



Understanding Dietary Calcium Intake and Bone Health in the Chinese and Hispanic Populations of St. Louis

SCHOOL OF PHARMACY

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BACKGROUND

- Projected to reach \$25.3 billion this year in osteoporosis-related fracture costs
- Hispanic and Chinese populations in St. Louis make up 2.2% and 0.6% of the total population, respectively
- Dietary habits may contribute to differences in bone health

METHODS

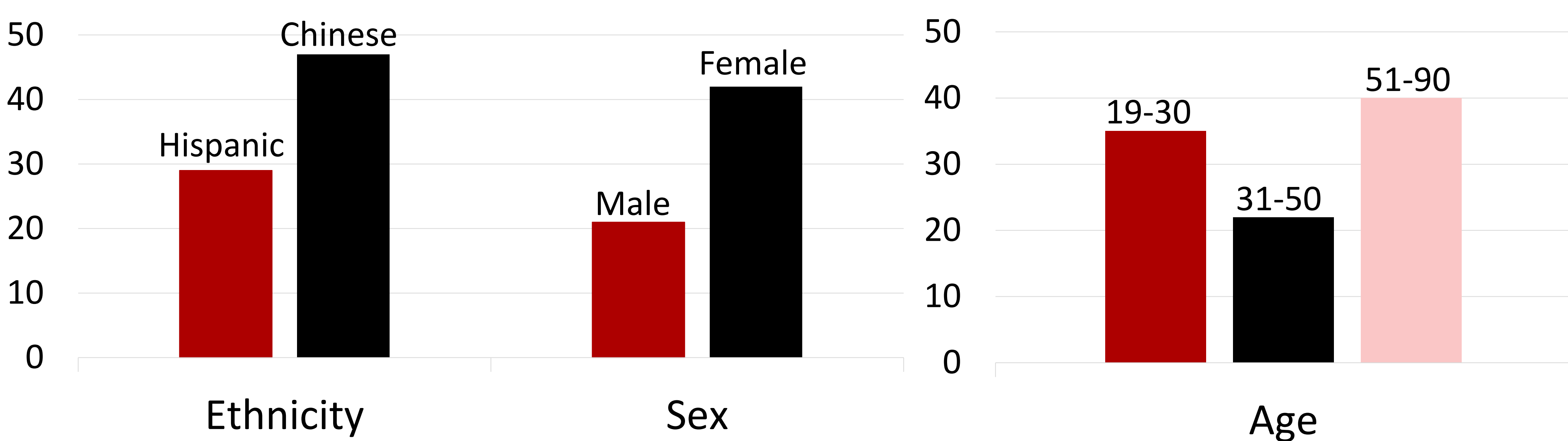
- **Data Collection:**
 - Conducted at Health Protection & Education Services (HPES) in St. Louis
 - Three years of DXA scan data (2022-2024) from Hispanic and Chinese participants were analyzed
 - 63 participants completed a calcium intake survey, with 45 included in the final analysis
- **Data analysis**
 - T-score data from DXA scans were analyzed based on AACE/ACE guidelines
 - Mean T-scores for each year were compared between the two populations
 - Compliance with recommended daily calcium intake was assessed, further stratified by age and sex

RESULTS

- **Primary Outcome:**
 - Mean T-scores for Hispanic participants were consistently higher than those of Chinese participants
 - A significant difference in bone density was found between the two populations ($p < 0.001$)

Year	Hispanic Mean T-Score	Chinese Mean T-Score	p-value
2022	-0.111	-1.008	< 0.001
2023	-0.153	-1.253	< 0.001
2024	-0.155	-1.203	< 0.001

- **Secondary Outcomes:**
 - Compliance with calcium intake recommendations was 29% among Hispanic participants and 47% among Chinese participants ($p = 0.209$)
 - Compliance rates by sex: 21% for males, 42% for females ($p = 0.183$)
 - Compliance rates by age: 35% (19-30 years), 22% (31-50 years), 40% (51-90 years) ($p = 0.615$)



LIMITATIONS

- Small sample size
- Self-reported dietary intake
- Convenience sampling at a single clinic
- Does not account for additional factors

PHARMACIST IMPLICATIONS

- Counsel on osteoporosis prevention in at-risk populations
- Culturally tailor patient education on calcium-rich foods
- Break language barriers with multilingual educational material
- Integrate calcium intake assessments into medication therapy management (MTM)

CONCLUSION

- Despite the Chinese population having lower T-scores, they had higher compliance rates for daily calcium intake
- Further research is needed to explore additional factors affecting bone health