| **Table S-1a. Characteristics of mothers of liveborn infants without a birth defects employed during the pre-pregnancy period by major occupational group, National Birth Defects Prevention Study, 1997–2011** |
| --- |
| **Occupational Group** | **Maternal age at conception** | **Maternal race/ethnicity** | **Nativity (born in U.S.)** | **Maternal education** | **Pre-pregnancy diabetes**  |
| *Mean* *(y)* | *SD* |  |  *n* | *%* |  |  *n* | *%* |   |  *n* | *%* |  | *n* | *%* |
| Management (n=491) | 31.6 | 4.7 | Non-Hispanic white Non-Hispanic blackHispanicOther | 411 28 3022 | 83.75.76.14.5 | NoYes | 38453 | 7.792.3 | <High school=High school>High school | 531455 | 1.06.392.7 | NoYes | 4901 | 99.80.2 |
| Business and Financial Operations (n=308) | 29.8 | 4.8 | Non-Hispanic white Non-Hispanic blackHispanicOther | 237282122 | 76.99.16.87.1 | NoYesMissing | 222851 | 7.292.8 | <High school=High school>High schoolMissing | 1202861 | 0.36.593.2 | NoYes | 3062 | 99.40.6 |
| Computer and Mathematical (n=117) | 30.6 | 4.7 | Non-Hispanic white Non-Hispanic blackHispanicOther | 758727 | 64.16.86.023.1 | NoYes | 3384 | 28.271.8 | <High school=High school>High school | 04113 | 0.03.496.6 | NoYes | 1170 | 100.00.0 |
| Architecture and Engineering (n=34) | 30.6 | 3.9 | Non-Hispanic white Non-Hispanic blackHispanicOther | 26134 | 76.52.98.811.8 | NoYes | 430 | 11.888.2 | <High school=High school>High school | 0232 | 0.05.994.1 | NoYes | 340 | 100.00.0 |
| Life, Physical, and Social Sciences (n=118) | 30.8 | 4.9 | Non-Hispanic white Non-Hispanic blackHispanicOther | 906814 | 76.35.16.811.9 | NoYes | 2296 | 18.681.4 | <High school=High school>High school | 02116 | 0.01.798.3 | NoYes | 1180 | 100.00.0 |
| Community and Social Service (n=180) | 30.5 | 4.7 | Non-Hispanic white Non-Hispanic blackHispanicOther | 13822191 | 76.712.210.60.6 | NoYes | 18162 | 10.090.0 | <High school=High school>High schoolMissing | 491661 | 2.25.092.7 | NoYes | 1791 | 99.40.6 |
| Legal (n=89) | 31.3 | 4.1 | Non-Hispanic white Non-Hispanic blackHispanicOther | 73646 | 82.06.74.56.7 | NoYes | 584 | 5.694.4 | <High school=High school>High school | 0782 | 0.07.992.1 | NoYes | 881 | 98.91.1 |
| Education, Training, and Library (n=710) | 29.6 | 4.7 | Non-Hispanic white Non-Hispanic blackHispanicOther | 541527641 | 76.27.310.75.8 | NoYes | 57653 | 8.092.0 | <High school=High school>High school | 537668 | 0.75.294.1 | NoYes | 7082 | 99.70.3 |
| Arts, Design, Entertainment, Sports, and Media (n=146) | 30.2 | 5.4 | Non-Hispanic white Non-Hispanic blackHispanicOther | 10651619 | 72.63.411.013.0 | NoYes | 21125 | 14.485.6 | <High school=High school>High school | 515126 | 3.410.386.3 | NoYes | 1442 | 98.61.4 |
| Healthcare Practitioners and Technical (n=637) | 29.9 | 4.7 | Non-Hispanic white Non-Hispanic blackHispanicOther | 498464251 | 78.27.26.68.0 | NoYes | 70567 | 11.089.0 | <High school=High school>High school | 217618 | 0.32.797.0 | NoYes | 6361 | 99.80.2 |
| Healthcare Support (n=339) | 26.0 | 5.1 | Non-Hispanic white Non-Hispanic blackHispanicOther | 197784123 | 58.123.012.16.8 | NoYes | 39300 | 11.588.5 | <High school=High school>High school | 23112204 | 6.833.060.2 | NoYesMissing | 33162 | 98.21.8 |
