

Utilization of a Peripheral Ultrasound Bone Density Scanner to Screen at Risk Patients for Osteoporosis during Pharmacist-led Wellness Clinics

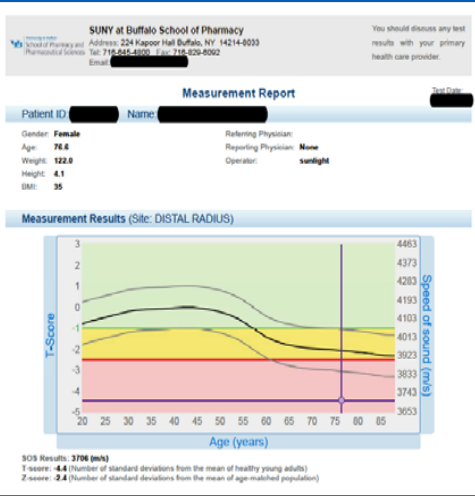
Peter Brody, PharmD, Mary Hejna, PharmD Cand. 2020, Jessica Mason, PharmD Cand. 2020, Miranda Graham, PharmD Cand. 2020, Jessica Micceri, PharmD Cand. 2020, Bryan Quinn PharmD Cand. 2020, Roksolana Lypka, PharmD Cand. 2021, Henry Wilson, PharmD Cand. 2020, Robert G. Wahler, Jr., PharmD, BCGP, FASCP, CPE.

Introduction

- Falls are the leading cause of morbidity and mortality among U.S. residents aged ≥ 65 years. In 2016 alone, there were a total of 29,668 older adults who died as a result of a fall.¹
- Fracture risk can be estimated by measuring bone mineral density (BMD) and looking at other risk factors, such as medications the patients are taking.²
- Students pharmacists provided a free community-based intervention using a non-invasive bone density measurement method to convey T-scores. This allowed the student pharmacists to better educate participants about the potential risks associated with their individual scores.

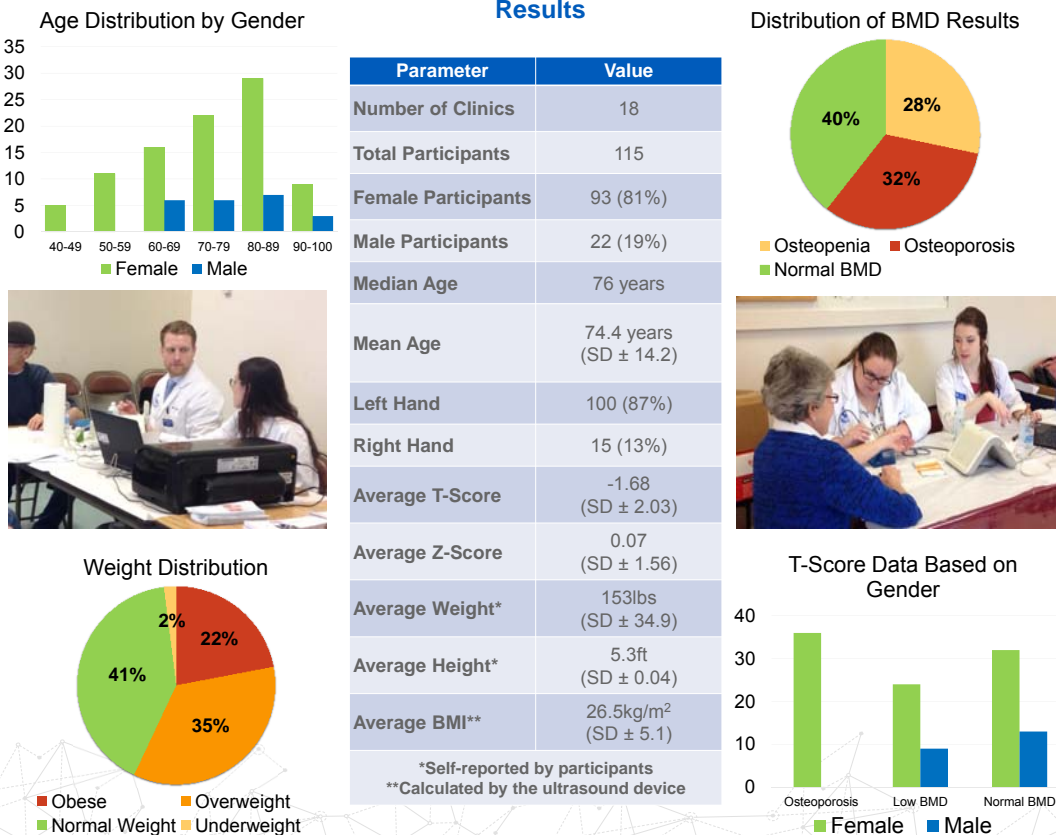
Objective

- Describe the Bone Density Screening Service and preliminary descriptive data from 2 years of wellness clinics provided by supervised student pharmacists.



Methods

- From 2016 to 2018, student pharmacists used a MiniOmni ultrasound peripheral bone density scanner to obtain and interpret bone density data for 115 patient volunteers at local senior centers in Western New York.
- Each patient was seated, briefly provided demographic information, and an ultrasound scan was performed on the distal radius of their non-dominant arm.
- The ultrasound results provided T-scores, which compare an individual's bone density to that of a healthy 30-year old, and indicate whether the patient has a normal bone density, or whether he/she is at risk of osteopenia or osteoporosis (OP). T-scores from -1.0 and -2.4 are considered osteopenia, while any T-score -2.5 or lower is considered osteoporosis.³
- Participants found to have osteopenic or osteoporotic T-scores were counseled about the meaning of their scores and referred to their physicians for follow-up.



Discussion

- On average, only 56% of physicians screen their patients for osteoporosis. This shows a large unmet need for osteoporosis screening.⁴
- Early detection of low bone mineral density can lead to the provision of treatment, which can prevent costly accidental falls, hip fractures, and hospitalizations.¹
- Pharmacist-led screenings similar to those conducted in this project can help improve screening rates for low BMD.
- Distribution of the bone mineral density findings revealed that 60% of the participants had T-scores reflecting either osteopenia or osteoporosis. These results suggest that participants had a lower bone mineral density.
- The methods of this project can be replicated to increase screening rates in community members that are eligible. However, the business model including an economic analysis needs to be completed.
- In the future, it would enhance the project to collect additional screening data, including smoking status, ethnicity, and time since menopause. This information would help relate T-scores in terms of patient-specific risk factors.
- When comparing our data to the CDC in regards to osteoporosis diagnosis in patients who are 65 or older, there was a substantial increase of 28% for the female population but a 5% decrease for the male population

Conclusions

- Student Pharmacist-led bone density screening identified nearly 61% of participants with T -scores indicating a risk of low bone mineral density necessitating further evaluation.
- Future projects will follow participants to evaluate confirmation of OP diagnosis and initiation of both pharmacological and non - pharmacological treatment interventions.

References

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