***Table 1. Observed frequencies and unweighted and weighted distributions of baseline demographic and clinical variables of study participants (n=2596), overall and stratified by sex******\****

|  |  |
| --- | --- |
|  | ***All participants, stratified by sex*** |
|  | ***All participants (n=2596)*** | *Male (n=1113)* | *Female (n=1483)* |
|  | *Observed* | *Weighted\** | *Observed* | *Weighted\** | *Observed* | *Weighted\** |
| *Characteristic* | *Count* | *%* | *%* | *(95% CI)* | *Count* | *%* | *%* | *(95% CI)* | *Count* | *%* | *%* | *(95% CI)* |
| **Age (years)** |  |  |  |  |  |  |  |  |  |  |  |  |
| 45-54\*\* | 645 | 24.8% | 27.3% | (25.5, 29.1) | 365 | 32.8% | 37.7% | (35.3, 40.3) | 280 | 18.9% | 17.9% | (16.4, 19.5) |
| 55-64 | 837 | 32.2% | 29.7% | (28.2, 31.1) | 323 | 29.0% | 28.0% | (26.1, 29.9) | 514 | 34.7% | 31.2% | (29.2, 33.2) |
| 65-74 | 760 | 29.3% | 29.6% | (28.0, 31.2) | 314 | 28.2% | 25.6% | (23.7, 27.6) | 446 | 30.1% | 33.2% | (31.1, 35.3) |
| ≥ 75 | 354 | 13.6% | 13.5% | (12.2, 14.9) | 111 | 10.0% | 8.7% | (7.8, 9.7) | 243 | 16.4% | 17.8% | (15.9, 19.9) |
| **Race** |  |  |  |  |  |  |  |  |  |  |  |  |
| Caucasian | 1799 | 69.3% | 82.4% | (80.3, 84.4) | 818 | 73.5% | 83.4% | (81.1, 85.4) | 981 | 66.1% | 81.5% | (79.0, 83.8) |
| African-American | 797 | 30.7% | 17.6% | (15.6, 19.7) | 295 | 26.5% | 16.6% | (14.6, 18.9) | 502 | 33.9% | 18.5% | (16.2, 21.0) |
| **BMI (kg/m2)** |  |  |  |  |  |  |  |  |  |  |  |  |
| Underweight: < 18.5 | 24 | 0.9% | 0.8% | (0.7, 1.1) | 8 | 0.7% | 0.6% | (0.4, 1.0) | 16 | 1.1% | 1.0% | (0.8, 1.4) |
| Normal weight: 18.5 - 24.9 | 638 | 24.7% | 24.7% | (23.3, 26.1) | 290 | 26.1% | 23.5% | (21.9, 25.3) | 348 | 23.6% | 25.8% | (23.5, 28.2) |
| Overweight: 25.0 - 29.9 | 1007 | 38.9% | 40.7% | (39.2, 42.2) | 489 | 44.1% | 45.9% | (43.6, 48.1) | 518 | 35.1% | 36.0% | (34.0, 38.1) |
| Obese: ≥ 30.0 | 917 | 35.5% | 33.8% | (32.3, 35.3) | 322 | 29.0% | 30.0% | (28.0, 32.1) | 595 | 40.3% | 37.2% | (34.9, 39.5) |
| **rHOA status** |  |  |  |  |  |  |  |  |  |  |  |  |
| Absent (KLG<2) | 1836 | 70.7% | 72.5% | (71.2, 73.8) | 816 | 73.3% | 74.7% | (72.8, 76.4) | 1020 | 68.8% | 70.5% | (68.7, 72.3) |
| Present (KLG≥2) | 760 | 29.3% | 27.5% | (26.2, 28.8) | 297 | 26.7% | 25.3% | (23.6, 27.2) | 463 | 31.2% | 29.5% | (27.7, 31.3) |

*\* Weighted to the 1990 target population; Radiographic data were available for women only 50 years of age or older; BMI values for 10 participants are missing.*

