



Keeping up to date

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Keeping up to date - the 27th and 28th combined edition

Each issue of Keeping Up to Date tells you about current research, evidence and thought on an important issue for your work in health promotion.

Keeping Up to Date reviews academic literature. It references some key articles, especially those that you can get download from the world wide web. If you have difficulty accessing any of the references, please contact us and we can point you in the right direction.

Each issue is peer reviewed. The Health Promotion Forum's Academic Reference Group is the editorial advisory committee for Keeping Up to Date."

From the Hauora Editor

This bumper edition of Keeping Up to Date makes up for the 27th and 28th editions, as we did not publish one in the last quarter (December).

We are thankful to Mat Walton & Louise Signal, Health Promotion & Policy Research Unit, University of Otago, Wellington, for writing for both editions.

We always welcome your feedback. We need to know how we can continue to improve our service

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Environmental Influences on Obesity and Children's Nutrition in Aotearoa New Zealand

Introduction

Childhood obesity and nutrition are considered to be key problems impacting on the health of New Zealanders. This is reflected by the priority placed on obesity, nutrition and physical activity in the *New Zealand Health Strategy (Ministry of Health 2000)*, and the subsequent government policies aimed at reducing obesity and improving nutrition and physical activity levels. Most notably the *Healthy Eating – Healthy Action: Oranga Kai – Oranga Pumau A Strategic Framework (Ministry of Health 2003)*, and the Mission-on policies (New Zealand Government 2006).

Many of the actions aimed at reducing childhood obesity, improving nutrition, and increasing physical activity take a health promotion approach, and many health promoters are involved in obesity prevention activities across the country (Blair 2004, Ministry of Health 2007). This keeping up to date summarises recent research into childhood nutrition and obesity, with an emphasis on research from Aotearoa New Zealand, across three environments: home, school,

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and community. Implications for health promotion practice and areas for further research are then discussed. This review focuses on nutrition and obesity, with physical activity not included. In 2002 9.8% of the 5-14 year old population were considered obese and a further 21.3% considered overweight (Ministry of Health 2003), based on Body Mass Index (BMI). These rates are in line with many developed countries around the world, where there appears to be a general trend of increasing rates of childhood obesity (Wang and Lobstein 2006). The rates of overweight and obesity are not uniform across ethnic and gender groups however, as outlined in Table One. It shows that Pacific children have the highest rates of overweight and obesity, followed by Māori, and that females tend to have higher rates than males.

Ethnicity and gender	Total % overweight	Total % Obese
Māori Males	19.6	15.7
Māori Females	30.6	16.7
Pacific Males	33.9	26.1
Pacific Females	32.9	31.0
NZEO ¹ Males	18.4	4.7
NZEO Females	18.8	6.0

¹ NZEO refers to New Zealand European and Other ethnic groups

Table One – Prevalence of overweight and obesity amongst New Zealand children aged 5-14 years as identified through the 2002 Childrens’ Nutrition Survey.

The rates of overweight and obesity are also not uniform across socio-economic groups. Table Two shows the percentage of overweight and obese 5-14 year olds by the New Zealand Deprivation Index (NZDep01). The NZDep01 quintile one represents the least deprived areas where people live, with quintile five the most deprived. The table shows a clear trend of increasing rates of overweight and obesity as deprivation increases.

When focusing on an individual child, the causes of obesity are obvious – an imbalance between energy in (food eaten), and energy out (physical activity) (World Health Organization 2003). When focusing on trends in childhood obesity across the population however, a more complex view of the causes of obesity is required. Ecological models provide such a view describing how different environments (or settings) that a child interacts with (for example home, school, and community), impact on the food eaten and physical

activity completed (Story, et al. 2007, Swinburn, et al. 1999). Such models explain why differences in rates of obesity exist between genders, ethnic groups, and by socio-economic status (Utter, et al. 2007). An ecological model developed by Story et al (Story, et al. 2007), is presented below in Figure One. This model shows the interaction between individuals, social networks, physical environments, and macro-level environments and provides examples of settings and interventions at each level. The model assumes that each environment type plays a role in causing obesity. Within an ecological model ‘downstream’ interventions are those that focus on individuals and social environments, such as influencing behaviours or providing role models. ‘Upstream’ interventions on the other hand focus on change in physical environments

and macro-level environments. Because macro-level and physical environments influence many individuals at once, change in these environments is likely to have greater impact than interventions aimed at individuals or families. This review focuses

on evidence of how physical environments influence childhood nutrition.

