**Supplementary Table S1.** Characteristics of children included and excluded for missing data, by heart condition status, National Survey of Children’s Health, United States, 2018-2020

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Heart Condition | | | |  | No Heart Condition | | | | |
|  | Excluded | | Included | | Chi-square p-value | Excluded | | Included | | Chi-square  p-value |
|  | N | Weighted % | N | Weighted % |  | N | Weighted % | N | Weighted % |  |
| Total | 60 | 4.6 (2.8, 7.2) | 1843 | 95.5(92.8, 97.2) |  | 3253 | 5.9(5.4, 6.3) | 67585 | 94.1(93.7, 94.6) |  |
| Bullied in the past 12 months |  |  |  |  | 0.35 |  |  |  |  | 0.22 |
| Weekly or daily | 24 | 58.4(36.7, 77.3) | 778 | 43.7(39.3, 48.2) |  | 1814 | 59.3(55.5, 63.1) | 36509 | 56.7(55.9, 57.6) |  |
| Annually or monthly | 29 | 28.9(15.1, 48.2) | 876 | 45.1(40.7, 49.5) |  | 1229 | 34.8(31.2, 38.6) | 27517 | 38.0(37.2, 38.8) |  |
| Never | 7 | 12.6(4.4, 31.4) | 189 | 11.2(8.6, 14.6) |  | 210 | 5.9(4.7, 7.4) | 3559 | 5.3(5.0, 5.7) |  |
| Sex |  |  |  |  | 0.05 |  |  |  |  | 0.19 |
| Male | 40 | 75.7(56.4, 88.3) | 1006 | 53.2(48.7, 57.6) |  | 1700 | 53.5(49.6, 57.5) | 35040 | 50.8(50.0, 51.7) |  |
| Female | 20 | 24.3(11.7, 43.6) | 837 | 46.8(42.4, 51.3) |  | 1553 | 46.5(42.6, 50.4) | 32545 | 49.2(48.3, 50.0) |  |
| Age group (years) |  |  |  |  | 0.19 |  |  |  |  | 0.51 |
| 6-8 | 7 | 13.9(4.7, 34.6) | 368 | 25.8(21.6, 30.4) |  | 611 | 22.4(19.1, 26.1) | 13550 | 24.0(23.3, 24.8) |  |
| 9-11 | 21 | 48.3(26.1, 71.3) | 396 | 24.3(20.6, 28.5) |  | 761 | 25.6(22.1, 29.5) | 15379 | 25.5(24.7, 26.2) |  |
| 12-14 | 13 | 10.8(4.8, 22.8) | 467 | 23.3(20.2, 26.8) |  | 844 | 24.7(21.8, 27.8) | 17416 | 25.7(25.0, 26.5) |  |
| 15-17 | 19 | 27.0(13.3, 47.1) | 612 | 26.6(23.1, 30.3) |  | 1037 | 27.3(23.9, 31.0) | 21240 | 24.8(24.1, 25.5) |  |
| Race and ethnicity[[1]](#footnote-1) |  |  |  |  | 0.07 |  |  |  |  | <0.001 |
| Black, non-Hispanic | 11 | 28.8(13.5, 51.0) | 117 | 12.1(9.5, 15.3) |  | 401 | 20.5(17.6, 23.6) | 4406 | 13.3(12.7, 13.9) |  |
| Hispanic | 6 | 6.8(2.1, 20.0) | 195 | 20.3(16.0, 25.4) |  | 478 | 30.3(25.9, 35.0) | 8343 | 25.7(24.8, 26.7) |  |
| Other, non-Hispanic[[2]](#footnote-2) | 7 | 30.7(10.2, 63.2) | 205 | 8.2(6.5, 10.2) |  | 422 | 10.0(8.4, 11.8) | 8511 | 10.6(10.1, 11.0) |  |
| White, non-Hispanic | 36 | 33.8(18.5, 53.4) | 1326 | 59.4(54.7, 64.0) |  | 1952 | 39.3(35.8, 42.8) | 46325 | 50.4(49.6, 51.3) |  |
| Caregiver marital status |  |  |  |  | 0.03 |  |  |  |  | 0.02 |
| Missing | 30 |  |  |  |  | 1766 |  |  |  |  |
| Never married | 1 | 1.4(0.2, 9.6) | 114 | 7.9(5.7, 10.8) |  | 98 | 5.8(4.2, 8.1) | 3444 | 7.5(7.0, 8.0) |  |
| Divorced, separated, or widowed | 11 | 48.6(26.5, 71.2) | 305 | 16.6(13.4, 20.3) |  | 316 | 19.9(16.1, 24.4) | 9854 | 15.1(14.5, 15.7) |  |