**Table 2. Weighted and sex-stratified prevalence estimates of cam morphologies among those with normal pelvic alignment and no rHOA (n=1601)\***

|  |  |  |
| --- | --- | --- |
|  | *AP alpha angle > 60 degrees* | *Triangular index sign* |
|  | *Unilateral* | *Bilateral* | *Unilateral* | *Bilateral* |
| *Demographic Subgroup* | *%* | *95% CI* | *%* | *95% CI* | *%* | *95% CI* | *%* | *95% CI* |
| Males Overall | 18.4 | (16.6, 20.3) | 9.3 | (8.0, 10.8) | 2.1 | (1.5, 3.0) | 0.6 | (0.3, 0.9) |
| Age group: 45-54 years | 19.0 | (15.7, 22.7) | 6.7 | (4.8, 9.2) | 1.8 | (0.9, 3.6) | 0.5 | (0.2, 1.2) |
| Age group: 55-64 years | 21.6 | (18.0, 25.8) | 9.4 | (7.1, 12.4) | 2.7 | (1.5, 4.7) | 0.0 |  |
| Age group: 65-74 years | 13.9 | (10.9, 17.6) | 12.5 | (9.8, 15.8) | 0.7 | (0.3, 1.5) | 1.5 | (0.8, 2.8) |
| Age group: ≥ 75 years | 17.2 | (12.7, 23.0) | 10.9 | (6.7, 17.1) | 5.5 | (3.3, 9.1) | 0.0 |  |
| Race: Caucasian | 18.7 | (16.7, 20.8) | 9.4 | (8.0, 11.2) | 2.2 | (1.5, 3.1) | 0.6 | (0.3, 1.0) |
| Race: African-American | 16.5 | (13.2, 20.4) | 8.4 | (6.0, 11.6) | 2.0 | (1.2, 3.3) | 0.4 | (0.2, 1.1) |
| BMI group underweight: < 18.5 kg/m2 | 34.5 | (13.7, 63.7) | 38.9 | (11.6, 75.6) | 0.0 |  | 0.0 |  |
| BMI group normal: 18.5 - 24.9 kg/m2 | 18.1 | (14.6, 22.3) | 12.8 | (9.8, 16.5) | 3.5 | (2.5, 5.1) | 0.7 | (0.2, 2.2) |
| BMI group overweight: 25.0 - 29.9 kg/m2 | 16.8 | (14.2, 19.7) | 7.5 | (5.9, 9.6) | 2.2 | (1.3, 3.6) | 0.6 | (0.3, 1.1) |
| BMI group obese: ≥ 30.0 kg/m2 | 21.0 | (17.1, 25.6) | 8.8 | (6.4, 11.9) | 1.1 | (0.3, 3.5) | 0.4 | (0.1, 1.0) |
| Females Overall | 7.3 | (6.2, 8.7) | 2.5 | (2.0, 3.1) | 0.1 | (0.1, 0.2) | 0.2 | (0.0, 0.9) |
| Age group: 50-54 years | 6.8 | (4.9, 9.3) | 2.6 | (1.4, 4.8) | 0.0 |  | 1.0 | (0.2, 4.2) |
| Age group: 55-64 years | 6.8 | (5.0, 9.0) | 2.1 | (1.5, 2.9) | 0.1 | (0.0, 0.4) | 0.0 |  |
| Age group: 65-74 years | 8.2 | (6.2, 10.7) | 2.4 | (1.6, 3.4) | 0.2 | (0.1, 0.5) | 0.0 |  |
| Age group: ≥ 75 years | 7.5 | (4.6, 12.0) | 3.6 | (2.2, 5.7) | 0.0 |  | 0.0 |  |
| Race: Caucasian | 7.4 | (6.0, 9.0) | 2.2 | (1.7, 2.9) | 0.1 | (0.0, 0.2) | 0.2 | (0.1, 1.1) |
| Race: African-American | 7.2 | (5.3, 9.7) | 3.6 | (2.7, 4.9) | 0.3 | (0.1, 0.8) | 0.0 |  |
| BMI group underweight: < 18.5 kg/m2 | 16.1 | (4.9, 41.5) | 0.0 |  | 0.0 |  | 0.0 |  |
| BMI group normal: 18.5 - 24.9 kg/m2 | 5.6 | (4.1, 7.7) | 2.4 | (1.3, 4.3) | 0.0 |  | 0.8 | (0.2, 3.5) |
| BMI group overweight: 25.0 - 29.9 kg/m2 | 7.4 | (5.6, 9.6) | 2.9 | (2.1, 3.8) | 0.1 | (0.0, 0.4) | 0.0 |  |
| BMI group obese: ≥ 30.0 kg/m2 | 8.5 | (6.6, 10.8) | 2.2 | (1.5, 3.1) | 0.2 | (0.1, 0.4) | 0.0 |  |

*\* Weighted to the 1990 target population; Radiographic data were available for women only 50 years of age or older; BMI values for 10 participants are missing; no data for AP alpha angle or triangular index in 4 participants*