		% overweight	% obese
	NZDep01 Quintile		
Male	i	14.2	5.1
	ii	16.4	4.3
	iii	21.7	6.7
	iv	20.7	9.5
	v	24	16.1
Females	i	22.9	4.3
	ii	19.4	3.6
	iii	24.2	8.5
	iv	23.6	11.5
	v	27.2	19.5

Table Two – Percentage of overweight and obesity amongst New Zealand children aged 5-14 years by New Zealand Deprivation Index 2001 quintiles, identified through the 2002 Childrens’ Nutrition Survey.

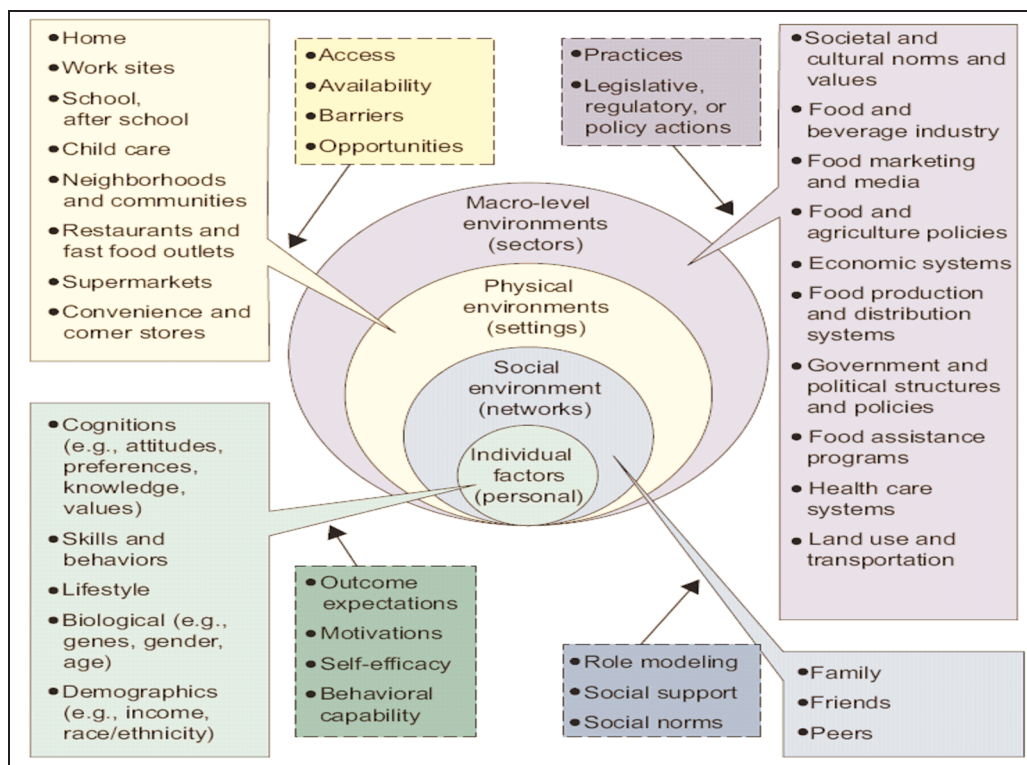


Figure One – Ecological model of obesity

Source: Story, et al 2007.

Home Environment

International reviews have shown that children’s food preferences are influenced by the availability of foods, promotion (advertising) of foods, and taste (Story, et al. 2002). Price is one key aspect of food availability. Internationally the price of food has been shown to be a factor in the foods people eat, leading to diets that consist of more energy dense and nutrient poor foods (Andrieu, et al. 2006). Recent New Zealand research comparing a weekly shopping basket of regularly purchased grocery items for a family of two adults and two children, with healthier equivalent items, showed the healthier basket cost \$6.42 more than the regular basket (Mhurchu and Ogra 2007). The basket used in this study excluded fruit and vegetables, so does not reflect the full cost of a balanced diet. For some households however, particularly single parent households and those with three or more children, an extra \$6.42 is likely to represent a large increase in the food budget (Walton, et al. 2007). At certain times of year when fruit and vegetables are more expensive, or heating bills rise (Frank, et al. 2006), the pressure on food budgets is likely to increase, potentially making healthier foods less affordable.

It is certainly the case that the perceptions of Māori, Pacific and low-income shoppers are that healthier foods tend to be more expensive (Signal, et al. 2007, Small and Signal 2007). Ironically, for example, carbonated beverages have been cheaper than milk since at least the early 1990s. This situation

has worsened recently with significant rises in international milk prices reflected in this country (Smith 2007).

The advertising of food appears to impact differentially on children in the home environment. Children of Māori and Pacific ethnicities are more likely to watch two or more hours of television a day, than children of New Zealand European and other ethnicities (Utter, et al. 2006). Māori and Pacific children are also more likely to consume more of the advertised products (Utter, et al. 2006). Wilson et al (2006) analysed adverts on TV 2 during hours of child focussed programming. As much as 70% of food adverts during children’s programming were classified as for products counter to improved nutrition, with only 5% promoting improved nutrition. This suggests that limiting food advertising to children may reduce consumption of these products, and be particularly beneficial to Māori and Pacific children.

