**What is the role of the early social environment on Epstein - Barr virus infection? A prospective observational design using the Millennium Cohort Study**

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*Table S1. Univariate and multivariate Logistic regression models for EBV ≥ 4.74 versus <4.74 for IgG>2, adjusted for household socio-economic position (Model 1), Model 1 plus area environment (Model 2), Model 2 plus home environment (overcrowding, temperature in the baby room) (Model 3), Model 3 plus housing tenure (Model 4).*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Characteristic** | **Univariate OR (95% CI)** | **Model 1‡**  **(95% CI)** | **Model 2‡**  **(95% CI)** | **Model 3‡**  **(95% CI)** | **Model 4‡**  **(95% CI)** |
| **Age** | 1 (1,1)\*\*\* | 1 (1,1)\*\* | 1 (1,1) ° | 1 (1,1) ° | 1 (1,1) ° |
| **Sexe** |  |  |  |  |  |
| Boy | 1 | 1 | 1 | 1 | 1 |
| Girl | 1.07 (0.97,1.17) † | 1.11 (0.98,1.26) † | 1.11 (0.98,1.25) † | 1.11 (0.98,1.25) † | 1.11 (0.98,1.25) † |
| **Income** |  |  |  |  |  |
| >0.75 and ≤1 | 1 | 1 | 1 | 1 | 1 |
| >0.5 and ≤0.75 | 1.09 (0.96,1.24)† | 0.84 (0.71,1.01) \* | 0.84 (0.71,1.01) \* | 0.83 (0.7,0.99)\* | 0.83 (0.69,0.99)\* |
| >0.25 and ≤0.5 | 1.38 (1.22,1.57)\*\*\* | 0.99 (0.82,1.19) | 0.98 (0.82,1.18) | 0.96 (0.8,1.16) | 0.93 (0.76,1.13) |
| ≤0.25 | 1.44 (1.22,1.70)\*\*\* | 0.87 (0.68,1.13) | 0.87 (0.67,1.12) | 0.84 (0.65,1.09) † | 0.81 (0.61,1.06) † |
| **Mother education** |  |  |  |  |  |
| Superior | 1 | 1 | 1 | 1 | 1 |
| A/As/S level | 1.12 (0.93,1.34) | 1.1 (0.86,1.41) | 1.11 (0.87,1.41) | 1.11 (0.87,1.41) | 1.1 (0.86,1.41) |
| GCSE | 1.11 (0.98,1.25)† | 1.14 (0.96,1.37) † | 1.14 (0.95,1.36) † | 1.13 (0.95,1.35) † | 1.12 (0.94,1.34) |
| No qualification | 1.47 (1.28,1.69)\*\*\* | 1.28 (1.03,1.59)\* | 1.26 (1.02,1.57)\* | 1.24 (1,1.55) ° | 1.23 (0.98,1.54) ° |
| **Parent social class** |  |  |  |  |  |
| I | 1 | 1 | 1 | 1 | 1 |
| II | 1.20 (1.02,1.40)\* | 1.18 (0.95,1.48) † | 1.18 (0.94,1.48) † | 1.17 (0.94,1.46) † | 1.16 (0.93,1.45) † |
| III | 1.32 (1.08,1.59)\*\* | 1.19 (0.93,1.53) † | 1.19 (0.93,1.53) † | 1.17 (0.91,1.5) | 1.15 (0.89,1.49) |
| IV | 1.25 (1.05,1.48)\* | 1.04 (0.82,1.32) | 1.04 (0.82,1.33) | 1.02 (0.8,1.31) | 1.01 (0.79,1.3) |
| V | 1.42 (1.25,1.60)\*\*\* | 1.23 (0.99,1.53) ° | 1.22 (0.98,1.52) ° | 1.2 (0.96,1.5) † | 1.16 (0.92,1.45) |
| Never worked - absent - missing | 1.45 (1.24,1.68)\*\*\* | 1.23 (0.93,1.64) † | 1.22 (0.92,1.62) † | 1.2 (0.9,1.59) | 1.15 (0.87,1.54) |
| **Urban rural area** |  |  |  |  |  |
| Large Urban | 1 |  | 1 | 1 | 1 |
| Towns | 0.72 (0.62,0.84)\*\*\* |  | 0.88 (0.7,1.12) | 0.89 (0.7,1.12) | 0.89 (0.7,1.13) |
| Rural | 0.70 (0.59,0.83)\*\*\* |  | 0.88 (0.68,1.12) | 0.88 (0.68,1.13) | 0.88 (0.68,1.13) |
| **Number of room per person** |  |  |  |  |  |
| No overcrowding | 1 |  |  | 1 | 1 |
| Overcrowding | 1.36 (1.23,1.51)\*\*\* |  |  | 1.13 (0.97,1.3) † | 1.1 (0.95,1.27) |
| **Temperature in the baby room** |  |  |  |  |  |
| very warm/warm/neither warm nor cold | 1 |  |  |  | 1 |
| Very cold/cold | 1.17 (0.97,1.41)† |  |  | 1.03 (0.79,1.35) | 1.02 (0.78,1.33) |
| **Housing tenure** |  |  |  |  |  |
| Own | 1 |  |  |  | 1 |
| Rent privately | 1.23 (1.03,1.46)\* |  |  |  | 1 (0.76,1.33) |
| Social housing, Squatting | 1.45 (1.29,1.61)\*\*\* |  |  |  | 1.14 (0.92,1.41) |
| Other | 1.71 (1.42,2.06)\*\*\* |  |  |  | 1.2 (0.89,1.61) |

