**S2 Table. Association of women’s empowerment and early learning and nutrition outcomes**

**Table A** Associations between quintile categories s of women’s total empowerment and empowerment dimensions and early learning outcomesa

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| --- | --- | --- | --- |
|   | **Number of learning resources** **(0-4)****(N=21,276)****MD (95% CI)** | **Number of maternal stimulation activities (0-6)****(N=20,745)****MD (95% CI)** | **≥4 maternal stimulation activities****(N=20,745)****RR (95% CI)** |
|  | **Unadjusted** | **Adjusted** | **Unadjusted** | **Adjusted** | **Unadjusted** | **Adjusted** |
| *Total empowerment*  |  |  |  |  |  |  |
| Empowerment Q1 (lowest) | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| Empowerment Q2 | 0.08 (0.02, 0.13) | 0.03 (-0.03, 0.08) | 0.07 (-0.03, 0.16) | 0.07 (-0.02, 0.16) | 0.99 (0.86, 1.15) | 0.98 (0.85, 1.12) |
| Empowerment Q3 | 0.09 (0.02, 0.15) | 0.02 (-0.03, 0.08) | 0.08 (-0.02, 0.18) | 0.04 (-0.05, 0.14) | 0.95 (0.82, 1.11) | 0.90 (0.78, 1.05) |
| Empowerment Q4 | 0.14 (0.08, 0.20) | 0.04 (-0.01, 0.10) | 0.15 (0.05, 0.25) | 0.09 (0.00, 0.18) | 1.06 (0.91, 1.23) | 0.99 (0.86, 1.14) |
| Empowerment Q5 (highest) | 0.26 (0.20, 0.33) | 0.07 (0.01, 0.13) | 0.28 (0.18, 0.39) | 0.16 (0.06, 0.25) | 1.24 (1.06, 1.44) | 1.06 (0.91, 1.22) |
| *Empowerment dimensions* |  |  |  |  |  |  |
| Resources Q1 (lowest) | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| Resources Q2 | 0.00 (-0.06, 0.07) | 0.03 (-0.03, 0.09) | -0.11 (-0.21, -0.01) | -0.10 (-0.20, 0.00) | 0.81 (0.70, 0.95) | 0.91 (0.78, 1.05) |
| Resources Q3 | 0.02 (-0.06, 0.09) | 0.03 (-0.04, 0.10) | -0.27 (-0.38, -0.17) | -0.20 (-0.30, -0.10) | 0.69 (0.59, 0.82) | 0.78 (0.67, 0.91) |
| Resources Q4 | 0.12 (0.05, 0.19) | 0.08 (0.02, 0.14) | -0.06 (-0.17, 0.05) | -0.08 (-0.19, 0.03) | 0.93 (0.80, 1.10) | 0.96 (0.83, 1.10) |
| Resources Q5 (highest) | 0.18 (0.10, 0.26) | 0.07 (0.00, 0.15) | 0.07 (-0.05, 0.19) | 0.02 (-0.09, 0.13) | 1.02 (0.86, 1.20) | 1.03 (0.88, 1.21) |
| Decision-making Q1 (lowest) | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| Decision-making Q2 | 0.14 (0.07, 0.22) | 0.11 (0.03, 0.18) | 0.40 (0.27, 0.52) | 0.34 (0.22, 0.46) | 1.46 (1.21, 1.75) | 1.32 (1.10, 1.57) |
| Decision-making Q3 | 0.16 (0.09, 0.24) | 0.11 (0.04, 0.18) | 0.24 (0.13, 0.35) | 0.18 (0.08, 0.29) | 1.20 (1.00, 1.45) | 1.09 (0.92, 1.29) |
| Decision-making Q4 | 0.10 (0.01, 0.18) | 0.07 (0.00, 0.15) | 0.25 (0.13, 0.37) | 0.23 (0.12, 0.34) | 1.32 (1.09, 1.60) | 1.22 (1.02, 1.45) |
| Decision-making Q5 (highest) | 0.10 (0.01, 0.19) | 0.08 (0.00, 0.16) | 0.36 (0.22, 0.50) | 0.33 (0.20, 0.47) | 1.55 (1.25, 1.93) | 1.40 (1.14, 1.74) |
| Attitudes towards wife beating Q1 (lowest) | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. |
| Attitudes towards wife beating Q2 | 0.02 (-0.04, 0.08) | -0.06 (-0.11, 0.00) | -0.14 (-0.26, -0.03) | -0.22 (-0.34, -0.11) | 0.73 (0.61, 0.88) | 0.67 (0.56, 0.79) |
| Attitudes towards wife beating Q3 | 0.10 (0.04, 0.17) | 0.02 (-0.04, 0.08) | -0.03 (-0.15, 0.08) | -0.12 (-0.23, -0.01) | 0.91 (0.76, 1.07) | 0.82 (0.70, 0.96) |
| Attitudes towards wife beating Q4 | 0.09 (0.02, 0.17) | -0.05 (-0.12, 0.02) | 0.00 (-0.12, 0.13) | -0.12 (-0.24, 0.00) | 0.92 (0.77, 1.10) | 0.78 (0.65, 0.93) |
| Attitudes towards wife beating Q5 (highest) | 0.11 (0.03, 0.19) | -0.04 (-0.11, 0.03) | 0.02 (-0.12, 0.16) | -0.12 (-0.25, 0.01) | 0.87 (0.72, 1.06) | 0.74 (0.62, 0.89) |