Children of Māori and Pacific ethnicities are also more likely than children of New Zealand European and other ethnicities, to buy breakfast on the way to school, or buy lunch at school or on the way to school (Utter, et al. 2006, Utter, et al. 2007). This suggests that there are differences in practices within households of breakfast and lunch preparation. It is, therefore, important that healthy food options are available to buy at schools, and at food outlets surrounding schools, particularly for children of Māori and Pacific ethnicity.

School Environment

Providing healthy food in schools is a focus of current government policies, as shown by the development of food and beverage classification system for schools (Ministry of Health 2007), and the Fruit in Schools scheme. A survey of New Zealand school food environments, published in 2004 (Carter and Swinburn 2004), suggests that government policies to improve the food available in schools are required. The food items most commonly for sale and sold in primary schools in 2004 being pies and sausage rolls, with fruit the least frequent item offered for sale (Carter and Swinburn 2004). Changes to school environments are currently being encouraged through a change to the Ministry of Education National Administration Guideline (NAG), to say that schools must promote healthy food and nutrition and, where food and beverages are sold on school premises, to make only healthy options available (Ministry of Education 2007). School Board of Trustees are to comply with the NAG by June 2008.

Carter and Swinburn (2004) also reported that only 16.5% of primary schools surveyed had a school food policy. Research by Richards et al (2005) reported that only 4% of primary and intermediate schools in New Zealand had policies concerned with fund raising and sponsorship in schools, but that 53% had sponsored programs or events, and that 91% of primary and secondary schools sold food products for fund raising – 58% of which were likely to be products high in sugar or fat. Schools are being encouraged to develop policies as part of their response to the NAG change.

Community Environment

Schools are of course located within communities, some of which provide an unhealthy food environment. Maher et al (2005) found that, within a 1 km radius of ten secondary schools in the greater Wellington region, food outlets were on average closer to low decile (serving lower socio-economic families) schools than higher decile schools. This study also found an average of 87 outdoor food advertisements within a 1km radius surrounding a school, with 70.2% for products categorised as unhealthy.

In a more positive vein, Pearce et al (2007) recently published a study considering the location of food outlets across socio-economic areas. The results suggest that physical access to all types of food outlets (including dairies, supermarkets, local fast food, and international fast food retailers), is better in more deprived areas. While easy physical access to fast food and dairies may enable children to purchase nutritionally poor foods for breakfast or lunch, having a range of shops may also provide an opportunity for

schools and communities to work with retailers to promote healthier options through local stores. An example of this is the Healthy Kai programme led by Auckland Regional Public Health Service (Auckland Regional Public Health Service 2007).

Even community settings that are obvious locations for promotion of healthy diets and physical activity may be promoting unhealthy food options. A study of council owned swimming pools and libraries in the Wellington region recently showed that in all 16 venues surveyed, including both cafés and vending machines, 73% of the food and drink options available were unhealthy. Further, there were thirteen advertisements that were considered to be obesity promoting, fifteen for food considered neutral, and no health-promoting advertisements (Al-Shehri, et al. 2007).

Sports sponsorship may also be promoting unhealthy products. A pilot study by Maher et al (2006) surveyed the websites of organisations and clubs for the sports most commonly played by children - rugby, cricket, touch rugby, netball, athletics, tennis, basketball, and soccer. The survey found 640 sponsors over 107 websites. Of these sponsors, 32.7% were for products classified as 'unhealthy' (alcohol, gambling, or unhealthy food), compared to 15.5% classified as 'healthy' (health promotion messages, healthy foods).

Implications for Practice

Overall, the implication of an ecological model of childhood obesity is that no one intervention will prevent obesity. What is required are multiple interventions across multiple environments. An ecological model, and evidence of multiple environmental causes of obesity, also means that the individual child or their family should not be blamed for obesity. This model acknowledges the constraints on individual's choices and actions imposed by the environment in which they live their lives.

Health promotion programmes aimed at raising awareness of healthy nutrition options should still be used, but should focus on supporting environmental interventions, such as: developing school or council policies on promoting healthy nutrition; and restricting marketing of unhealthy products to children. The largest impacts on reducing childhood obesity, are likely to come from upstream interventions aimed at changing the environments children live in (Wilson, et al. 2006).

These upstream interventions also have more potential to address the unequal distribution of obesity amongst Māori and Pacific children.

