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The school canteen & food industry: measurement of the availability and sales of foods which are low in fat, sugar and

Meg Francis
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The School Canteen & Food Industry:

Measurement of the availability and sales of foods which are low in fat, sugar and/or salt and high in fibre in school canteens in Western NSW

A thesis submitted in partial fulfilment of the requirement for the award degree

MASTER OF SCIENCE (Nutrition & Dietetics)

UNIVERSITY OF WOLLONGONG

By

Meg Francis

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ABSTRACT

Issues Addressed:
School canteens can have an important influence on the dietary intake of school students. This study aimed to measure and improve the availability and sales of foods which are low in fat, sugar and/or salt and high in fibre in school canteens in Western NSW. This can be achieved through increasing both the school canteens’ awareness, and the availability of healthy foods. It also is vital to establish a network between school canteens and food industry.

Background:
A needs assessment conducted in 1994 with canteen managers revealed a strong interest for introducing popular healthy foods, provided that products could be purchased locally.

Design:
A survey of 82 school canteens in Western NSW measured the attitudes, changes in school canteens, product sales, range of snack foods, and use of nutrition information resources. Sales figures for bread, pies and sausage rolls also were collated from individual visits to school canteens in Dubbo. A focus group involving representatives from food industry revealed interests and the factors that influence food sold in school canteens.
Results:

Questionnaire data (n=55) indicated that many canteen managers have made successful changes in developing their canteen in the past 12 months. In consultation with nutritionists and the NSW School Canteen Association, a local bakery produced low fat meat pies and sausage rolls which have been introduced in 12 out of the 14 Dubbo schools with school canteens. In the past 12 months there has been a 3.9 percent increase in the number of schools with a school canteen policy, and 47.3 percent rise in NSW School Canteen Association members. Seventy four and a half percent of school canteens sell white bread, opposed to wholemeal being sold in 60 percent of schools. Local food industry reported a high level of interest in producing healthier foods into school canteens. Together with recognising the hardships in producing healthy products, food industry perceive canteen managers as being a major barrier in the development of a school canteen. Barriers include: lack of retail skills, lack of creativity and lack of nutrition knowledge.

Conclusion:

Nutritionists and the NSW School Canteen Association working together with food industry and school canteen managers has resulted in an increase in availability and sales of low fat and low salt foods in school canteens. This study demonstrates how nutritionists can tap into the needs of local food industry to produce a win-win situation.
Recommendations:

Evaluation of a successful canteen manager workshop in early 1995, in addition to ideas collated throughout the study has led to the following recommendations:

♦ Conduct an annual school canteen workshop/expo.
♦ Promote the NSW School Canteen Association guidelines with the use of a case study.
♦ Develop and provide criteria for principals to implement when employing canteen staff.
♦ Provide ideas for the ‘Tuckerbox’ newsletter.
CHAPTER 1 Introduction

A major determinant of health is dietary intake (Smith 1987; McMichael 1991; Graham & Uphold 1992). Dietary intake has been linked strongly with many non-infectious chronic diseases (World Health Organisation 1993). Coronary heart disease, diabetes mellitus (type 2), hypertension, some cancers, stroke, cirrhosis of the liver, gall bladder disease, diverticulitis, constipation, iron deficiency anaemia and dental caries are some of the diseases found to be linked to dietary intake (The Health Targets & Implementation (Health For All) Committee to Australia Health Ministers 1988).

An Australian national dietary intake study was conducted in 1985 on school children aged between 10 and 15 years. It was found that 30 percent were overweight or obese, 50 percent had high blood cholesterol, and 25 percent had high blood pressure (Department of Community Services and Health 1988). Australians’ ‘modern’ diets are often high in fat, sugar and salt, and low in dietary fibre (World Health Organisation 1993).

Poor dietary habits acquired during childhood and adolescence can have serious implications on an individual’s health status in both the short term and in later life (World Health Organisation 1993). This stage of life is an optimal time to implement and establish good eating habits (Muecke et al 1992).