| Married or not married, living with partner | 18 | 50.0(27.8, 72.2) | 1424 | 75.6(71.4, 79.3) |  | 1073 | 74.3(69.4, 78.6) | 54287 | 77.5(76.7, 78.2) |  |
| Caregiver educational attainment |  |  |  |  | 0.03 |  |  |  |  | <0.001 |
| High school or less | 19 | 60.4(39.5, 78.1) | 282 | 22.2(18.3, 26.8) |  | 902 | 42.3(38.3, 46.4) | 10768 | 29.5(28.6, 30.4) |  |
| More than high school | 41 | 39.6(21.9, 60.5) | 1561 | 77.8(73.2, 81.7) |  | 2351 | 57.7(53.6, 61.7) | 56817 | 70.5(69.6, 71.4) |  |
| Poverty status (% FPL)[[3]](#footnote-3) |  |  |  |  | 0.16 |  |  |  |  | <0.001 |
| <100 | 12 | 45.1(22.7, 69.7) | 248 | 19.5(15.6, 24.1) |  | 647 | 27.5(23.9, 31.4) | 7663 | 17.9(17.1, 18.6) |  |
| 100-199 | 18 | 24.6(11.7, 44.3) | 329 | 20.1(17.0, 23.8) |  | 676 | 23.9(20.5, 27.7) | 11016 | 21.8(21.1, 22.6) |  |
| 200-399 | 16 | 15.6(7.4, 30.1) | 590 | 30.8(26.8, 35.0) |  | 871 | 24.6(21.6, 27.9) | 20847 | 28.8(28.1, 29.5) |  |
| ≥400 | 14 | 14.7(6.9, 28.8) | 676 | 29.6(26.1, 33.4) |  | 1059 | 24.0(21.0, 27.3) | 28059 | 31.5(30.8, 32.2) |  |
| Intellectual disability |  |  |  |  | 0.004 |  |  |  |  | 0.43 |
| Missing | 6 |  |  |  |  | 211 |  |  |  |  |
| Yes | 2 | 0.7(0.1, 4.0) | 141 | 7.2(5.3, 9.7) |  | 52 | 1.5(0.9, 2.3) | 719 | 1.2(1.0, 1.4) |  |
| No | 52 | 99.3(96.0, 99.0 | 1702 | 92.8(90.3, 94.7) |  | 2990 | 98.5(97.7, 99.1) | 66866 | 98.8(98.6, 99.0) |  |
| Down syndrome |  |  |  |  | 0.37 |  |  |  |  | 0.94 |
| Missing | 5 |  |  |  |  | 179 |  |  |  |  |
| Yes | 3 | 1.8(0.4, 9.0) | 74 | 3.4(2.4, 4.9) |  | 6 | 0.1(0.0, 0.3) | 71 | 0.1(0.1, 0.2) |  |
| No | 52 | 98.2(91.0, 99.7) | 1769 | 96.6(95.1, 97.6) |  | 3068 | 99.9(99.7, 99.9) | 67514 | 99.9(99.8, 99.9) |  |
| Other genetic or inherited condition |  |  |  |  | 0.22 |  |  |  |  | 0.29 |
| Missing | 4 |  |  |  |  | 282 |  |  |  |  |
| Yes | 8 | 8.5(3.3, 20.0) | 311 | 14.7(12.0, 17.7) |  | 127 | 3.3(2.0, 5.4) | 3000 | 4.2(3.9, 4.5) |  |
| No | 48 | 91.5(80.1, 96.7) | 1532 | 85.4(82.3, 88.0) |  | 2844 | 96.7(94.6, 98.0) | 64585 | 95.8(95.5, 96.1) |  |
| Ever told overweight |  |  |  |  | 0.28 |  |  |  |  | 0.06 |
| Missing | 4 |  |  |  |  | 292 |  |  |  |  |
| Yes | 8 | 34.1(12.6, 65.0) | 255 | 14.8(12.2, 17.8) |  | 277 | 8.9(7.2, 10.9) | 5830 | 10.8(10.2, 11.4) |  |
| No | 48 | 65.9(35.0, 87.4) | 1588 | 85.3(82.2, 87.8) |  | 2684 | 91.1(89.1, 92.8) | 61755 | 89.3(88.6, 89.9) |  |
| Functional limitation[[4]](#footnote-4) |  |  |  |  | 0.93 |  |  |  |  | 0.65 |
| Missing | 0 |  |  |  |  | 6 |  |  |  |  |
| ≥1 | 37 | 51.0(28.3, 73.3) | 924 | 50.0(45.5, 54.4) |  | 1057 | 28.9(25.6, 32.4) | 18804 | 28.1(27.3, 28.9) |  |
| None | 23 | 49.0(26.7, 71.7) | 919 | 50.0(45.6, 54.5) |  | 2190 | 71.1(67.6, 74.4) | 48781 | 71.9(71.1, 72.7) |  |