| Protective Service (n=64) | 27.7 | 5.4 | Non-Hispanic white Non-Hispanic blackHispanicOther | 3512107 | 54.718.815.610.9 | NoYes | 460 | 6.393.8 | <High school=High school>High school | 31645 | 4.725.070.3 | NoYes | 631 | 98.41.6 |
| Food Preparation and Serving Related (n=667) | 23.4 | 5.4 | Non-Hispanic white Non-Hispanic blackHispanicOther | 3777917140 | 56.511.825.66.0 | NoYes | 145522 | 21.778.3 | <High school=High school>High school | 148283236 | 22.242.435.4 | NoYes | 6643 | 99.60.4 |
| Building and Grounds Cleaning (n=197) | 25.9 | 6.1 | Non-Hispanic white Non-Hispanic blackHispanicOther | 6728939 | 34.014.247.24.6 | NoYes | 88109 | 44.755.3 | <High school=High school>High school | 658052 | 33.040.626.4 | NoYes | 1961 | 99.50.5 |
| Personal Care and Service (n=441) | 26.5 | 5.4 | Non-Hispanic white Non-Hispanic blackHispanicOther | 291488022 | 66.010.918.15.0 | NoYesMissing | 653751 | 14.885.2 | <High school=High school>High schoolMissing | 291272841 | 6.628.964.6 | NoYes | 4338 | 98.21.8 |
| Sales and Related (n=807) | 25.1 | 6.1 | Non-Hispanic white Non-Hispanic blackHispanicOther | 46211418744 | 57.214.123.25.5 | NoYesMissing | 1096962 | 13.586.5 | <High school=High school>High schoolMissing | 1072644342 | 13.332.853.9 | NoYesMissing | 79971 | 99.10.9 |
| Office and Administrative Support (n=1406) | 27.3 | 5.3 | Non-Hispanic white Non-Hispanic blackHispanicOther | 91518024368 | 65.112.817.34.8 | NoYesMissing | 14712572 | 10.589.5 | <High school=High school>High schoolMissing | 583869584 | 4.127.568.3 | NoYesMissing | 139574 | 99.50.5 |
| Farming, Fishing, and Forestry (n=84) | 26.4 | 6.1 | Non-Hispanic white Non-Hispanic blackHispanicOther | 122673 | 14.32.479.83.6 | NoYesMissing | 60231 | 72.327.7 | <High school=High school>High schoolMissing | 5218131 | 62.721.715.7 | NoYes | 840 | 100.00.0 |
| Construction and Extraction (n=20) | 26.5 | 6.1 | Non-Hispanic white Non-Hispanic blackHispanicOther | 10352 | 50.015.025.010.0 | NoYes | 614 | 30.070.0 | <High school=High school>High school | 767 | 35.030.035.0 | NoYes | 191 | 95.05.0 |
| Installation, Maintenance, and Repair (n=14) | 26.5 | 5.2 | Non-Hispanic white Non-Hispanic blackHispanicOther | 10211 | 71.414.37.17.1 | NoYes | 014 | 0.0100.0 | <High school=High school>High school | 1310 | 7.121.471.4 | NoYes | 140 | 100.00.0 |
| Production (n=308) | 26.1 | 5.5 | Non-Hispanic white Non-Hispanic blackHispanicOther | 1403511617 | 45.511.437.75.5 | NoYes | 114194 | 37.063.0 | <High school=High school>High schoolMissing | 98128811 | 31.941.726.4 | NoYesMissing | 30431 | 99.01.0 |
| Transportation and Material Moving (n=159) | 26.7 | 6.2 | Non-Hispanic white Non-Hispanic blackHispanicOther | 6424656 | 40.315.140.93.8 | NoYes | 6099 | 37.762.3 | <High school=High school>High school | 457143 | 28.344.727.0 | NoYes | 1581 | 99.40.6 |
| Military Specific (n=5) | 28.6 | 7.1 | Non-Hispanic white Non-Hispanic blackHispanicOther | 0410 | 0.080.020.00.0 | NoYes | 14 | 20.080.0 | <High school=High school>High school | 005 | 0.00.0100.0 | NoYes | 50 | 100.00.0 |

| **Table S-1b. Additional characteristics of mothers of liveborn infants without a birth defect employed during the pre-pregnancy period by major occupational group, National Birth Defects Prevention Study, 1997–2011** |
| --- |