**Table 3. Weighted and sex-stratified prevalence estimates of pincer morphologies among those with normal pelvic alignment and no rHOA (n=1601)\***

|  |  |  |  |
| --- | --- | --- | --- |
|  | *LCEA ≤ 25 degrees* | *LCEA > 40 degrees* | *Protrusio acetabula* |
|  | *Unilateral* | *Bilateral* | *Unilateral* | *Bilateral* | *Unilateral* | *Bilateral* |
| *Demographic Subgroup* | *%* | *95% CI* | *%* | *95% CI* | *%* | *95% CI* | *%* | *95% CI* | *%* | *95% CI* | *%* | *95% CI* |
| Males Overall | 22.0 | (19.3, 24.9) | 15.4 | (13.6, 17.4) | 4.4 | (3.4, 5.6) | 2.2 | (1.4, 3.4) | 0.3 | (0.2, 0.6) | 0.1 | (0.1, 0.3) |
| Age group: 45-54 years | 24.6 | (20.1, 29.7) | 19.9 | (16.1, 24.3) | 2.0 | (1.1, 3.8) | 0.8 | (0.4, 1.9) | 0.0 |  | 0.0 |  |
| Age group: 55-64 years | 19.0 | (14.8, 24.1) | 14.5 | (11.5, 18.3) | 4.9 | (3.3, 7.3) | 2.8 | (1.3, 5.9) | 0.3 | (0.1, 0.9) | 0.0 |  |
| Age group: 65-74 years | 25.3 | (20.9, 30.3) | 9.9 | (7.2, 13.7) | 6.0 | (4.1, 8.7) | 4.4 | (2.8, 6.8) | 1.0 | (0.5, 1.8) | 0.4 | (0.1, 0.9) |
| Age group: ≥ 75 years | 12.3 | (8.1, 18.3) | 14.5 | (9.4, 21.8) | 7.8 | (4.2, 14.0) | 0.0 |  | 0.0 |  | 0.7 | (0.3, 1.5) |
| Race: Caucasian | 22.6 | (19.6, 26.0) | 14.8 | (12.8, 17.1) | 4.5 | (3.4, 5.9) | 2.3 | (1.4, 3.6) | 0.0 |  | 0.0 |  |
| Race: African-American | 18.0 | (13.9, 22.9) | 19.3 | (15.5, 23.7) | 3.8 | (2.5, 5.8) | 1.9 | (1.1, 3.4) | 2.2 | (1.1, 4.3) | 1.1 | (0.6, 1.9) |
| BMI group underweight: < 18.5 kg/m2 | 0.0 | (., .) | 34.5 | (13.7, 63.7) | 12.3 | (4.7, 28.4) | 0.0 |  | 0.0 |  | 0.0 |  |
| BMI group normal: 18.5 - 24.9 kg/m2 | 21.0 | (17.1, 25.5) | 16.8 | (13.0, 21.5) | 8.2 | (5.3, 12.3) | 0.8 | (0.4, 1.4) | 0.7 | (0.3, 1.6) | 0.4 | (0.2, 0.9) |
| BMI group overweight: 25.0 - 29.9 kg/m2 | 20.8 | (17.4, 24.8) | 17.2 | (14.3, 20.5) | 2.7 | (1.8, 4.1) | 2.2 | (1.3, 3.8) | 0.3 | (0.1, 1.0) | 0.1 | (0.1, 0.3) |
| BMI group obese: ≥ 30.0 kg/m2 | 25.2 | (18.7, 33.0) | 10.9 | (7.9, 14.8) | 4.1 | (2.5, 6.5) | 3.4 | (1.6, 6.9) | 0.0 |  | 0.0 |  |
| Females Overall | 17.8 | (15.8, 19.9) | 14.6 | (13.1, 16.3) | 5.5 | (4.5, 6.7) | 4.4 | (3.3, 5.9) | 6.0 | (4.9, 7.3) | 1.3 | (0.9, 1.9) |
| Age group: 50-54 years | 17.4 | (13.5, 22.0) | 23.6 | (19.5, 28.2) | 3.5 | (2.1, 6.0) | 2.7 | (1.4, 5.2) | 3.7 | (2.3, 5.9) | 0.3 | (0.2, 0.7) |
| Age group: 55-64 years | 19.7 | (16.8, 23.1) | 16.3 | (13.7, 19.1) | 4.0 | (2.8, 5.7) | 4.1 | (2.7, 6.2) | 4.8 | (3.5, 6.4) | 1.3 | (0.7, 2.5) |
| Age group: 65-74 years | 18.3 | (15.0, 22.1) | 9.4 | (7.1, 12.4) | 6.9 | (5.1, 9.4) | 6.0 | (3.6, 9.9) | 8.1 | (5.8, 11.3) | 1.3 | (0.6, 2.8) |
| Age group: ≥ 75 years | 12.4 | (8.4, 17.8) | 9.9 | (6.6, 14.7) | 8.6 | (5.9, 12.5) | 3.8 | (2.2, 6.4) | 7.0 | (4.2, 11.3) | 2.9 | (1.8, 4.7) |
| Race: Caucasian | 18.3 | (16.0, 20.8) | 14.5 | (12.8, 16.4) | 5.3 | (4.2, 6.6) | 4.7 | (3.4, 6.4) | 4.8 | (3.7, 6.2) | 0.5 | (0.2, 1.1) |
| Race: African-American | 15.3 | (12.5, 18.6) | 15.2 | (12.6, 18.2) | 6.6 | (5.3, 8.2) | 3.4 | (2.3, 5.0) | 11.4 | (9.1, 14.1) | 5.2 | (3.8, 7.2) |
| BMI group underweight: < 18.5 kg/m2 | 16.1 | (4.9, 41.5) | 48.6 | (21.8, 76.2) | 25.7 | (8.7, 55.6) | 0.0 |  | 0.0 |  | 0.0 |  |
| BMI group normal: 18.5 - 24.9 kg/m2 | 20.5 | (16.6, 25.2) | 17.6 | (14.1, 21.7) | 7.8 | (5.7, 10.7) | 3.7 | (2.2, 6.1) | 6.5 | (4.4, 9.5) | 1.4 | (0.9, 2.3) |
| BMI group overweight: 25.0 - 29.9 kg/m2 | 17.9 | (15.3, 20.9) | 11.9 | (9.7, 14.5) | 5.8 | (4.1, 8.2) | 4.8 | (3.3, 7.1) | 5.4 | (3.9, 7.4) | 0.6 | (0.4, 0.9) |
| BMI group obese: ≥ 30.0 kg/m2 | 15.7 | (13.1, 18.7) | 14.8 | (12.4, 17.5) | 3.2 | (2.2, 4.7) | 4.4 | (2.8, 6.7) | 6.1 | (4.4, 8.4) | 2.1 | (1.2, 3.7) |