**Supplementary Figure S1.** Prevalence of being bullied among children with and without heart conditions, ages 6-17 years, excluding those with Down syndrome or other genetic or inherited conditions, National Survey of Children’s Health, United States, 2018-2020

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**Supplementary Table S2.** Associations between heart condition status and being bullied among children ages 6-17 years**,** National Survey of Children’s Health, 2018-2020 and 2018-2019

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Bullied in the past 12 months | | | | | |
|  | 2018-2020 | | | 2018-2019 | | |
| Heart Condition | N | Weighted %  (95% CI) | aPR  (95% CI) | N | Weighted %  (95% CI) | aPR  (95% CI) |
| Yes | 1065 | 56.3(51.8, 60.7) | 1.3(1.2, 1.4) | 661 | 60.8(55.7, 65.7) | 1.3(1.1, 1.4) |
| No | 31076 | 43.3(42.5, 44.1) | REF | 20132 | 47.4(46.4, 48.5) | REF |

CI: Confidence Interval; aPR: adjusted prevalence ratio of being bullied comparing children with heart conditions to children without heart conditions from 2018-2020 and 2018-2019, adjusted for sex, age group, race and ethnicity, ever told overweight.

**Supplementary Table S3.** Associations between heart condition status and frequency of being bullied among children ages 6-17 years, National Survey of Children’s Health, 2018-2020 and 2018-2019

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Bullied annually or monthly | | | | | |
|  | 2018-2020 | | | 2018-2019 | | |
| Heart Condition | N | Weighted %  (95% CI) | aPR  (95% CI) | N | Weighted %  (95% CI) | aPR  (95% CI) |
| Yes | 876 | 50.8(46.1, 55.4) | 1.2(1.1, 1.4) | 546 | 55.4(50.0, 60.7) | 1.2(1.1, 1.4) |
| No | 27517 | 40.1(39.3, 40.9) | REF | 17834 | 44.1(43.0, 45.2) | REF |
|  | Bullied weekly or daily | | | | | |
|  | 2018-2020 | | | 2018-2019 | | |
| Heart Condition | N | Weighted %  (95% CI) | aPR  (95% CI) | N | Weighted %  (95% CI) | aPR  (95% CI) |
| Yes | 189 | 20.5(15.8, 26.1) | 2.2(1.7, 2.9) | 115 | 23.5(17.2, 31.3) | 2.1(1.5, 2.9) |
| No | 3559 | 8.6(8.0, 9.2) | REF | 2298 | 10.2(9.4, 11.1) | REF |

CI: Confidence Interval; aPR: adjusted prevalence ratio of being bullied annually or monthly versus never and weekly or daily versus never comparing children with heart conditions to children without heart conditions from 2018-2020 and 2018-2019, adjusted for sex, age group, race and ethnicity, ever told overweight.

**Supplementary Table S4.** Associations between demographic characteristics and frequency of being bullied among children with heart conditions ages 6-17 years, excluding those with Down syndrome or other genetic or inherited conditions, National Survey of Children’s Health, United States, 2018-2020