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|   | **Number of paternal stimulation activities (0-6)****(N=20,745)****MD (95% CI)** | **≥4 paternal stimulation activities****(N=20,745)****RR (95% CI)** |
|  | **Unadjusted** | **Adjusted** | **Unadjusted** | **Adjusted** |
| *Total empowerment*  |  |  |  |  |
| Empowerment Q1 (lowest) | Ref. | Ref. | Ref. | Ref. |
| Empowerment Q2 | 0.07 (0.02, 0.13) | 0.08 (0.03, 0.13) | 1.24 (0.89, 1.74) | 1.20 (0.87, 1.67) |
| Empowerment Q3 | 0.08 (0.03, 0.14) | 0.09 (0.03, 0.14) | 1.18 (0.87, 1.60) | 1.14 (0.84, 1.55) |
| Empowerment Q4 | 0.12 (0.06, 0.17) | 0.11 (0.05, 0.16) | 1.28 (0.94, 1.75) | 1.22 (0.90, 1.65) |
| Empowerment Q5 (highest) | 0.26 (0.20, 0.32) | 0.23 (0.17, 0.29) | 2.06 (1.56, 2.72) | 1.79 (1.34, 2.38) |
| *Empowerment dimensions* |  |  |  |  |
| Resources Q1 (lowest) | Ref. | Ref. | Ref. | Ref. |
| Resources Q2 | 0.09 (0.03, 0.15) | 0.09 (0.04, 0.15) | 1.18 (0.81, 1.72) | 1.35 (0.94, 1.94) |
| Resources Q3 | 0.05 (-0.01, 0.12) | 0.08 (0.02, 0.14) | 1.18 (0.84, 1.67) | 1.29 (0.95, 1.75) |
| Resources Q4 | 0.09 (0.02, 0.16) | 0.09 (0.03, 0.16) | 1.25 (0.86, 1.81) | 1.28 (0.92, 1.79) |
| Resources Q5 (highest) | 0.18 (0.11, 0.26) | 0.17 (0.10, 0.24) | 1.42 (0.99, 2.04) | 1.45 (1.04, 2.01) |
| Decision-making Q1 (lowest) | Ref. | Ref. | Ref. | Ref. |
| Decision-making Q2 | 0.06 (0.01, 0.12) | 0.04 (-0.01, 0.09) | 1.05 (0.74, 1.48) | 0.92 (0.66, 1.29) |
| Decision-making Q3 | -0.02 (-0.08, 0.05) | -0.02 (-0.08, 0.04) | 0.78 (0.52, 1.16) | 0.73 (0.51, 1.06) |
| Decision-making Q4 | 0.05 (-0.03, 0.12) | 0.05 (-0.02, 0.12) | 1.19 (0.79, 1.78) | 1.14 (0.79, 1.65) |
| Decision-making Q5 (highest) | 0.02 (-0.06, 0.10) | 0.04 (-0.04, 0.11) | 1.28 (0.85, 1.92) | 1.29 (0.88, 1.91) |
| Attitudes towards wife beating Q1 (lowest) | Ref. | Ref. | Ref. | Ref. |
| Attitudes towards wife beating Q2 | 0.11 (0.05, 0.17) | 0.05 (0.00, 0.11) | 1.32 (0.95, 1.84) | 1.09 (0.80, 1.49) |
| Attitudes towards wife beating Q3 | 0.10 (0.05, 0.16) | 0.05 (0.00, 0.11) | 1.22 (0.88, 1.69) | 1.03 (0.76, 1.41) |
| Attitudes towards wife beating Q4 | 0.16 (0.10, 0.22) | 0.09 (0.03, 0.15) | 1.62 (1.18, 2.22) | 1.26 (0.93, 1.72) |
| Attitudes towards wife beating Q5 (highest) | 0.22 (0.15, 0.29) | 0.13 (0.07, 0.20) | 1.57 (1.10, 2.25) | 1.14 (0.81, 1.62) |

a All estimates accounted for clustering and representativeness using the country-specific cluster variables and sampling weights. Adjusted estimates controlled for household wealth, rurality, and size; household head’s age and sex; maternal education, age, and age at first co-habitation; child age and sex; country and survey year. Abbreviations used: Q, quintile category; Ref, reference; MD, mean difference; RR, relative risk.

