

## Attitudes and barriers to healthy eating amongst adolescent girls in Durban, Kwazulu-Natal, South Africa

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### Abstract

*Eating patterns have emerged as one of the significant determinants of health, and healthy eating has become one of the key focus areas of behaviour modification interventions. The purpose of the study was to describe the eating patterns of adolescent girls and to identify barriers to healthy eating. Data were collected during school time using a researcher-developed and participant-administered questionnaire. Only learners whose parents had provided written informed consent were interviewed. A total of 76 female learners participated in the study but only 73 questionnaires were analysed three were excluded as they were incomplete. The participants were in grades 9 to 11 and their ages ranged between 14 to 17 years, and most (63%, n=46) were between the ages of 15 and 16. Close to half of the participants (45.2%, n=32) were Indian; (26%, n=19) were Blacks, and (19.2%, n=14) were Whites. Most participants (76.7%, n=56) brought lunch from home daily. Supper and lunch were considered more important meals than breakfast or a snack (chi-square = 24.008; p-value = 0.000). More than half (54.8%, n=40) ate all three meals and a snack daily. The majority (37%, n=27) received information on healthy eating from their family, a fifth relies on television and magazines as their source of information followed by information from their teachers. Only 15% (n=11) stated health professionals as sources of information on healthy food. There is variation in sources of eating information and the family and the media are important sources. The school setting should be utilized to increase knowledge on healthy eating and use its influence to enable the formation of healthy eating habits.*

**Key words:** healthy eating, patterns, sources of information; adolescents, KwaZulu Natal

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## Introduction

Eating patterns have emerged as one of the significant determinants of health, and healthy eating has become one of the key focus areas of behaviour modification interventions. Having a life-long impact, eating patterns often begin in childhood and are often established by the age of 13 years (Feeley et al., 2012) with childhood habits often carried into adulthood. Studies have shown that obesity and overweight is prevalent among children (Armstrong et al., 2006; Oldewage-Theron & Egal, 2010), thus indicating unhealthy eating habits among some children.

Globally, emerging non-communicable diseases associated with diet and lifestyles have been increasing over the last two decades (Popkin, 2006). Developing countries carry a disproportionate burden of these diseases, as the incidence of chronic diseases is escalating much more rapidly than in industrialized countries; this puts extra demands on already overstretched health services in these countries (Kelishadi, 2007). The influences of global trends in eating continue to influence eating habits in developing countries. As a result, consumers continue to demand convenient and ready-to-eat products, which processors are happy to provide (Martínez et al., 2011). Amuna & Zotor (2008) reported that the prevalence rates for type 2 diabetes mellitus and cardio-vascular diseases in sub-Saharan Africa have seen a 10-fold increase in the last 20 years, and preventable environmental risk factors for obesity and the metabolic syndrome in developing countries has become one of the key target areas for prevention (Kelishadi, 2007). This situation calls for countries to consider education on nutrition and eating patterns, because this is a major contributor to the development of non-communicable diseases (NCDs) or diseases of lifestyle.

South Africa has experienced an increase in the prevalence of obesity, which has been attributed to the nutrition transition and the resultant increase in chronic diseases, which contribute substantially to the national burden of disease (Joubert et al., 2007). Because obesity is much more prevalent among women than men (Case, & Menendez, 2009), the burden of NCDs in females is also almost double that of males (Joubert et al., 2007). Other studies found that NCDs are reported to be more prominent among residences of urban areas (Mayosi et al., 2009).

The prevalence of overweight and obesity in South Africa is a major public health concern, with an estimated 25% of the adult population of all races being obese, and 20% men and women between the ages of 20 and 30 being obese (Aeolian & Barbie, 2010). This high prevalence of both obesity and overweight is not limited to the adult South African population, but has also been reported among adolescents and young people. Young urban black women are at greatest risk of being obese (Jennings et al., 2008) and twenty percent of South African females in late adolescence are reported to be overweight (Rossouw et al., 2012). There is therefore a need to recognize excess body weight as a major risk to health, particularly among females. This recognition should also prompt the development and implementation of comprehensive interventions to address excess bodyweight and resultant health consequences, and this includes the assessment of eating patterns among young females.

While there are a number of ways to address the prevalence of overweight and obesity, healthy diet and nutrition remains key instruments in the era of increased consumption of refined foods which are also high in fats and sugar (Hawkes, 2006). Education in nutrition is key to the promotion of a healthy lifestyle, and the school setting provides a valuable platform to influence the health of children. Successful intervention programmes begin in primary school and such programmes should include the study of behaviours, attitudes, motivation, knowledge and barriers to healthy eating (Ogden et al., 2007).

