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**Mineral deficiency and undernutrition are keys clinical hallmark to elaborate appropriate interventional strategies in rural area: A Cameroonian study on women of childbearing age**

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**Background:** Malnutrition in terms of over nutrition and undernutrition, especially deficiencies in key neglected minerals is still a serious public health issue in Cameroon. The aim of this study was to assess the prevalence of various forms of malnutrition among women of childbearing age so as to propose interventional strategies.

**Method:** This was a cross sectional study during which women aged 14-49 years were randomly selected from the political capital city of the country (Yaounde), the littoral, the western, north-west and north regions of the country. Anthropometric, socio-demographic parameters and data on dietary habits were collected. Blood samples were also collected for the analysis of plasma level calcium, magnesium and iron.

**Results:** The sample consisted of 608 women of childbearing age with average age of  $34.68 \pm 0.39$  years. The evaluation of the prevalence of the various forms of malnutrition revealed that, underweight was 2.1%, overweight 29.9%, obesity 37.3%, iron, magnesium and calcium deficiencies were 11.5%, 22.4% and 48.3% respectively. All the forms of malnutrition increased with age with the 31-40 and 41-49 years age groups recording the highest rates. The northwest and the western regions presented the highest

prevalence of all the forms of malnutrition. Higher prevalence of Mg (25.8%) and Ca (22.3%) deficiencies were associated to women with no educational level. Overweight (26.2%) and obesity (27.4%) were highest among those with a primary level and Fe deficiency (27.6%) among those with a first cycle level of education. With respect to the profession and marital status, housewives and married women presented the highest numbers of Ca deficiency. The low intakes of most food groups (pulses and beans; milk and dairy products; vegetables; fruits) were associated to higher rates of all the forms of malnutrition especially Ca deficiency. Plasma Ca concentration was strongly correlated to the frequent intake of traditional diets in a week ( $r=0.129$ ,  $p=0.008$ ).

**Conclusion:** All the forms of malnutrition were present in the study population but Ca deficiency was the most prevalent form. Therefore strategies aiming at reducing the rates of Ca and Mg deficiencies such as bio-fortification, reduction of anti-nutrients in potential food sources, dietary diversification, nutritional education are warranted; especially among women of childbearing in Cameroon so as to prevent their future probable exposure to non-communicable diseases such as osteoporosis caused by such deficiencies.

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