Health behaviours in survivors of childhood cancer

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Results from a Queensland study of childhood cancer survivors show that the majority are not meeting the national guidelines for fruit and vegetable intake or physical activity requirements and a significant proportion are overweight or obese. These survivors expressed strong interest in health promotion aimed at improving diet and physical activity.

Curative therapy has resulted in increasing numbers of childhood cancer survivors, however quality and length of long term survival is often compromised due to long term side effects ('late effects') of the disease process and/or treatment for childhood cancer.[1] These late effects include: cognitive impairment, functional problems, endocrine toxicity contributing to an increased incidence of obesity, and early mortality from second cancers, cardiac or pulmonary disease. Many of the late effects of childhood cancer could be minimised through prevention and early intervention. Increasingly, health professionals will need to be aware of the specific health care needs of childhood cancer survivors, including the need for the promotion of a healthy lifestyle to minimise late effects.[2] This study aimed to describe current health behaviours in a sample of Australian childhood cancer survivors and their interest in health promotion activities.

Methods

Childhood cancer survivors (lymphoma, leukaemia or brain/central nervous system [CNS] tumours) were identified from the mailing lists for two childhood cancer support groups in Queensland. Twenty-eight survivors (76% of those eligible and able to be contacted) completed telephone interviews on physical activity level, dietary intake, smoking behaviour, and interest in a range of health promotion activities including preferred delivery mechanisms (telephone, mail, CD-ROM, classroom or internet). Ethics approval was gained from the Queensland University of Technology.

Results

Characteristics of participants are presented in *Table 1*. Of the 28 survivors, only five (18%) had ever smoked 100 cigarettes or more in their lifetime and only two (7%) were current smokers. Only a fifth of childhood cancer survivors (n=6, 21%) ate the recommended serves of fruit per day and only one survivor (4%) ate the recommended serves of vegetables per day.

Almost half (43%) of the survivors were classified as overweight or obese based on self reported height and weight. The prevalence of overweight and obesity was associated with tumour type, with 67% of CNS tumour survivors classed as overweight or obese compared to 33% of leukaemia survivors and 29% of lymphoma survivors (p=0.044).

Approximately one-third (36%) of survivors were sufficiently active, while 11% were sedentary (no reported activity). Tumour type was related to physical activity level with 86% of lymphoma survivors meeting the physical activity guidelines for sufficient activity compared to 33% of leukaemia survivors and only 8% of CNS tumour survivors (p=0.003).

Interventions targeting 'eating better to stay healthy' and 'getting in shape' were of greatest interest to survivors. Mailed delivered information was clearly the preferred method of delivery. Over half (54%) of the survivors wanted a family member or friend to join them in the program (57% would invite parents, 21% the entire family, and 21% siblings).

Discussion

The proportion of childhood cancer survivors who met Australian recommendations for physical activity, and fruit and vegetable intake was very low. A significant number were classified as overweight or obese, particularly survivors of CNS tumours. Fewer survivors were current smokers compared to population estimates; a finding which is consistent with other reports.[3] Our findings are consistent with those found by Demark-Wahnefried

et al,[3] who in addition reported consumption of increased amounts of fat and suboptimal calcium intakes.

The fruit and vegetable intakes reported in this study are similar to those observed in a national survey of Australian children.[4] However, it appears that this sample of childhood cancer survivors have higher rates of being obese and overweight compared to other Australian children.[5] Considerably fewer leukaemia and CNS tumour survivors meet the recommendations for sufficient physical activity compared to the general Australian population of matched age,[6,7] while lymphoma survivors reported similar levels. The proportion of childhood cancer survivors who were sufficiently active in this survey was also significantly lower than that reported in another study of childhood cancer survivors.[3]

The findings from this study and Demark-Wahnefried et al[3] highlight the need to promote and encourage healthy lifestyles in childhood cancer survivors. General practitioners are likely to have the most contact with childhood cancer survivors across their lifespan, and should be involved in developing proactive care and encouraging improvements in behaviours such as diet, physical activity, and achieving/maintaining a healthy body weight.

Table 1. Characteristics of childhood cancer survivors (n=28)

	n	(%)
Age (years)	21	± 4
Male	11	(39.3)
Female	17	(60.7)
Cancer diagnosis		
CNS tumours	12	(42.9)
Leukaemia	9	(32.1)
Lymphoma	7	(25.0)
Time since diagnosis (years)		
Less than 2 years	2	(7.1)
2–5 years	10	(35.7)
5–10 years	4	(14.3)
More than 10 years	12	(42.9)
Time since last treatment (years)		
Less than 2 years	7	(25.0)
2–5 years	9	(32.1)
5–10 years	5	(17.9)
More than 10 years	7	(25.0)
Type of treatment		
Surgery	11	(39.3)
Radiotherapy	21	(75.0)
Chemotherapy	20	(71.4)

Conflict of interest: none declared.

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