Table S2. Univariate Logistic regression models for EBV≥ cut-off versus EBV<cut-off with cut-off = 4.74, 5 and 4th quartile (Q4)

|  |  |  |  |
| --- | --- | --- | --- |
| **Characteristic** | **Univariate OR (95% CI)**  **Cut-off = 4.74** | **Univariate OR (95% CI)**  **Cut-off = 5** | **Univariate OR (95% CI)**  **Cut-off = 3.73 (Q4)** |
| **Age** | 1 (1,1) | 1 (1,1) | 1 (1,1) ° |
| **Sexe** |  |  |  |
| Boy | 1 | 1 | 1 |
| Girl | 1.07 (0.98,1.18) | 1.08 (0.99,1.17) | 1.08 (0.98,1.20) |
| **Income** |  |  |  |
| >0.75 and ≤1 | 1 | 1 | 1 |
| >0.5 and ≤0.75 | 1.02 (0.89,1.17) | 0.97 (0.86,1.09) | 1.03 (0.90,1.19) |
| >0.25 and ≤0.5 | 1.30 (1.13,1.51) | 1.25 (1.10,1.42) | 1.31 (1.13,1.52) |
| ≤0.25 | 1.26 (1.06,1.51) | 1.30 (1.09,1.56) | 1.27 (1.05,1.53) |
| **Mother education** |  |  |  |
| Superior | 1 | 1 | 1 |
| A/As/S level | 1.18 (0.97,1.44) | 1.07 (0.91,1.27) | 1.15 (0.93,1.42) |
| GCSE | 1.14 (0.98,1.32) | 1.04 (0.92,1.18) | 1.17 (1,10,0.36) |
| No qualification | 1.46 (1.22,1.74) | 1.31 (1.12,1.54) | 1.49 (1.25,1.77) |
| **Parent social class** |  |  |  |
| I | 1 | 1 | 1 |
| II | 1.19 (0.99,1.43) | 1.23 (1.06,1.42) | 1.18 (0.98,1.42) |
| III | 1.29 (1.03,1.61) | 1.18 (0.96,1.46) | 1.26 (1.00,1.59) |
| IV | 1.16 (0.96,1.40) | 1.14 (0.96,1.35) | 1.18 (0.98,1.42) |
| V | 1.38 (1.18,1.6) | 1.29 (1.14,1.46) | 1.37 (1.19,1.59) |
| Never worked - absent - missing | 1.39 (1.13,1.71) | 1.34 (1.14,1.59) | 1.39 (1.13,1.70) |
| **Urban rural area** |  |  |  |
| Large Urban | 1 | 1 | 1 |
| Towns | 0.78 (0.62,0.98) | 0.83 (0.69,1.01) | 0.81 (0.64,1.03) |
| Rural | 0.80 (0.65,0.99) | 0.83 (0.69,1.00) | 0.76 (0.61,0.95) |
| **Number of room per person** |  |  |  |
| No overcrowding | 1 | 1 | 1 |
| Overcrowding | 1.28 (1.13,1.45) | 1.24 (1.1,1.39) | 1.28 (1.12,1.46) |
| **Temperature in the baby room** |  |  |  |
| very warm/warm/neither warm nor cold | 1 | 1 | 1 |
| Very cold/cold | 1.06 (0.85,1.32) | 1.01 (0.84,1.22) | 1.04 (0.83,1.31) |
| **Housing tenure** |  |  |  |
| Own | 1 | 1 | 1 |
| Rent privately | 1.17 (0.95,1.43) | 1.14 (0.96,1.36) | 1.16 (0.94,1.43) |
| Social housing, Squatting | 1.39 (1.21,1.58) | 1.31 (1.16,1.47) | 1.37 (1.19,1.57) |
| Other | 1.53 (1.24,1.89) | 1.41 (1.18,1.70) | 1.58 (1.28,1.95) |

\*\*\*p≤.001, \*\*p≤.01, \*p≤.05, °p<.10 and †p<.20 ‡ adjusted for IgG and for sample weights and MCS complex survey design