**Table B** Associations between women’s total empowerment and empowerment dimensions and early learning outcomesa

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Number of learning resources** **(0-4)****(N=21,276)****MD (95% CI)** | **Number of maternal stimulation activities (0-6)****(N=20,745)****MD (95% CI)** | **≥4 maternal stimulation activities****(N=20,745)****RR (95% CI)** |
|  | **Unadjusted** | **Adjusted** | **Unadjusted** | **Adjusted** | **Unadjusted** | **Adjusted** |
| Total empowerment  | 0.05 (0.05, 0.06) | 0.01 (0.00, 0.02) | 0.05 (0.04, 0.06) | 0.02 (0.00, 0.03) | 1.07 (1.05, 1.09) | 1.01 (0.98, 1.03) |
| *Dimensions* |  |  |  |  |  |  |
| Resources | 0.05 (0.03, 0.07) | 0.02 (0.01, 0.04) | 0.00 (-0.03, 0.03) | 0.01 (-0.02, 0.04) | 1.06 (1.01, 1.10) | 1.01 (0.97, 1.06) |
| Decision-making  | 0.06 (0.03, 0.10) | 0.03 (-0.01, 0.06) | 0.37 (0.31, 0.43) | 0.20 (0.13, 0.27) | 1.35 (1.25, 1.46) | 1.25 (1.13, 1.38) |
| Attitudes towards wife beating | 0.06 (0.04, 0.07) | 0.00 (-0.02, 0.01) | 0.00 (-0.01, 0.02) | -0.02 (-0.04, 0.00) | 1.01 (0.98, 1.03) | 0.94 (0.91, 0.98) |

|  |  |  |
| --- | --- | --- |
|  | **Number of paternal stimulation activities (0-6)****(N=20,745)****MD (95% CI)** | **≥4 paternal stimulation activities** **(N=20,745)****RR (95% CI)** |
|  | **Unadjusted** | **Adjusted** | **Unadjusted** | **Adjusted** |
| Total empowerment  | 0.05 (0.05, 0.06) | 0.03 (0.02, 0.04) | 1.18 (1.15, 1.22) | 1.11 (1.07, 1.16) |
| *Dimensions* |  |  |  |  |
| Resources | 0.05 (0.03, 0.06) | 0.03 (0.02, 0.05) | 1.19 (1.10, 1.29) | 1.07 (0.98, 1.16) |
| Decision-making  | 0.13 (0.09, 0.16) | 0.08 (0.04, 0.12) | 1.40 (1.21, 1.61) | 1.52 (1.22, 1.91) |
| Attitudes towards wife beating | 0.04 (0.03, 0.05) | 0.02 (0.01, 0.03) | 1.12 (1.07, 1.18) | 1.04 (0.97, 1.12) |

a All estimates accounted for clustering and representativeness using the country-specific cluster variables and sampling weights. Adjusted estimates controlled for household wealth, rurality, and size; household head’s age and sex; maternal education, age, and age at first co-habitation; child age and sex; country and survey year. Abbreviations used: MD, mean difference; RR, relative risk.

**Table C** Associations between quintile categories of women’s total empowerment and empowerment dimensions and child dieta

