

# DENTAL CARIES STATUS OF 5-7 YEAR OLD CHILDREN IN THREE DISTRICTS IN TANZANIA, UGANDA AND MOZAMBIQUE

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## INTRODUCTION

The introduction of macro-economic strategies such as Structural Adjustment Programmes (SAPs) are often regarded as the panacea for all the economic and social problems confronting the debt- and poverty-ridden developing countries of the world. Whilst apparently successful in achieving debt repayments, in the short term, their social impact in those countries which are already poor and impoverished are less favourable. Worsening of the socio-economic status of certain poor urban and rural communities has been widely reported and this has led to a deterioration in their health status (1, 2, 3, 4, 5). The impact of macro-economic changes on the oral health status in countries implementing this economic strategy has, to our knowledge, not been investigated.

The macro-economic changes imposed by the International Monetary Fund and World Bank, have increased the prevalence of malnutrition, especially amongst children. Malnutrition has been shown to affect the development of teeth and adversely affect the prognosis of dental caries and periodontal conditions (6, 7, 8). Malnutrition furthermore depletes the defence mechanisms, which intensify conditions such as Acute Necrotising Ulcerative Gingivitis, and it's often fatal complication known as Cancrum Oris or Noma (9). Reduced coverage of immunisation programmes further exacerbates the already precarious situation in which many children find themselves.

Oral health status studies in east African countries generally show that the prevalence is low but wide-

spread and possibly increasing due to increasing exposure to the determinants of caries (10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20).

This paper presents baseline dental caries data of a study assessing the impact of Structural Adjustment Programmes (SAPs) on the oral health status of 5-7 year-old children in Tanzania, Uganda and Mozambique. These particular data are being presented now because there are so few comparable data available for the southern African region which is going through an intense period of socio-economic change, which is likely to impact on oral health, particularly that of young children. Tentative conclusions are suggested on the impact of SAPs on oral health.

## METHOD

The methodology of the study has been described in a previous publication (21). In the determination of the dmft, the m-component was recorded only for the canines and molars. Data on the permanent dentition are not presented because there were very few children with decayed or missing permanent teeth. The mean DMFT score for the entire sample was 0.088 with 4 % of the sample experiencing decay of the permanent dentition. The ethics committees of Medical Research Council (South Africa), Faculty of Dentistry of University of the Western Cape as well as the relevant health authorities and research units in Tanzania, Uganda and Mozambique approved the project protocol. The consent of the school authorities was also obtained.

## RESULTS

The demography of the sample has been described elsewhere (21). Table 1 shows that caries-free status (dmft = 0) differs between countries and locations. The overall caries-free percentage of the total sample was 39%. In Tanzania the caries-free percentage was highest in the formal urban children (42%). In Uganda, it was highest in the rural location (53%). In Mozambique it was high in all three locations, with again the rural population being the highest of all (55 %).

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## Dental caries status...

**Table 1: Percentage caries-free by country and location**

Location	Tanzania	Uganda	Mozambique
Formal Urban	42	42	44
Informal Urban	34	30	53
Rural	30	53	55
Overall	35	41	50

The overall dmft for the entire sample was 2.4 (SD 2.8), with the decayed component being 2.0 and the missing component 0.4. Only three children had filled teeth. Table 2 shows that the overall dmft was significantly higher ( $p$ -value < 0.05) in Tanzania and Uganda compared to Mozambique. The missing component in Uganda was significantly higher. This was due to the significantly higher number of missing primary canine teeth, especially in the informal urban children. In Uganda 17% of the sample had 1 or more missing primary canine teeth. In Tanzania and Mozambique this figure was 2% and 1% respectively. The overall mean dmft in Uganda decreased to 2.2 (from 2.8) when children with missing primary canines were excluded from the analysis. The missing component in the urban informal sample decreased to 0.3 (from 1.2). The decrease in the other two countries was not significant. Table 2 also shows significant differences between locations in Uganda and Mozambique. The highest mean dmft scores were found in the informal urban and rural locations in Uganda (3.3). The lowest mean dmft scores were found in rural (1.0) and informal urban (1.3) locations in Mozambique. The decayed component constituted the major proportion of the dmft in all the locations and countries.

**Table 2 : Mean dmft, decayed and missing scores by country and location (standard error)**

	Location	Tanzania	Uganda	Mozambique
dmft	Formal Urban	2.4	1.9	2.2 J
	Informal Urban	2.9	3.3	1.3
	Rural	1.5	3.3	1.0
	Overall	2.6 (0.2)	1.8 (0.2)	1.6 (0.1)
decayed	Formal Urban	2.31	1.1	2.1
	Informal Urban	2.7	2.1	1.3
	Rural	2.3	2.6	0.8
	Overall	2.5(0.2)	2.0 (0.1)	1.5 (0.1)
missing	Formal Urban	0.08	0.8	0.1
	Informal Urban	0.2	1.2	0.2
	Rural	0.2	0.6	0.1
	Overall	0.15 (0,01)	0.8 (0,08)	0.08 (0,03)

**DISCUSSION**

This study provides valuable comparative information on the oral health status of 5-7 year old children in the three districts in these countries. The mean dmft scores are higher in Uganda and Tanzania and lower in Mozambique compared to previous studies (11, 12, 13, 14, 15, 16, 17, 18, 19, 20). As in these studies the decayed component comprised the major proportion of the dmft index.

The unmet need is high in all the locations in all the countries. The caries-free percentage is generally lower compared to studies carried out prior to, and early after the implementation (mid to late 1980's) of SAPs. The caries-free percentage and mean dmft comparisons across locations are not consistent. The informal urban children generally are worst off in terms of caries-free percentage and mean dmft scores. This may be due to increased exposure to the determinants of dental caries such as sugar and a lack of access to caries preventive measures such as fluoridated toothpaste.

The traditional practice of removing «nylon teeth» (primary canine tooth buds) for diarrhoea and a range of childhood diseases continues to occur, particularly in Uganda (22). There is thus a urgent need to discourage this unnecessary, and potentially dangerous, traditional practice, as a number of deaths from haemorrhage and septicaemia have been reported.

The prevalence of dental caries appears to have increased especially in Tanzania and Uganda since the implementation of SAPs. A longitudinal study will however allow a more reliable and accurate impact of this macro-economic strategy on the oral health of 5-7 year old children. The prevalence of dental caries was not consistent across formal urban, informal urban and rural locations in the three countries studied. It is thus essential to disagree oral health status data to the most local level possible.

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## ABSTRACT

This paper presents the baseline data of a longitudinal study assessing the dental caries status of 5-7 year old children in Tanzania, Uganda and Mozambique. Approximately one hundred 5-7 year-old-children from randomly selected schools in each of three locations (formal urban, informal urban and rural) were examined using the 1997 WHO Oral Health Survey Criteria. Thirty nine percent of the entire sample were found to be caries-free, however this differed from location to location and from country to country. The overall mean dmft was 2.4 (SD 2.8), with the decayed component being 2.0 and the missing component 0.4. Of the children examined, only three had filled teeth. The mean dmft was significantly higher ( $p$ -value < 0.05) in Tanzania and Uganda than in Mozambique. There were also significant differences in the mean dmft between the various locations in Uganda and Mozambique. The prevalence of dental caries was not consistent across the formal urban, informal urban and rural locations in the three countries studied. It is thus essential to desegregate oral health status data to the most local level possible.

*Key-words : dental caries, epidemiology*

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