Table S3. Univariate and multivariate Logistic regression models for EBV ≥ 4.74 versus <4.74, adjusted for area environment variables (Model 1), Model 1 plus home environment (overcrowding, temperature in the baby room) (Model 2), Model 2 plus housing tenure (Model 3), Model 3 plus household socio-economic position (Model 4).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Characteristic** | **Univariate OR**  **(95% CI)** | **Model 1‡**  **(95% CI)** | **Model 2‡**  **(95% CI)** | **Model 3‡**  **(95% CI)** | **Model 4‡**  **(95% CI)** |
| **Age** | 1 (1,1)\*\*\* | 1 (1,1)\*\* | 1 (1,1)\*\* | 1 (1,1)\* | 1 (1,1)\* |
| **Sexe** |  |  |  |  |  |
| Boy | 1 | 1 | 1 | 1 | 1 |
| Girl | 1.07 (0.97,1.17) † | 1.05 (0.95,1.17) | 1.05 (0.95,1.16) | 1.05 (0.95,1.16) | 1.06 (0.95,1.17) |
| **Urban rural area** |  |  |  |  |  |
| Large Urban | 1 | 1 | 1 | 1 | 1 |
| Towns | 0.72 (0.62,0.84)\*\*\* | 0.79 (0.62,0.99)\* | 0.79 (0.63,1.00)\* | 0.81 (0.64,1.02)° | 0.82 (0.65,1.03)° |
| Rural | 0.70 (0.59,0.83)\*\*\* | 0.81 (0.66,1.00)° | 0.82 (0.67,1.02)° | 0.83 (0.68,1.03)° | 0.84 (0.67,1.05)° |
| **Number of room per person** |  |  |  |  |  |
| No overcrowding | 1 |  | 1 | 1 | 1 |
| Overcrowding | 1.36 (1.23,1.51)\*\*\* |  | 1.25 (1.10,1.41) \*\*\* | 1.13 (0.98,1.29)° | 1.10 (0.96,1.27)† |
| **Temperature in the baby room** |  |  |  |  |  |
| very warm/warm/neither warm nor cold | 1 |  | 1 |  | 1 |
| Very cold/cold | 1.17 (0.97,1.41)† |  | 1.02 (0.82,1.28) | 0.97 (0.78,1.22) | 0.98 (0.78,1.24) |
| **Housing tenure** |  |  |  |  |  |
| Own | 1 |  |  | 1 | 1 |
| Rent privately | 1.23 (1.03,1.46)\* |  |  | 1.13 (0.91,1.39) | 1.05 (0.84,1.31) |
| Rent from local authority, Housing tenure Association, Squatting | 1.45 (1.29,1.61)\*\*\* |  |  | 1.29 (1.11,1.49)\*\*\* | 1.16 (0.98,1.38)° |
| Other | 1.71 (1.42,2.06)\*\*\* |  |  | 1.45 (1.18,1.78)\*\*\* | 1.35 (1.07,1.70)\* |
| **Income** |  |  |  |  |  |
| >0.75 and ≤1 | 1 |  |  |  | 1 |
| >0.5 and ≤0.75 | 1.09 (0.96,1.24)† |  |  |  | 0.92 (0.79,1.07) |
| >0.25 and ≤0.5 | 1.38 (1.22,1.57)\*\*\* |  |  |  | 1.02 (0.85,1.24) |
| ≤0.25 | 1.44 (1.22,1.70)\*\*\* |  |  |  | 0.91 (0.71,1.16) |
| **Mother education** |  |  |  |  |  |
| Superior | 1 |  |  |  | 1 |
| A/As/S level | 1.12 (0.93,1.34) |  |  |  | 1.13 (0.93,1.39) |
| GCSE | 1.11 (0.98,1.25)† |  |  |  | 1.02 (0.87,1.20) |
| No qualification | 1.47 (1.28,1.69)\*\*\* |  |  |  | 1.14 (0.92,1.40) |
| **Parent social class** |  |  |  |  |  |
| I | 1 |  |  |  | 1 |
| II | 1.20 (1.02,1.40)\* |  |  |  | 1.10 (0.90,1.34) |
| III | 1.32 (1.08,1.59)\*\* |  |  |  | 1.10 (0.87,1.40) |
| IV | 1.25 (1.05,1.48)\* |  |  |  | 1.06 (0.87,1.31) |
| V | 1.42 (1.25,1.60)\*\*\* |  |  |  | 1.15 (0.94,1.41) † |
| Never worked - absent - missing | 1.45 (1.24,1.68)\*\*\* |  |  |  | 1.14 (0.88,1.48) |

\*\*\*p≤.001, \*p≤.01, \*\*p≤.05, °p<.10 and †p<.20 ‡ adjusted for IgG and for sample weights and MCS complex survey design