ABSTRACT OF THE PROBLEM:

Osteoporosis is a major public health concern with significant clinical and socioeconomic impact, particularly among postmenopausal women. Globally, more than 200 million people are affected by osteoporosis, and fracture incidence is projected to increase by 50% by 2025, contributing to an annual economic burden of nearly USD 25 billion. Epidemiological evidence shows that 1 in 3 women and 1 in 5 men over the age of 50 will experience an osteoporosis-related fracture during their lifetime. In India alone, approximately 61 million individuals are estimated to suffer from osteoporosis, with nearly 80% of those affected being women. Despite this high prevalence, awareness levels remain critically low at only 10–12%, resulting in late diagnosis and limited preventive intervention. Access to bone health assessment is severely constrained by inadequate diagnostic infrastructure, with only 0.26 bone density assessment units per million population available against a recommended 10.6 units per million, representing a shortfall of over 40 times, particularly affecting rural and semi-urban regions. Osteoporosis-related fractures—especially hip and spinal fractures—are associated with high morbidity, long-term disability, loss of independence, and increased mortality among older adults, placing a substantial financial burden on families and the public healthcare system. With India's ageing population and increasing life expectancy, the prevalence and impact of osteoporosis are expected to rise further, underscoring an urgent unmet need for scalable, accessible, and population-level bone health assessment mechanisms to support early identification, risk stratification, and preventive healthcare planning.