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Bullied in the past 12 months | | | | | | | |
|  | Never | | Annually or monthly | | | Weekly or daily | | |
|  | N | Weighted %  (95% CI) | N | Weighted %  (95% CI) | aPR  (95% CI) | N | Weighted %  (95% CI) | aPR  (95% CI) |
| Total | 651 | 45.7(40.7, 50.7) | 702 | 44.5(39.6, 49.4) |  | 124 | 9.8(7.1, 13.4) |  |
| Sex |  |  |  |  |  |  |  |  |
| Male | 377 | 47.6(41.2, 54.1) | 366 | 44.8(38.3, 51.6) | 1.0(0.8, 1.2) | 64 | 7.6(5.3, 10.8) | 0.7(0.4, 1.0) |
| Female | 274 | 43.5(35.8, 51.5) | 336 | 44.1(37.0, 51.4) | REF | 60 | 12.4(7.6, 19.5) | REF |
| Age group (years) |  |  |  |  |  |  |  |  |
| 6-8 | 122 | 48.8(37.2, 60.6) | 146 | 44.0(33.3, 55.3) | 1.2(0.9, 1.7) | 25 | 7.2(3.8, 13.3) | 2.3(1.2, 4.6) |
| 9-11 | 107 | 32.1(23.4, 42.4) | 181 | 50.6(40.2, 61.0) | 1.6(1.2, 2.1) | 34 | 17.2(10.3, 27.3) | 5.4(3.0, 9.6) |
| 12-14 | 151 | 40.1(31.9, 48.8) | 194 | 48.2(39.6, 56.9) | 1.4(1.1, 1.9) | 28 | 11.8(5.9, 22.2) | 3.2(1.5, 6.8) |
| 15-17 | 271 | 60.0(51.4, 68.0) | 181 | 36.2(28.3, 45.0) | REF | 37 | 3.8(2.4, 5.9) | REF |
| Race and ethnicity[[5]](#footnote-5) |  |  |  |  |  |  |  |  |
| Black, non-Hispanic | 53 | 59.5(46.4, 71.3) | 42 | 33.5(22.5, 46.5) | 0.7(0.5, 1.0) | 8 | 7.0(2.9, 15.9) | 0.6(0.3, 1.3) |
| Hispanic | 82 | 51.3(36.1, 66.2) | 63 | 41.6(27.9, 56.8) | 0.9(0.6, 1.3) | 9 | 7.1(2.6, 18.0) | 0.6(0.3, 1.3) |
| Other, non-Hispanic[[6]](#footnote-6) | 70 | 36.2(25.6, 48.4) | 71 | 47.8(35.1, 60.7) | 1.1(0.8, 1.4) | 16 | 16.0(7.7, 30.2) | 1.4(0.7, 2.8) |
| White, non-Hispanic | 446 | 42.1(36.7, 47.6) | 526 | 47.4(41.9, 53.0) | REF | 91 | 10.5(7.0, 15.6) | REF |
| Caregiver marital status |  |  |  |  |  |  |  |  |
| Never married | 36 | 37.5(22.7, 55.1) | 44 | 36.8(22.1, 54.4) | 1.0(0.7, 1.5) | 11 | 25.7(10.1, 51.5) | 2.1(1.0, 4.4) |
| Divorced, separated, widowed | 96 | 46.2(33.2, 59.8) | 119 | 46.3(32.7, 60.4) | 1.0(0.8, 1.4) | 20 | 7.5(4.3, 12.8) | 0.9(0.5, 1.8) |
| Married, not married living with a partner | 519 | 46.5(40.9, 52.1) | 539 | 45.0(39.6, 50.4) | REF | 93 | 8.6(6.0, 12.0) | REF |
| Caregiver educational attainment |  |  |  |  |  |  |  |  |
| High school or less | 107 | 49.6(36.5, 62.8) | 88 | 35.7(25.0, 48.1) | 0.9(0.6, 1.2) | 22 | 14.7(7.6, 26.7) | 1.5(0.8,2.7) |
| More than high school | 544 | 44.6(39.5, 49.8) | 614 | 47.0(41.8, 52.1) | REF | 102 | 8.5(5.9, 12.0) | REF |
| Poverty status (% FPL)[[7]](#footnote-7) |  |  |  |  |  |  |  |  |
| <100 | 87 | 51.4(37.1, 65.5) | 84 | 34.2(23.0, 47.4) | 0.8(0.6, 1.2) | 25 | 14.4(6.6, 28.6) | 1.6(0.7, 3.7) |
| 100-199 | 112 | 50.2(40.0, 60.4) | 110 | 39.0(29.7, 49.1) | 0.9(0.7, 1.2) | 24 | 10.8(6.2, 18.1) | 1.3(0.6, 2.6) |
| 200-399 | 204 | 41.4(33.1, 50.1) | 225 | 49.9(40.8, 59.0) | 1.1(0.9, 1.3) | 32 | 8.8(4.6, 16.0) | 1.3(0.6, 2.7) |
| ≥400 | 248 | 43.5(36.4, 50.9) | 283 | 49.2(42.0, 56.3) | REF | 43 | 7.3(4.5, 11.7) | REF |
| Intellectual disability |  |  |  |  |  |  |  |  |
| Yes | 11 | 46.7(18.2, 77.5) | 17 | 47.1(17.3, 79.1) | 1.0(0.4, 2.7) | 6 | 6.2(1.9, 18.3) | 0.3(0.1, 1.8) |
| No | 640 | 45.7(40.7, 50.8) | 685 | 44.4(39.5, 49.4) | REF | 118 | 9.9(7.1, 13.6) | REF |
| Ever told overweight |  |  |  |  |  |  |  |  |
| Yes | 66 | 36.1(26.2, 47.3) | 91 | 43.5(32.7, 55.0) | 1.2(0.9, 1.5) | 27 | 20.4(11.4, 33.7) | 2.5(1.5, 4.2) |
| No | 585 | 47.2(41.7, 52.7) | 611 | 44.6(39.3, 50.1) | REF | 97 | 8.1(5.6, 11.8) | REF |
| Functional limitation[[8]](#footnote-8) |  |  |  |  |  |  |  |  |
| ≥1 | 218 | 34.4(28.2, 41.2) | 324 | 48.5(41.6, 55.4) | 1.4(1.2, 1.7) | 89 | 17.1(12.0, 23.9) | 4.3(2.4, 7.8) |
| None | 433 | 54.4(47.5, 61.2) | 378 | 41.4(34.8, 48.3) | REF | 35 | 4.1(2.1, 7.9) | REF |

