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| **SUPPLEMENT 1** | | | | |
| **DIABETES** | **MORTALITY** |  |  |  |
| REFERENCE | **Group/Race** | **Migration Distance**  **(x1000Km)** | **Reported Rate/1000**  **(males)** | **Normalized Mortality Overall US** |
| McBean (2)1994 | BLACK | 5 | 91.3 | 0.98 |
|  | WHITE | 10 | 92.9 | 1 |
|  | HISPANIC | 33 | 69.1 | 0.74 |
|  | ASIAN | 18 | 71.2 | 0.77 |
| 1995 | BLACK | 5 | 95.7 | 1.02 |
|  | WHITE | 10 | 93.5 | 1 |
|  | HISPANIC | 33 | 77 | 0.82 |
|  | ASIAN | 18 | 77.6 | 0.83 |
| 1997 | BLACK | 5 | 95.1 | 1.03 |
|  | WHITE | 10 | 92.7 | 1 |
|  | HISPANIC | 33 | 74.1 | 0.8 |
|  | ASIAN | 18 | 72.8 | 0.79 |
| 1999 | BLACK | 5 | 96.5 | 1.04 |
|  | WHITE | 10 | 92.7 | 1 |
|  | HISPANIC | 33 | 79.6 | 0.86 |
|  | ASIAN | 18 | 62.8 | 0.68 |
| 2001 | BLACK | 5 | 91.7 | 1.05 |
|  | WHITE | 10 | 87.7 | 1 |
|  | HISPANIC | 33 | 72.5 | 0.83 |
|  | ASIAN | 18 | 56.3 | 0.64 |
|  |  | r = - | 0.700364946 |  |
|  |  | n= | 20 |  |
|  |  | p value= | 0.00059 |  |

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| **SUPPLEMENT 2** | | | | |
| **OVERALL**  **MORTALITY** | | | | |
| REFERENCE | **Group/Race** | **Migration Distance**  **(x1000Km)** | **Reported Rate/1000** | **Normalized Mortality Overall US** |
| McBean (2) 1994 | BLACK | 5 | 61 | 1.12 |
|  | WHITE | 10 | 54.6 | 1 |
|  | ASIAN | 18 | 47.5 | 0.87 |
|  | HIS PANIC | 33 | 39.2 | 0.72 |
| McBean (2) 2001 | BLACK | 5 | 61.1 | 1.13 |
|  | WHITE | 10 | 53.9 | 1 |
|  | ASIAN | 18 | 37.1 | 0.69 |
|  | HIS PANIC | 33 | 43.3 | 0.8 |
| XU (29) 2007 | BLACK | 5 | 9.79 | 1.28 |
|  | WHITE | 10 | 7.63 | 1 |
|  | EA/PI | 19 | 4.15 | 0.54 |
|  | AI/AN | 27.5 | 6.27 | 0.82 |
|  | MEX-AM | 33 | 5.46 | 0.72 |
|  | CE&SO AM | 38.5 | 3.26 | 0.43 |
| Minino (30) 2009 | BLACK | 5 | 9.43 | 1.27 |
|  | WHITE | 10 | 7.45 | 1 |
|  | EA/PI | 19 | 4.13 | 0.55 |
|  | AI/AN | 27.5 | 6.03 | 0.81 |
|  | HISPANIC | 33 | 5.19 | 0.7 |
| Borrell (4) 1997-2004 | BLACK | 5 | 12.2 | 0.99 |
|  | WHITE | 10 | 12.3 | 1 |
|  | MEX-AM | 33 | 7.3 | 0.59 |
|  | MEXICAN | 33 | 5.15 | 0.42 |
|  | CE&SOAM | 38.5 | 2.59 | 0.21 |
|  |  |  | **r=-** | 0.838678839 |
|  |  |  | n= | 24 |
|  |  |  | p value | <0.00001 |
|  |  |  | R2=0.71 |  |

