

ABSTRACT

The Emergence of Obesity and Type 2 Diabetes in Primary and Secondary school Children in Trinidad, West Indies

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The aim of this thesis was to study the prevalence of type 2 diabetes mellitus (T2DM), its risk factors and other associations in order to inform approaches to control this emergent public health problem among Trinidadian school children. Using glycosuria as a screening tool and the oral glucose tolerance test as confirmatory, 67,000 children out of a total school population of 250,000 were screened, 23 were positive, 8 fulfilled criteria for diabetes and 5 for pre-diabetes according to American Diabetes Association. The per capita cost of screening was less than US \$ 1 and US \$ 4,286 for finding one case. The positive predictive value of finding a case of abnormal glucose tolerance by glycosuria screening was 62%. I then determined the prevalence of traditional risk factors for T2DM, including overweight/obesity, family history and acanthosis nigricans and an emergent risk factor viz., cognition in the school population. 43% had at least 1 risk factor for T2DM, 23.1% had 2 risk factors while 2.9% had 3 risk factors. Fifteen percent were obese and 17 % overweight. The prevalence of AN was 43 % and 14.0 % had a positive family history of T2DM. Using a modification of the Wechsler Intelligence Scale for Children there was a borderline association between family history of T2DM and reduced cognitive score. I next tested the knowledge of T2DM among children using a de novo instrument and evaluated a peer-developed educational video as an intervention. Knowledge scores improved from 74.8 to 83.5 after exposure to the educational tool. Risk factors for T2DM are common among school children in Trinidad. Screening with glycosuria is both effective and cost-effective. Knowledge of the risks for and complications of T2DM can be improved through peer-led educational models. Strategies to stem the rising tide of childhood obesity and T2DM are urgently warranted.

Key words: Yvonne Ann Batson, Trinidad, Type 2 diabetes, childhood, mass screening, healthcare cost, risk factors and awareness.