**Supplementary Figure S2.** Having a current diagnosis of anxiety or depression among children with heart conditions ages 6-17 years, by bullying status, excluding those with Down syndrome or other genetic or inherited conditions, National Survey of Children’s Health, United States, 2018-2020



**Supplementary Figure S3.** Having a current diagnosis of anxiety or depression among children with heart conditions ages 6-17 years, by bullying status, National Survey of Children’s Health, United States, 2018-2019



1. Non-Hispanic Black or African American alone; Hispanic; non-Hispanic other, including Asian, Alaskan Native, American Indian, Native Hawaiian, Pacific Islander, or mixed race; non-Hispanic White alone

   CI: Confidence Interval; FPL: Federal Poverty Level [↑](#footnote-ref-1)
2. Other includes respondents identified as Asian, Alaskan Native, American Indian, Native Hawaiian, Pacific Islander, or mixed race [↑](#footnote-ref-2)
3. Based on US Department of Health and Human Services poverty guideline [↑](#footnote-ref-3)
4. Adapted from National Survey of Children’s Health 12 functional difficulties indicator. Functional limitations are defined as having one or more of the following: serious difficulty concentrating, remembering, or making decisions because of a physical, mental, or emotional condition; serious difficulty walking or climbing stairs; difficulty dressing or bathing; difficulty doing errands alone, such as visiting a doctor’s office or shopping; deafness or problems with hearing; blindness or problems with seeing, even when wearing glasses. [↑](#footnote-ref-4)
5. Non-Hispanic Black or African American alone; Hispanic; non-Hispanic other, including Asian, Alaskan Native, American Indian, Native Hawaiian, Pacific Islander, or mixed race; non-Hispanic White alone [↑](#footnote-ref-5)
6. CI: Confidence Interval; aPR: adjusted prevalence ratio comparing being bullied being bullied annually or monthly. versus never and being bullied weekly or daily versus never. Adjusted for sex, age group, race and ethnicity, ever told overweight; FPL: Federal Poverty Level

   Other includes respondents identified as Asian, Alaskan Native, American Indian, Native Hawaiian, Pacific Islander, or mixed race [↑](#footnote-ref-6)
7. Based on US Department of Health and Human Services poverty guideline [↑](#footnote-ref-7)
8. Adapted from National Survey of Children’s Health 12 functional difficulties indicator. Functional limitations are defined as having one or more of the following: serious difficulty concentrating, remembering, or making decisions because of a physical, mental, or emotional condition; serious difficulty walking or climbing stairs; difficulty dressing or bathing; difficulty doing errands alone, such as visiting a doctor’s office or shopping; deafness or problems with hearing; blindness or problems with seeing, even when wearing glasses. [↑](#footnote-ref-8)