

ABSTRACT

Osteoporosis is a skeletal disorder where bones become porous and weak leading to fractures. Though it occurs both in masculine and feminine gender, it is predominant among women in their menopausal stage. The prevalence of Osteoporosis is on the rise. To manage the increased prevalence rate, the study was conceived and carried out with the following objectives i.e assess the risk factors associated with osteoporosis among selected adult women, formulation of egg shell calcite powder and determination of its characteristics, to develop calcite incorporated recipes and to create awareness on calcite and its role in the prevention and management of osteoporosis. A well-structured interview schedule was developed to collect data from all the 1036 subjects. A pilot study on 60 subjects using three different osteoporosis risk estimation tools revealed that ORAI tool (Osteoporosis Risk Assessment Instrument) returned the closest results to the actual BMD measurements done on the subjects. Hence ORAI was chosen as the preferred tool to assess the Osteoporosis risk of the larger subject group. Out of the 1036 subjects, 678 were at risk of Osteoporosis. Of these 678 subjects, 416 were selected as subsample based on the inclusion criteria towards the actual BMD assessment and awareness creation. The gathered data were analysed through SPSS (Statistical Package for Social Sciences). Egg shell calcite powder was developed and 50 recipes were formulated incorporating the egg shell calcite powder and subjected to organoleptic evaluation. Among all the recipes prepared calcite powder was most significant ingredient contributing calcium. Osteoporosis awareness was created to the selected subjects. The knowledge level of the subjects had the most significant association with the risk of onset of osteoporosis followed by their physical activity level, age, calcium intake and finally exposure to sunlight in that order. The study revealed that there was a significant improvement in the knowledge level of the subjects after the awareness sessions were conducted. Calcite powder extracted out of egg shell serves as an economical as well as a dense source of calcium aiding bone health.