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| **SUPPLEMENT 3A** | | |
| **WHO 2012** | | |
| Reference 31 | **MIGRATION DISTANCE** | **SURVIVAL** |
| JAPAN | 20 | 84.6 |
|  | 10.5 | 84.2 |
|  | 15.9 | 84 |
| HONG KONG | 15.8 | 83.8 |
|  | 9.5 | 83.5 |
|  | 12 | 83.3 |
|  | 9.3 | 83.1 |
|  | 11 | 83 |
|  | 20.2 | 83 |
|  | 9 | 82.8 |
|  | 27 | 82.5 |
|  | 10.7 | 82.5 |
|  | 25 | 82.1 |
|  | 9.9 | 82 |
|  | 7.5 | 82 |
|  | 11.1 | 81.9 |
|  | 9.7 | 81.5 |
|  | 10 | 81 |
|  | 9.8 | 81.5 |
|  | 10.2 | 81.4 |
|  | 8.9 | 81.2 |
|  | 40 | 81.2 |
|  | 9.7 | 81 |
|  | 8.8 | 81 |
|  | 10.9 | 81 |
|  | 18.5 | 81 |
|  | 10.6 | 81 |
|  | 9.95 | 81 |
|  | 10.3 | 81 |
| LIECHTENSTEIN | 9 | 80.7 |

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| **SUPPLEMENT 3B** | | | |
| WHO 2012 | | | |
| **Migration Distance** | **survival** | **Migration Distance** | **survival** |
| 3 | 75.2 | 16.5 | 73.5 |
| 33.6 | 75.1 | 7.12 | 73.2 |
| 15 | 75 | 33 | 73.2 |
| 9.64 | 75 | 23.7 | 73 |
| 35.8 | 75 | 13.2 | 73 |
| 8.88 | 75 | 21.2 | 73 |
| 7.75 | 75 | 18.3 | 70 |
| 14 | 74.9 | 10.4 | 72.5 |
| 34.7 | 74.8 | 18.1 | 72 |
| 6.5 | 74.7 | 2.9 | 72 |
| 11.2 | 74.7 | 23.1 | 72 |
| 41.4 | 74.7 | 8.7 | 71.5 |
| 38 | 74.7 | 34.5 | 71.5 |
| 34.79 | 74.6 | 8.86 | 71 |
| 7.52 | 74.6 | 11.2 | 70.5 |
| 35.8 | 74.6 | 13.15 | 70.8 |
| 22.5 | 74.5 | 36.1 | 70.5 |
| 6.1 | 74.5 | 16 | 70 |
| 10.82 | 74.5 | 12.9 | 70 |
| 34.85 | 74.5 | 11.4 | 69 |
| 7.6 | 74.5 | 7.54 | 68.5 |
| 8.85 | 74.5 | 18.12 | 69 |
| 8.89 | 74.5 | 13.1 | 69 |
| 8.51 | 74.5 | 18.5 | 69 |
| 36.5 | 74.5 | 40.1 | 69 |
| 8.5 | 74.4 | 11.25 | 68.5 |
| 8.6 | 74.4 | 11.7 | 68.25 |
| 7.2 | 74.3 | 14.3 | 68 |
| 24.7 | 74 | 13.4 | 68 |
| 14 | 74 | 8.87 | 68 |
| 8.87 | 74 | 2.8 | 68 |
| 34.8 | 74 | 20.1 | 68 |
| 8.82 | 74 | 11.35 | 68 |
| 8.5 | 74 | 19.5 | 67.5 |
| 32.8 | 74.8 | 0.4 | 67.2 |
| 7.9 | 73.5 | 8.3 | 67 |

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| **SUPPLEMENT 3C** | |
| **WHO 2012** | |
| **MIGRATION**  **DISTANCE** | **SURVIVAL** |
| 8.91 | 66.5 |
| 14.2 | 66 |
| 5.2 | 66 |
| 2.1 | 66 |
| 0.1 | 66 |
| 11.5 | 65 |
| 2.79 | 64 |
| 6.51 | 64 |
| 18.52 | 64 |
| 6.3 | 64 |
| 32.8 | 63 |
| 4.2 | 63 |
| 4.4 | 61.5 |
| 3.1 | 61.5 |
| 1.4 | 61 |
| 5 | 61 |
| 4.15 | 60.5 |
| 2.85 | 60 |
| 2.11 | 60 |
| 8.92 | 60 |
| 5.91 | 59.5 |
| 5.4 | 58 |
| 2.2 | 59 |
| 5.1 | 59 |
| 6.31 | 59 |
| 1.5 | 58 |
| 2.55 | 58 |
| 5.2 | 57 |
| 5.59 | 56.5 |
| 5.82 | 56.5 |
| 2.82 | 56 |
| 4.7 | 56 |
| 0.8 | 55.5 |
| 6.52 | 55 |
| 2.9 | 54 |