NCDs are now the second most important cause of premature death in South Africa, with poor diet being linked to the cause of this obesity epidemic. Because dietary habits are mostly set in childhood, knowledge about healthy food choices should be a focus of public health interventions at an early stage. Because dietary intake is a strong determinate of health, it is integral to interventions of managing non-communicable diseases (J'ouvert et al., 2007), which makes healthy eating an important prevention strategy for non-communicable diseases. Prevention of overweight and obesity should target children (Kruger, Kruger, & Macintyre, 2006), especially because unhealthy behaviours that lead to non-communicable diseases are already present in the youth (Rossum et al, 2012). The impact of unhealthy eating is long term because eating habits and patterns do not only impact on the physical body, but also affect cognitive development and academic achievement (Burkhalter & Hillman, 2011). Healthy eating patterns over a lifespan can therefore be an intervention for increased cognitive health and function, with the first step for such interventions being to assess the eating patterns and barriers towards healthy eating, hence this study. The purpose of the study was to describe the eating patterns of adolescent girls and to identify barriers to healthy eating.

## **Methodology**

### *Study design and setting*

This was a cross sectional study conducted by means of questionnaire at three schools in Durban. A list of all the schools within the Durban magisterial district was obtained from the Kwa-Zulu Natal Education Department website. Within these schools, quintile 5 and girls-only schools were identified, from which three schools were randomly selected to be included in the study. From each school, one class of grade 9, 10 or 11 was asked to participate in the study. All the learners in the selected classes were requested to participate and they were given letters to request consent from their parents. The sample size consisted of three classes of a total of 76 learners.

### *Data collection*

Data was collected in the classroom during school time, at a time allocated by the school, using a researcher-developed and participant-administered questionnaire. Learners whose parents had provided written informed consent were assembled and the purpose of the study explained to them. They were given an opportunity to ask questions and requested to provide

their assent that confirmed that they participate of their own free will. The questionnaire was in English, a language of instruction for all the schools.

*Data analysis*

Statistical Package for Social Science (SPSS) was used to analyse the data. Demographic data was analysed descriptively and chi-square was used to determine associations between eating habits with each of the independent variables.

*Ethical Considerations*

Ethics approval was obtained from the ethics Committee of the Department of Health Studies at UNISA. Permission to conduct the study was obtained from the Durban District of Education and the management of the individual schools. Written informed consent was obtained from the parents of the learners, and assent was obtained from the learners.

**Results**

**Demographics**

A total of 76 female learners participated in the study but only 73 were analysed because three questionnaires were excluded as they were incomplete. The participants were in grades 9 to 11 and their ages ranged between 14 to 17 years and most (63%, n=46) were between the ages of 15 and 16. Close to half of the participants in the sample (45.2%) were Indian; the remaining were Blacks (26%) and Whites (19.2%). Tables 1 showa the participants’ ages and grades.

**Table 1: Distribution of age and grade (n=73)**

Participants’ age (in years)	Frequency	Percent
14 years	14	19.2
15 years	26	35.6
16 years	20	27.4
17 years	13	17.8
Participants grades		
Grade 9	25	34.2
Grade 10	21	28.8
Grade 11	27	37

**Source of information on healthy eating**

The majority (37%, n=27) received information on healthy eating from their family. A fifth relies on television and magazines as their source of information, followed by information from their teachers. Only 15% stated health professionals (doctors, nurses or dieticians) as sources of information on healthy food. Table 2 shows the sources of information on healthy food.

**Table 2: Sources of information on healthy eating (n=73)**

Source of information	Frequency	Percent
Family	27	37,00
Television, magazines	15	20.5
Teacher	9	12.3
Doctor	7	9.6
Internet	7	9.6
Dietician	4	5.5
Friends	3	4.1
Other	1	1.4
Total	73	100.0

**Meal eating patterns**

Most (76.7%, n=56) brought lunch from home daily, 19.2% (n=14) brought lunch from home at least three times a week and only 4% (n=3) do not bring food from home and always buy lunch at school. Supper and lunch are considered more important meals than breakfast or a snack (chi-square = 24.008 with p-value = 0.000). Some 14.6% (n=11) of the participants reported not eating breakfast daily.

More than half (54.8%, n=40) ate all three meals and a snack daily, with 4.1% (n=3) eating supper only, 67% (n=49) of the participants ate breakfast, lunch, and supper as a meal combination daily, and 68% (n=50) ate lunch, supper, and a snack daily. The reasons stated for not eating a specific meal were not hungry, it takes too much time, it is not important, cannot afford it, and my friends don't, so I don't. Not hungry was by far the most important reason for not eating a specific meal daily with taking too much time coming second. Table 3 shows the combination of meals reported by participants.