|  |  |  |
| --- | --- | --- |
|   | **Dietary diversity score (DDS, 0-7)****(N=11,279)****MD (95% CI)** | **Minimum dietary diversity (DDS≥4)****(N=11,279)****RR (95% CI)** |
|  | **Unadjusted** | **Adjusted** | **Unadjusted** | **Adjusted** |
| *Total empowerment*  |  |  |  |  |
| Empowerment Q1 (lowest) | Ref. | Ref. | Ref. | Ref. |
| Empowerment Q2 | 0.06 (-0.06, 0.18) | 0.06 (-0.06, 0.17) | 1.09 (0.91, 1.31) | 1.07 (0.90, 1.28) |
| Empowerment Q3 | 0.09 (-0.03, 0.21) | 0.07 (-0.05, 0.18) | 1.07 (0.90, 1.27) | 1.02 (0.86, 1.20) |
| Empowerment Q4 | 0.12 (0.00, 0.24) | 0.08 (-0.03, 0.20) | 1.08 (0.90, 1.30) | 1.01 (0.85, 1.20) |
| Empowerment Q5 (highest) | 0.25 (0.13, 0.37) | 0.17 (0.06, 0.29) | 1.29 (1.09, 1.53) | 1.07 (0.91, 1.27) |
| *Empowerment dimensions* |  |  |  |  |
| Resources Q1 (lowest) | Ref. | Ref. | Ref. | Ref. |
| Resources Q2 | 0.00 (-0.13, 0.13) | 0.02 (-0.11, 0.14) | 0.90 (0.75, 1.07) | 0.97 (0.81, 1.16) |
| Resources Q3 | -0.02 (-0.16, 0.12) | 0.02 (-0.11, 0.15) | 0.85 (0.69, 1.05) | 0.89 (0.74, 1.09) |
| Resources Q4 | 0.09 (-0.05, 0.22) | 0.08 (-0.05, 0.22) | 1.04 (0.85, 1.27) | 1.01 (0.84, 1.22) |
| Resources Q5 (highest) | 0.27 (0.10, 0.44) | 0.27 (0.11, 0.44) | 1.25 (0.99, 1.58) | 1.20 (0.96, 1.49) |
| Decision-making Q1 (lowest) | Ref. | Ref. | Ref. | Ref. |
| Decision-making Q2 | 0.06 (-0.07, 0.19) | 0.08 (-0.04, 0.21) | 1.09 (0.90, 1.33) | 1.12 (0.93, 1.36) |
| Decision-making Q3 | 0.14 (0.00, 0.29) | 0.16 (0.03, 0.29) | 1.07 (0.87, 1.32) | 1.09 (0.89, 1.34) |
| Decision-making Q4 | 0.08 (-0.08, 0.24) | 0.10 (-0.05, 0.26) | 1.02 (0.81, 1.28) | 1.03 (0.82, 1.29) |
| Decision-making Q5 (highest) | -0.09 (-0.26, 0.08) | -0.04 (-0.20, 0.12) | 0.81 (0.63, 1.04) | 0.82 (0.64, 1.05) |
| Attitudes towards wife beating Q1 (lowest) | Ref. | Ref. | Ref. | Ref. |
| Attitudes towards wife beating Q2 | 0.02 (-0.10, 0.14) | -0.08 (-0.20, 0.03) | 1.07 (0.89, 1.30) | 0.93 (0.78, 1.12) |
| Attitudes towards wife beating Q3 | 0.02 (-0.10, 0.14) | -0.09 (-0.20, 0.03) | 1.17 (0.98, 1.40) | 1.02 (0.86, 1.21) |
| Attitudes towards wife beating Q4 | 0.05 (-0.06, 0.17) | -0.09 (-0.20, 0.02) | 1.14 (0.95, 1.37) | 0.91 (0.76, 1.09) |
| Attitudes towards wife beating Q5 (highest) | 0.26 (0.10, 0.41) | 0.05 (-0.09, 0.19) | 1.55 (1.28, 1.89) | 1.22 (1.00, 1.48) |

a All estimates accounted for clustering and representativeness using the country-specific cluster variables and sampling weights. Adjusted estimates controlled for household wealth, rurality, and size; household head’s age and sex; maternal education, age, and age at first co-habitation; child age and sex; country and survey year. Abbreviations used: Q, quintile category; MD, mean difference; RR, relative risk; Ref, reference.

**Table D** Associations between women’s total empowerment and empowerment dimensions and child dieta

|  |  |  |
| --- | --- | --- |
|  | **Dietary diversity score (DDS, 0-7)****(N=11,279)****MD (95% CI)** | **Minimum dietary diversity (DDS≥4)****(N=11,279)****RR (95% CI)** |
|  | **Unadjusted** | **Adjusted** | **Unadjusted** | **Adjusted** |
| Total empowerment  | 0.09 (0.08, 0.10) | 0.03 (0.01, 0.04) | 1.10 (1.08, 1.12) | 1.02 (0.99, 1.04) |
| *Dimensions* |  |  |  |  |
| Resources | 0.16 (0.12, 0.20) | 0.08 (0.05, 0.12) | 1.16 (1.09, 1.22) | 1.05 (0.99, 1.11) |
| Decision-making  | 0.05 (-0.02, 0.11) | 0.01 (-0.06, 0.09) | 0.90 (0.82, 0.99) | 0.94 (0.85, 1.05) |
| Attitudes towards wife beating | 0.06 (0.03, 0.08) | 0.00 (-0.02, 0.02) | 1.12 (1.08, 1.16) | 1.02 (0.98, 1.05) |

a All estimates accounted for clustering and representativeness using the country-specific cluster variables and sampling weights. Adjusted estimates controlled for household wealth, rurality, and size; household head’s age and sex; maternal education, age, and age at first co-habitation; child age and sex; country and survey year. Abbreviations used: MD, mean difference; RR, relative risk.