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Dietary patterns and bone mineral density among long term users of depot medroxyprogesterone acetate compared to non hormonal contraceptive users, Kampala- Uganda

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Introduction: Depot medroxyprogesterone acetate (DMPA) use is greatly associated with decline in bone mineral density (BMD). Although the role of individual nutrients on bone health has been well elucidated, no study among African women has analyzed the dietary patterns associated with BMD among DMPA users who are at a higher risk of bone loss. The aim of this study was to determine whether certain dietary patterns are associated with low BMD of the lumbar spine (LS) among DMPA users and non-hormonal contraceptive users in a group of African women.

Methods: We conducted a comparative observational study among 151 women recruited from three family planning clinics in Kampala of whom 100 were DMPA users and 51 were non hormonal contraceptive users. Socio demographic, clinical and dietary intake data were collected using pretested questionnaires. Dietary patterns were derived using principal component analysis (PCA). The association between dietary patterns and LS BMD was investigated using multivariate logistic regression.

Results: LS BMD was classified as low and normal; where low represented osteopenia and osteoporosis. The prevalence of low LS BMD among DMPA users and non-hormonal users was 52.0% and 35.3% respectively. Four dietary patterns were derived: the bread, cereal and milk (BCM) pattern, plant and animal protein pattern, fruit and vegetable pattern and the traditional Ugandan pattern. After adjustment for potential confounders, low consumption of the BCM pattern was associated with higher odds of low LS BMD among DMPA users (AOR: 10.6, CI: 2.00, 56.73; $p=0.006$) and not in non-hormonal contraceptive users. We found no significant association between the other dietary patterns and low LS BMD.

Conclusion: Low LS BMD is highly prevalent in DMPA users. However, increased consumption of bread, cereals and milk could ameliorate the effects of bone loss in the lumbar spine among women who use DMPA.

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