**Table 3: Different meal combinations (n=73)**

Meals	Frequency	Percent
Eat all meals	40	54.8
Eat lunch, supper, and a snack only	10	13.7
Eat breakfast, lunch, supper only	9	12.3
Lunch, supper only	5	6.8
Supper only	3	4.1
Breakfast, lunch, snack only	2	2.7
Breakfast, supper only	2	2.7
Lunch only	1	1.4
Supper, snack	1	1.4
<b>Total</b>	73	100

The two most common reasons for not eating specific meals were that the participants did not feel hungry and that they did not time to eat. Less occurring reasons included the specific meal not being important, friends not eating that specific meal, and not affording the specific meal.

There was no correlation between race and the consumption of breakfast, lunch or supper, but a correlation between race and consumption of a daily snack, with black girls less inclined to have a snack than those from the other race groups (chi square=9.609, p value=0.022). There was no significant relationship between the response to the statement of not knowing how to prepare healthy foods and the availability of healthy foods at home (chi-square = 4.738 with p-value 0.315). Those that eat out more (> once every 2 weeks) agree more that it is more convenient to eat less healthy food (chi-square = 5.680 with p-value 0.058).

There was no significant relationship between race and source of healthy eating information (chi-square = 6.543 with p-value 0.365), and between race and amount of money spent at the school shop (Chi-square = 2.656 with p-value 0.448). There was significant racial differences regarding knowledge of healthy food choices, with White, Indian and “other” groups stating more than the Black group that they know which food choices are healthier (Chi-square = 17.310 with p-value 0.008).

## Discussion

Previous studies have reported that the majority of food eaten by South African adolescent students, both brought to school and food purchases, can be classified as being unhealthy choices (Temple et al., 2006); thus making nutrition education and interventions to influence food choices a major public health thrust. Nutrition knowledge amongst South African learners was also found to be poor (Oldewage-Theron & Egal, 2010), confirming the need for nutrition education among school going children. Although the majority of the participants had breakfast before school (77.8%), it is concerning that close to a quarter (22%) don't, despite breakfast being confirmed as essential for the development and academic performance of school-aged children (Chitra & Reddy, 2007).

It is concerning that television is considered more a source of information on healthy eating than both teachers and health professionals. Although television can be successfully used for nutrition education (Hindan et al., 2004), its overall limitation is that much of its “healthy eating” content is misleading (Mehta et al., 2012) as the learners may not be able to differentiate between fact and fallacy in such television content. The findings of this study calls for strengthening the school as a source of information, and to increase a platform that enables increased interaction between health professionals and the communities, as these sources are likely to be more credible than television.

While it may seem encouraging that more learners receive information on healthy eating from their families, it should not be assumed that such information is correct because Temple and co-workers (2006) found that often food brought from home falls in the category of unhealthy choices. The high prevalence of overweight and obesity in South Africa is also an indication of unhealthy eating habits in many homes, thus nullifying the belief that homes provide correct information and choices for healthy eating. In this particular study, food brought from home include *samosas* (deep-fried pastry with spicy filling), and pies, which have a high fat content. Moreover, although home environmental factors can influence

adolescents' eating behaviours, they have been found to be less predictive than demographic and psychosocial variables. (Haerens et al., 2008), which requires interventions that will take such variables into account.

Public health interventions aimed at eating habits should target beliefs and intentions because these interventions are likely to be effective in addressing unhealthy eating habits (Verplanken & Wood, 2006). In this study, the barriers to healthy eating include lack of time to prepare and eat healthily, not feeling hungry, choices at the school shop, and the perception that less healthy foods are more convenient. Because these barriers are common among adolescents, interventions to address the situation can be developed and implemented at a school setting because, not only can the school screen and offer factual content, it can also influence eating habits by offering healthy choices at the school shop. This is more likely to be successful in forming healthy eating habits.

The reality of high prevalence of a variety of faulty eating habits that are prevalent amongst the general population and many adolescents, requires that healthy eating should start early in a child's life (Peacock et al., 2010) and the school is one of the settings which can provide a platform to influence many young people towards developing healthy eating habits. Oldewage-Theron and Egal, (2012) reported that the knowledge of Life Orientation educators in primary schools in South Africa is not optimal, but can be significantly improved by a specifically developed intervention for the teachers. Such teachers can then cascade their knowledge to the learners, and thus influence large numbers of young people within a short period.

## Conclusion

The study identified eating patterns in a sample of adolescent girls, identified sources of healthy eating information and barriers to healthy eating. The conclusion drawn from this study is that there is variation in sources of eating information and that the family and the media are important sources. It is recommended that the school setting be utilized to increase knowledge on healthy eating and use its influence to enable the formation of healthy eating habits. If such interventions are promoted and cascaded to various school settings, they may provide a tool to address the problem of obesity and overweight and thus prevent the development of non-communicable diseases at a young age. This will have major impact on related health outcomes for many South Africans.

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