*\* Weighted to the 1990 target population; Radiographic data were available for women only 50 years of age or older; BMI values for 10 participants are missing; no data for LCEA in 1 participant, missing protrusio for 15 participants*

**Table 4. Weighted and sex-stratified prevalence estimates of mixed cam and pincer morphologies among those with normal pelvic alignment and no rHOA (n=1601)\***

|  |  |
| --- | --- |
|  | *Cam and Pincer* |
| *Demographic Subgroup* | *%* | *95% CI* |
| Males Overall | 1.6 | (1.1, 2.2) |
| Age group: 45-54 years | 0.5 | (0.1, 1.6) |
| Age group: 55-64 years | 2.4 | (1.3, 4.3) |
| Age group: 65-74 years | 2.1 | (1.3, 3.4) |
| Age group: ≥ 75 years | 1.8 | (0.6, 5.4) |
| Race: Caucasian | 1.5 | (1.0, 2.3) |
| Race: African-American | 1.7 | (0.9, 3.2) |
| BMI group underweight: < 18.5 kg/m2 | 0.0 |  |
| BMI group normal: 18.5 - 24.9 kg/m2 | 0.5 | (0.3, 1.2) |
| BMI group overweight: 25.0 - 29.9 kg/m2 | 1.4 | (0.9, 2.1) |
| BMI group obese: ≥ 30.0 kg/m2 | 2.7 | (1.4, 4.8) |
| Females Overall | 2.3 | (1.6, 3.2) |
| Age group: 50-54 years | 0.6 | (0.3, 1.2) |
| Age group: 55-64 years | 1.6 | (0.9, 3.0) |
| Age group: 65-74 years | 3.2 | (1.8, 5.4) |
| Age group: ≥ 75 years | 4.3 | (2.0, 8.7) |
| Race: Caucasian | 2.1 | (1.4, 3.2) |
| Race: African-American | 3.1 | (1.8, 5.1) |
| BMI group underweight: < 18.5 kg/m2 | 0.0 |  |
| BMI group normal: 18.5 - 24.9 kg/m2 | 2.0 | (1.1, 3.7) |
| BMI group overweight: 25.0 - 29.9 kg/m2 | 2.1 | (1.1, 4.2) |
| BMI group obese: ≥ 30.0 kg/m2 | 2.7 | (1.7, 4.4) |

*\* Weighted to the 1990 target population; Radiographic data were available for women only 50 years of age or older; Values for 4 participants are missing; Mixed cam and pincer defined as any cam (either AP alpha angle greater than 60 degrees or presence of triangular index sign) and any pincer (either LCEA greater than 40 degrees or protrusio acetabuli)*