

Bone & Joint Research

Supplementary Material

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Several studies reported on the sex distribution by age of the reported spinopelvic parameters. These studies were used for a statistical evaluation of the distribution of gender by age to assess the confounding effect of sex. All the studies that reported outcomes by sex and age categories were combined, and a chi-squared trend test was performed, producing a p-value of 0.138. This statistical analysis identified that sex had no confounding effect on the statistical values.

Table i. Asai et al:¹ calculation of the proportion of females across age to assess for any confounding effect due to sex.

Age Groups	Total Participants	Female Participants	Female %
<49	170	114	67.1%
55	256	181	70.7%
65	418	294	70.3%
75	407	284	69.8%
80	210	122	58.1%

Table ii. Uehara et al:² calculation of the proportion of females across age to assess for any confounding effect due to sex.

Age Groups	Total Participants	Female Participants	Female %
50	97	47	48.5%
60	114	61	53.5%
70	109	54	49.5%
80	93	48	51.6%

Table iii. Oe et al:³ calculation of the proportion of females across age to assess for any confounding effect due to sex.

Age Groups	Total Participants	Female Participants	Female %
65	75	49	65.3%
75	123	88	71.5%
85	39	20	51.3%

Table iv. Yukawa et al:⁴ calculation of the proportion of females across age to assess for any confounding effect due to sex.

Age Groups	Total Participants	Female Participants	Female %
25	101	53	52.5%
35	101	50	49.5%
45	107	57	53.3%
55	107	51	47.7%
65	110	60	54.5%
75	100	50	50.0%

Table v. Oe et al:⁵ calculation of the proportion of females across age to assess for any confounding effect due to sex.

Age Groups	Total Participants	Female Participants	Female %
55	36	22	61.1%
65	174	101	58.0%
75	311	203	65.3%
85	135	67	49.6%

Table vi. Machino et al:⁶ calculation of the proportion of females across age to assess for any confounding effect due to sex.

Age Groups	Total Participants	Female Participants	Female %
45	50	35	70.0%
55	73	52	71.2%
65	180	103	57.2%
75	145	74	51.0%

Table vii. Hu et al:⁷ calculation of the proportion of females across age to assess for any confounding effect due to sex.

Age Groups	Total Participants	Female Participants	Female %
25	86	46	53.5%
35	81	41	50.6%
45	82	42	51.2%
55	86	45	52.3%
65	84	44	52.4%
75	81	40	49.4%
85	84	44	52.4%

References

1. Asai Y, Tsutsui S, Oka H, et al. Sagittal spino-pelvic alignment in adults: The Wakayama Spine Study. *PLoS One*. 2017;12(6):e0178697.
2. Uehara M, Takahashi J, Ikegami S, et al. Sagittal spinal alignment deviation in the general elderly population: a Japanese cohort survey randomly sampled from a basic resident registry. *Spine J*. 2019;19(2):349–356.
3. Oe S, Yamato Y, Hasegawa T, et al. Deterioration of sagittal spinal alignment with age originates from the pelvis not the lumbar spine: a 4-year longitudinal cohort study. *Eur Spine J*. 2020;29(9):2329–2339.
4. Yukawa Y, Kato F, Suda K, Yamagata M, Ueta T, Yoshida M. Normative data for parameters of sagittal spinal alignment in healthy subjects: an analysis of gender specific differences and changes with aging in 626 asymptomatic individuals. *Eur Spine J*. 2018;27(2):426–432.
5. Oe S, Togawa D, Nakai K, et al. The influence of age and sex on cervical spinal alignment among volunteers aged over 50. *Spine (Phila Pa 1976)*. 2015;40(19):1487–1494.
6. Machino M, Ando K, Kobayashi K, et al. Differences of lumbopelvic sagittal parameters among community-dwelling middle-age and elderly individuals: Relations with locomotor physical function. *J Clin Neurosci*. 2020;73:80–84.
7. Hu Z, Man GCW, Yeung KH, et al. 2020 Young Investigator Award Winner: Age and sex-related normative value of whole-body sagittal alignment based on 584 asymptomatic Chinese adult population from age 20 to 89. *Spine (Phila Pa 1976)*. 2020;45(2):79–87.