| **Occupational Group** | **Pre-pregnancy** **body mass index\*** | **Pre-pregnancy folic acid** **supplement use**† | **Pre-pregnancy** **smoking**  | **Pre-pregnancy** **alcohol consumption** |
|  | *n* | *%* |  | *n* | *%* |   | *n* | *%* |   | *n* | *%* |
| Management (n=491) | Underweight Normal weight Overweight Obese Missing | 16288119662 | 3.358.924.313.5 | <=30 days<1/day Daily useMissing | 211372358 | 43.77.748.7 | NoYes | 42665 | 86.813.2 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 183812225 | 37.716.745.7 |
| Business and Financial Operations (n=308) | Underweight Normal weight Overweight Obese | 122025836 | 3.965.618.811.7 | <=30 days<1/day Daily useMissing | 137221481 | 44.67.248.2 | NoYes | 27335 | 88.611.4 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 132501233 | 43.316.440.3 |
| Computer and Mathematical (n=117) | Underweight Normal weight Overweight Obese | 5732316 | 4.362.419.713.7 | <=30 days<1/day Daily useMissing | 4812561 | 41.410.348.3 | NoYes | 1098 | 93.26.8 | No drinkingBinge drinking (>=4)< 4 drinks | 551646 | 47.013.739.3 |
| Architecture and Engineering (n=34) | Underweight Normal weight Overweight Obese | 02473 | 0.070.620.68.9 | <=30 days<1/day Daily useMissing | 132181 | 39.46.154.6 | NoYes | 322 | 94.15.9 | No drinkingBinge drinking (>=4)< 4 drinks | 11815 | 32.423.544.1 |
| Life, Physical, and Social Sciences (n=118) | Underweight Normal weight Overweight Obese | 582247 | 4.269.520.35.9 | <=30 days<1/day Daily use | 461953 | 39.016.144.9 | NoYes | 1099 | 92.47.6 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 4815541 | 41.012.846.2 |
| Community and Social Service (n=180) | Underweight Normal weight Overweight Obese Missing | 69437421 | 3.452.520.723.5 | <=30 days<1/day Daily useMissing | 8510832 | 47.85.646.6 | NoYes | 15525 | 86.113.9 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 8323731 | 46.412.840.8 |
| Legal (n=89) | Underweight Normal weight Overweight Obese Missing | 5571881 | 5.764.820.49.1 | <=30 days<1/day Daily useMissing | 399401 | 44.310.245.5 | NoYes | 7514 | 84.315.7 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 3115412 | 35.617.247.1 |
| Education, Training, and Library (n=710) | Underweight Normal weight Overweight Obese | 20400180110 | 2.856.325.415.5 | <=30 days<1/day Daily useMissing | 351642878 | 50.09.140.9 | NoYes | 66545 | 93.76.3 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 402812234 | 56.911.531.6 |
| Arts, Design, Entertainment, Sports, and Media (n=146) | Underweight Normal weight Overweight Obese Missing | 99030143 | 6.362.921.09.8 | <=30 days<1/day Daily useMissing | 749594 | 52.16.341.5 | NoYes | 12422 | 84.915.1 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 6522572 | 45.115.339.6 |
| Healthcare Practitioners and Technical (n=637) | Underweight Normal weight Overweight Obese Missing | 14378148952 | 2.259.523.315.0 | <=30 days<1/day Daily useMissing | 301492834 | 47.67.744.7 | NoYes | 56869 | 89.210.8 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 3241012102 | 51.015.933.1 |
| Healthcare Support (n=339) | Underweight Normal weight Overweight Obese Missing | 1713596883 | 5.140.228.626.2 | <=30 days<1/day Daily useMissing | 26315601 | 77.84.417.8 | NoYes | 24990 | 73.526.5 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 20068692 | 59.320.220.5 |