From the research outlined above, three areas for potential action can be identified. The first area for action is working with schools and councils to develop food environment policies. Many schools will be developing policies over 2008 to meet changes to the NAG for schools, which aims to promote healthier food environments. Ministry of Education, Ministry of Health and World Health Organization resources on health promoting schools may be of use in supporting the work of schools. Local councils do not have a requirement to provide healthy food environments in council owned facilities, however doing so is in line with the responsibilities of councils under the Local Government Act 2002. Making submissions to Long Term Council Community Plans and annual planning processes may help to get healthier food environments on council agendas. When councils do want to get involved in improving food environments, they are likely to look to health promoters to provide evidence of what interventions work, and to make links with health agencies and service providers.

The second area is to work on local solutions to sponsorship and advertising of unhealthy products for schools, sports clubs, and community organisations. This may be through raising awareness of the issue with sports clubs, for example, and seeking alternative sources of funding. It may be that finding alternative funding for a particular sporting or community event is a practical starting point from which ongoing sponsorship arrangements can be built.

The third area is to communicate barriers to accessing healthy foods (fruit and vegetables, wholegrain products, products low in salt, sugar and fat), to politicians, the Ministry of Health, and Ministry of Social Development. If people are having difficulty accessing healthy foods, whether because of cost or availability, this needs to be addressed by policymakers. At a local level this might mean supporting or undertaking research, sharing results of research with communities, or working with agencies involved in lobbying, such as the Agencies for Nutrition Action, or the National Heart Foundation. A list of agency websites is provided below.

Overall the best way to improve childhood nutrition and reduce rates of obesity, including reducing the unequal burden of obesity across ethnic and socio-economic groups, is to keep looking for upstream interventions, and at how interventions impact across environments, and doing so with a focus on equity

Tools and Resources

There are some useful tools available to assist in designing and assessing interventions to impact on environments to reduce childhood obesity rates and inequities.

The Health Equity Assessment Tool (Equity Lens) for Tackling Inequalities in Health (HEAT), is available on the Ministry of Health website, and provides a useful set of questions that can help groups to identify where inequalities are being generated, and what type of interventions might help to reduce inequalities (Signal, et al. 2007). The HEAT is most useful when undertaking a needs analysis before detailed intervention planning has taken place. Guidance for using the HEAT will be available on the Ministry of Health website later in 2008.

To evaluate a policy or intervention that is further along the planning process, a health impact assessment (HIA) may be useful (Signal, et al. 2006). A health impact assessment seeks to identify unintended consequences of an intervention, such as contributing to inequalities by impacting differently across groups within the population. Health impact assessments are particularly useful for considering how an intervention in one environment (for example schools), may impact on other environments (such as homes and community). The HIA process works best when there is a group with a range of skills involved, including those in health promotion and public health. For this reason health promotion workers can usefully offer to be involved in HIA project teams, even if the HIA is being led by a council or other body. The Whānau Ora Health Impact Assessment tool (Ministry of Health 2007) was launched in 2007, and is designed specifically to consider impacts of interventions on Māori. Further information on HIA (and copies of the tools) is provided on the Ministry of Health HIA Support Unit website.

HEALTH PROMOTION FORUM

The Health Promotion Forum is a national network of organisations involved in health promotion activities. For a \$30 membership fee your organisation/community group will receive the quarterly newsletter, reduced fees for our health promotion skills training workshops and access to our network resources and collective advocacy role.

- I enclose \$30 and application form to join the Health Promotion Forum of New Zealand*
- I enclose a donation for \$..... to the Health Promotion Forum of New Zealand.
- Please put me on your mailing list to receive the free newsletter.

*Certain conditions apply:

1. Members must have aims and objectives consistent with those of the HPF (please attach a copy of your A & Os)
2. Member organisations should receive no revenue or gain from either the tobacco industry or companies with a financial interest in this industry.

ORGANISATION

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Resources

Health Impact Assessment

(<http://www.moh.govt.nz/hiasupportunit>)

Health Promoting Schools

(http://www.who.int/school_youth_health/gshi/en/index.html)

and

(<http://www.healthed.govt.nz/resources/search-resources.aspx?id=23>)

HEAT (<http://www.moh.govt.nz/moh.nsf/pagesmh/3968?Open>)

See the websites of these agencies with concern for the environmental influences on obesity:

National Heart Foundation,

including Pacific Islands Heartbeat

(<http://www.nhf.org.nz>)

Te Hotu Manawa Māori

(<http://www.tehotumanawa.org.nz>)

Agencies for Nutrition Action (<http://www.ana.org.nz>)

Obesity Action Coalition

(<http://www.obesityaction.org.nz>)

Fight the Obesity Coalition (<http://www.foe.org.nz>)

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