

# Prevalence of Vitamin D deficiency and its association with Diabetes Mellitus in a South-Asian population.

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## INTRODUCTION

Sri Lanka has been experiencing rapid urbanization, with approximately 30% of the population residing in urban areas.

We report the age and sex-specific prevalence of dysglycaemia and Vitamin D status, along with the association between the two in an urban community in Sri Lanka.

## METHODOLOGY

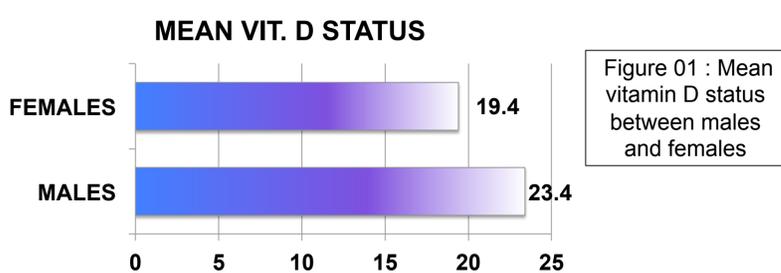
- Stratified random sampling method – 03 age strata
- 369 subjects (116 men; 253 women) aged 18 years and above, representative of all socio-economic strata
- All subjects were tested for 25-OH Vitamin D, 75g OGTT and HbA1c.
- Demographic, anthropometric, educational and social details were recorded using a standard proforma.

## RESULTS

### VITAMIN D

The age and sex adjusted prevalence of,

- **Vitamin D deficiency** **57.2%**  
( $<20$  ng/ml)
- **Vitamin D insufficiency** **31%**  
(20-30 ng/ml)
- **The cumulative prevalence of deficiency & insufficiency** **88.2%**.
- Highest prevalence in young adults (18-40 years) **64.2%**
- Significant prevalence in females (males 43%) **63.7%**( $p<0.000$ )

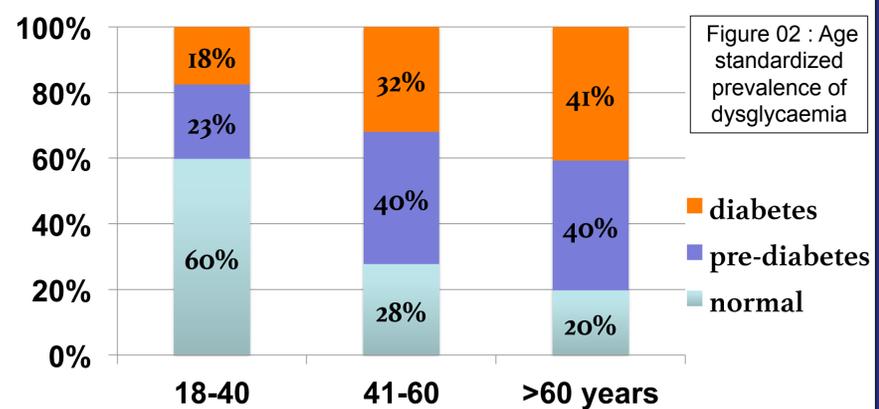


- Higher prevalence in Sinhalese ethnicity **62%**
- No significant difference in the income groups.

### DIABETES MELLITUS

The age and sex adjusted prevalence of,

- **Diabetes Mellitus** **26.9%**
- **Pre-Diabetes** **32.3%**
- **The cumulative prevalence of DM and pre-DM** **59.2%**



- 44% had undiagnosed Diabetes

Table 01: Methods used for the diagnosis of Diabetes.

HbA1c only	FPG only	OGTT only	HbA1c+ FPG	HbA1c+ OGTT	FPG +OGTT	All 3	total
17	0	3	5	15	1	8	49
35%	0	6%	10%	31%	2%	16%	100%

### ASSOCIATIONS

- Statistically significant association with female sex and Vitamin D deficiency. ( $p<0.01$ )
- Age and income status - no statistical correlation with the Vitamin D status.
- Vitamin D status did not show a statistically significant correlation to type-2 diabetes mellitus or pre Diabetes. ( $p=0.977$ ,  $p=0.972$ )

### CONCLUSION

- High prevalence of dysglycaemia, Vitamin D deficiency/insufficiency in urban Sri Lanka.
- Dysglycaemia was seen in half the population, with a large pool of subjects with pre-diabetes.
- Only 11.8% of the population was Vitamin D replete.
- Females had a significantly higher prevalence of Vitamin D deficiency.
- We could not detect a statistically significant correlation between Vitamin D deficiency and dysglycaemia.