Do tuck shops contribute to an unhealthy, obesogenic lifestyle among schoolchildren?

The World Health Organization's (WHO) projections indicate that noncommunicable diseases (NCDs) will be responsible for a significantly increased total number of deaths in the next decade. Africa is one of the regions where the greatest increase is expected.[1] Interventions to prevent NCDs on a population-wide basis are not only achievable, but also cost effective.[1] The WHO proposes "best buy" actions that should be undertaken immediately to accelerated progress in terms of lives saved, diseases prevented and healthcare costs saved. Nutrition-related actions include reducing salt intake and replacing trans fat in food with polyunsaturated fat. There is also consistent evidence that the promotion of healthy eating in schools can reduce the risk for NCDs, hence the WHO policy on school-based interventions. Another cost-effective and population-wide intervention proposed by the WHO is restrictions on marketing of foods and beverages high in salt, fats and sugar, especially to children.[1]

The study by Wiles et al in this edition of the *South African Journal of Clinical Nutrition* affords some valuable insight into the nutritional environment at selected well-resourced schools in South Africa, and contributes to the formative knowledge needed for a population-wide intervention to establish healthier nutritional environments at schools. The study, based on information provided by tuck shop managers, reports findings on the variety, popularity and nutritional quality of tuck shop items in 11 primary schools in Pietermaritzburg. The findings confirm those reported by previous studies in South Africa and the USA, showing that carbonated sweetened cold drinks and snacks with high fat and salt content are popular items bought by schoolchildren from tuck shops.[2,3]

The financial management of tuck shops in South African schools is a function of the school governing bodies (SGBs). According to Mestry, an effective SGB will set up a finance committee with subcommittees, such as those responsible for the tuck shop.[4] One of the recommended control measures for the management of tuck shops is that a tuck shop policy must be developed and implemented. The ideal would be for types of foods to be sold in tuck-shops to be included in such a policy. Although it is not clear whether the schools participating in the study by Wiles et al did have such committees, only one of the 11 managers interviewed had to follow guidelines set by the school management committee. Although the WHO urges governments to draft policies to promote healthy eating and physical activity in schools,[1] Leviton argues that in the USA local initiatives by education districts usually start the process, and are then followed by state action.[5] Policy-guided interventions in individual schools have furthermore shown success in other studies,[6] demonstrating that healthier school environments could be achieved, even through intervening at the local school policy level.

Ninety per cent of the tuck shops participating in the study by Wiles et al sold cold drinks bought from a well-known cold drink distributor. Schools had to comply with rules set by the distributor, namely that they will receive a fridge for the tuck shop, on condition that only drinks from that provider are stored in the fridge. The implications of stocking these items are far reaching, as having the fridge in full view of the children provides an advertising opportunity, both through signage on the fridge and the display of the products. There is good evidence that commercial advertising and marketing of high-fat, energy-dense, micronutrient-poor foods and beverages to children can have an impact on their purchase behaviour and consumption.[7] Rovner et al[8] reported that foods sold at school tuck shops had a significant effect on the overall food intake of young children in lower school grades. Healthier beverage options are further limited by the sponsored fridges, as tuck shop managers would have to buy an additional fridge if they wanted to stock alternative drinks. This could have contributed to the finding in the study by Wiles et al that only 18% of the tuck shops stocked milk drinks and yoghurts which are good sources of calcium, protein and B vitamins, and are also acceptable to children.[9] A longitudinal study in the USA showed that high dairy intakes were associated with lower body fat percentage, and made an important contribution towards the nutrient intakes of primary schoolchildren.[9]

The findings about the most popular items at the tuck shops, namely savoury pies and corn crisps, point to the popularity of high-salt and high-fat foods among schoolchildren. Studies in South African, as well as low-income African-American, schoolchildren also reported frequent intakes of energy-

dense and nutrient-poor foods, such as fried foods and salty snacks.[2,3,8,10] Replacing foods high in salt and fat with food items with a lower salt and fat content, such as fruits, can reduce the risk of NCDs.[1] School-based interventions to increase fruit and vegetable intakes of schoolchildren in Australia and the USA showed promising results.[11,12] A study in the Netherlands has also shown that the provision of fruits and vegetables twice a week resulted in lower intakes of unhealthy snacks during school hours.[13]

School snack bars and tuck shops have been criticised for providing easy access to energy-dense, micronutrient-poor foods and beverages.[7] In many schools, revenues from tuck shops are important sources of income for the school management. In the schools studied by Wiles et al, 81% of the tuck shops were privately managed and the income generated must clearly have been an important consideration to the tuck shop managers. However, a systematic review of the literature on the impact of changing nutrition standards on school revenue concluded that, in the North American situation, very little evidence existed that revenues dropped when healthier policies were adopted.[14] The concluding remarks by Wiler et al in this regard, namely to educate tuck shop managers regarding the appropriate quality and quantity of homemade tuck shop items, to emphasise the importance of purchasing healthier tuck shop items, and to overcome negative attitudes and barriers that prevent tuck shop managers from selling healthy items, could avert fear of financial loss and could be relevant in South African schools. In this regard, international studies have shown that school principals were highly supportive of interventions to increase fruit and vegetable intakes in schools,[11] but that stock control to ensure rapid turnover and minimise spoiling of fruits remained a challenge for tuck shop managers.[12]

While the findings of this survey in Pietermaritzburg contribute knowledge about the nutritional environment in well-resourced schools, there is still much to be learned about school environments in less affluent, poorly resourced settings. An important aspect of food availability at schools, not addressed by the present study, is foods sold by vendors in low-income living areas. In the South African context this is particularly important, since a large number of primary schools are located in poorly resourced settings, where pupils buy food from street vendors rather than from tuck shops. This could provide an even greater challenge in establishing healthy nutritional environments at such schools. Research to determine the safety and socio-economic importance of street-vended foods could improve this industry, but success can only be ensured when food control authorities, street food vendors and all other stakeholders have a clear understanding of their roles and responsibilities.[15] Clearly, there is not one simple solution to providing schoolchildren with healthier food options and to prevent overweight/obesity in school-age children, but strategies to change the current scenario from providing mostly high-fat, high-salt snacks and cold drinks high in sugar to providing less energy-dense, more nutrient-rich snacks should be a priority for the government, school principals, SGBs and the nutrition community alike.

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