| Protective Service (n=64) | Underweight Normal weight Overweight Obese | 1281817 | 1.643.828.126.6 | <=30 days<1/day Daily use | 44317 | 68.84.726.6 | NoYes | 4321 | 67.232.8 | No drinkingBinge drinking (>=4)< 4 drinks | 341218 | 53.118.828.1 |
| Food Preparation and Serving Related (n=667) | Underweight Normal weight Overweight Obese Missing | 4435313710132 | 6.955.621.615.9 | <=30 days<1/day Daily useMissing | 539181019 | 81.92.715.3 | NoYesMissing | 4152511 | 62.337.7 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 3581641396 | 54.224.821.0 |
| Building and Grounds Cleaning (n=197) | Underweight Normal weight Overweight Obese Missing | 996353324 | 5.255.520.219.1 | <=30 days<1/day Daily useMissing | 1733192 | 88.71.59.7 | NoYes | 14750 | 74.625.4 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 13128371 | 66.814.318.9 |
| Personal Care and Service (n=441) | Underweight Normal weight Overweight Obese Missing | 202218910110 | 4.651.320.723.4 | <=30 days<1/day Daily useMissing | 31325994 | 71.65.722.67 | NoYes | 34398 | 77.822.2 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 26575965 | 60.817.222.0 |
| Sales and Related (n=807) | Underweight Normal weight Overweight Obese Missing | 494231741529 | 6.153.021.819.0 | <=30 days<1/day Daily useMissing | 6073315710 | 76.24.119.7 | NoYes | 611196 | 75.724.3 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 4421472153 | 55.018.326.7 |
| Office and Administrative Support (n=1406) | Underweight Normal weight Overweight Obese Missing | 656953323113 | 4.649.523.722.2 | <=30 days<1/day Daily useMissing | 9787933712 | 70.25.724.2 | NoYes | 1123283 | 79.920.1 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 8022463517 | 57.317.625.1 |
| Farming, Fishing, and Forestry (n=84) | Underweight Normal weight Overweight Obese Missing | 525221715 | 7.236.231.924.6 | <=30 days<1/day Daily use | 7545 | 89.34.86.0 | NoYes | 777 | 91.78.3 | No drinkingBinge drinking (>=4)< 4 drinks | 69510 | 82.16.011.9 |
| Construction and Extraction (n=20) | Underweight Normal weight Overweight Obese Missing | 15941 | 5.326.347.421.1 | <=30 days<1/day Daily use | 2000 | 100.00.00.0 | NoYes | 137 | 65.035.0 | No drinkingBinge drinking (>=4)< 4 drinks | 1244 | 60.020.020.0 |
| Installation, Maintenance, and Repair (n=14) | Underweight Normal weight Overweight Obese | 0761 | 0.050.042.97.1 | <=30 days<1/day Daily use | 725 | 50.014.335.7 | NoYes | 104 | 71.428.6 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 6521 | 46.238.515.4 |
| Production (n=308) | Underweight Normal weight Overweight Obese Missing | 16132666331 | 5.847.723.822.7 | <=30 days<1/day Daily useMissing | 2538398 | 84.32.713.0 | NoYes | 23177 | 75.025.0 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 20643572 | 67.314.118.6 |
| Transportation and Material Moving (n=159) | Underweight Normal weight Overweight Obese Missing | 768373017 | 4.947.926.121.1 | <=30 days<1/day Daily useMissing | 1278213 | 81.45.113.5 | NoYes | 11643 | 73.027.0 | No drinkingBinge drinking (>=4)< 4 drinksMissing | 10520322 | 66.912.720.4 |
| Military Specific (n=5) | Underweight Normal weight Overweight Obese | 1400 | 20.080.00.00.0 | <=30 days<1/dayDaily use | 401 | 80.00.020.0 | NoYes | 41 | 80.020.0 | No drinkingBinge drinking (>=4)< 4 drinks | 212 | 40.020.040.0 |