Present. Plausible confounders. Confounders have been searched and adjusted for both exposure that we were investigating in the study. | Present. The magnitude of the Adjusted Odds ratio for the estimate effect increases with the level of kind of occupation (skilled occupation, manual occupation). | Very low | Moderate | Not publication bias, Indirect (-1), a OR around 0.2 (the study design was to scale the result to all tested). pregnant population for syphilis) and effect size (≥0.2). |
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