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| **SUPPLEMENT 3C** | |
| **WHO 2012** | |
| **MIGRATION DISTANCE** | **SURVIVAL** |
| 0.7 | 54 |
| 2.08 | 53 |
| 4 | 53 |
| 1.45 | 52.5 |
| 1.41 | 52 |
| 4.21 | 51 |
| 5.12 | 51 |
| 0.82 | 51 |
| 6.55 | 50 |
| 0.85 | 50 |
| 4.3 | 50 |
| 2.6 | 49.5 |
| 3.2 | 48.5 |
| 5.7 | 38 |
|  | r= 0.41 |
|  | n=192 |
|  | p < 3.0 x 10-8 |
|  | R2=0.17 |

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| **SUPPLEMENT 4** | | | | |
| **CV MORTALITY** | | | | |
| REFERENCE | **Group/Race** | **Migration Distance**  **(x1000Km)** | **Reported Rate/1000** | **Normalized Mortality Overall US** |
| Hummer (3) | BLACK | 5 | 25.2 | 1.09 |
|  | WHITE | 10 | 23.1 | 1 |
|  | A/PI | 19 | 14.5 | 0.63 |
|  | HISPANIC | 33 | 14.3 | 0.62 |
|  | NA | 30 | 14.1 | 0.61 |
|  |  |  | **(females)** |  |
|  | BLACK | 5 | 11.8 | 1.08 |
|  | WHITE | 10 | 11 | 1 |
|  | A/PI | 19 | 5.07 | 0.46 |
|  | HISPANIC | 33 | 6.04 | 0.55 |
|  | NA | 30 | 5.72 | 0.52 |
|  |  | **r= -** | -0.863524365 |  |
|  |  | n= | 10 |  |
|  |  | p value | <0.0013 |  |
|  |  | 5 | 1.09 |  |
|  |  | 10 | 1 |  |
|  |  | 19 | 0.63 |  |
|  |  | 33 | 0.62 |  |
|  |  | 30 | 0.61 |  |
|  |  | 5 | 1.08 |  |
|  |  | 10 | 1 |  |
|  |  | 19 | 0.46 |  |
|  |  | 33 | 0.55 |  |
|  |  | 30 | 0.52 |  |

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| **SUPPLEMENT 5** | | | | | |
| **CANCER MORTALITY** |  |  |  |  |  |
| REFERENCE | **Group/Race** | **males only Migration Distance (x1000Km)** | **Reported Rate/1000 (males)** | **Normalized Mortality** | **Reported Normalized Mortality** |
| Jemal (32) | BLACK | 5 | 3.04 | 1.34 |  |
|  | WHITE | 10 | 2.27 | 1 |  |
|  | AI/AN | 27.5 | 1.83 | 0.81 |  |
|  | HISPANIC | 33 | 1.55 | 0.68 |  |
|  | ASAM/PI | 19 | 1.35 | 0.59 |  |
| Saeed (33) | BLACK | 5 | NR |  | 1.09 |
|  | WHITE | 10 | NR |  | 1 |
|  | US HISP W | 33 | NR |  | 0.85 |
|  | NONUS HISP | 33 | NR |  | 0.87 |
|  |  | **r= -** | 0.7074047 |  |  |
|  |  | N= | 9 |  |  |
|  |  | p value | <0.033 |  |  |

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| **SUPPLEMENT 6** | | | | |
| **SEPSIS MORTALITY** | | | | |
| REFERENCE | **Group/Race** | **males only Migration Distance (x1000Km)** | **Reported Rate/1000 (males)** | **Normalized Mortality** |
| Hummer (3) | BLACK | 5 | 1.5 | 2.27 |
|  | WHITE | 10 | 0.66 | 1 |
|  | A/PI | 19 | 0.44 | 0.67 |
|  | HISPANIC | 33 | 0.47 | 0.71 |
|  | NA | 30 | 0.57 | 0.86 |
|  |  |  | **(females)** |  |
|  | BLACK | 5 | 1.4 | 2.06 |
|  | WHITE | 10 | 0.68 | 1 |
|  | A/PI | 19 | 0.32 | 0.47 |
|  | HISPANIC | 33 | 0.43 | 0.63 |
|  | NA | 30 | 0.53 | 0.78 |
|  |  | **r = -** | 0.7248017 |  |
|  |  | n= | 10 |  |
|  |  | p value | <0.018 |  |