School canteens are an important source of nutrition as they are used regularly by a substantial proportion of students (Hands 1977; ANF & Dental Health Foundation School Canteens & Food Industry 1
Studies have found that up to 80 percent of students use the canteen regularly (Scarlett 1993). Canteen managers are partially responsible for students' dietary intakes, and should work towards improving students' health (NSAHS 1993).

Studies by McKay (1994a) in Western NSW and the Northern Sydney Area Health Service (1993) found that whilst canteen managers have identified with the importance of providing nutritious foods, they still sell large amounts of high fat, high salt, high sugar and low dietary fibre products.

Lack of students' nutrition knowledge is no longer considered a major barrier to introducing healthy foods into the canteen (Australian Better Health Commission 1988). Both primary and secondary schools now teach nutrition and health to students. Canteen managers, principals, teachers and parents consider advertising, lack of volunteer staff, lack of preparation time, local shop competition, need for profit, lack of food promotion, limited budgets, lack of hands-on training for food-service workers, and lack of canteen workers' knowledge and skills to be the major barriers to implementing healthy food into the canteen (Evans et al 1983; Walsh et al 1992; Snyder et al 1995).

The most popular solutions suggested to overcome these barriers are Food Expo's for canteen workers, development of a canteen policy, access to nutrition teams, newsletters, access to resource material, and nutrition programs for students (Walsh et al 1992; Dubbo Health Promotion Unit 1995).
Consumers are demanding more nutritious products from food companies in order to follow a healthier diet (Goodman Fielder 1995b). Evaluation of a needs assessment questionnaire in 1994 and a workshop in 1995 for canteen managers in Western NSW indicated that canteen managers have a strong interest in introducing healthier products into the school canteen, providing that they can purchase products locally (McKay 1994a; Dubbo Health Promotion Unit 1995).

Modification of popular traditional high fat foods need not mean reduction in sales. It has been found that a substantial proportion of students are now demanding healthier foods from the school canteen (Dalwood et al 1995).

Food companies in Australia have modified foods that are traditionally high in fat, sugar, salt and low in fibre. Examples include low fat Good Tucker Pies (Canowindra) and Mrs Mac’s Munga Pies (NSW School Canteen Association 1995a).

Success in changing the nutritional value of food requires health professionals together with the NSW School Canteen Association, to develop partnerships with canteens and food industry (Glanz & Mullis 1988). The food market end-users, that is the canteen managers, need to identify the students’ demands, and use this knowledge to highlight to food industry alternative food choices in demand (Goodman Fielder 1995a). It is of upmost importance to continue to increase the range of healthy foods available for consumption from school canteens, with the aim to improve the nutritional status of children.
1.1 Aims

The aims of this study were:

♦ To measure the availability and sales of foods which are low in fat, sugar and/or salt and high in fibre in school canteens in Western NSW.

♦ To evaluate the work nutritionists have done with school canteens in Western NSW in the past 12 months.

♦ To determine local food industries’ interests, ideas and perceptions of introducing healthy foods.

1.2 Definitions

Food Service Market

All outlets which prepare meals and baked foods away from the home (Goodman Fielder 1995a).

Food Industry

Food industry refers to all producers and wholesalers who supply food and beverages to food outlets.

School Canteen

Under the institutional sector of the food service market (Goodman Fielder 1995a), the school canteen is a part of the school which provides foods for a large number of people.
School Canteen Manager

The person responsible for running the school canteen. They may be a paid or voluntary worker depending on the individual school.

Nutritional Status

The condition of the body resulting from the intake, absorption, and use of food over a period of time (Popkin & Lim-Ybanez 1982: 53).

Healthy Food

The definition of healthy food in this study was used to refer to food consistent with the Australian Dietary Guidelines (NH & MRC 1992), and the NSW School Canteen Association (SCA) Guidelines (NSW School Canteen Association 1995a).

High Fat Food

Food that contains more than 10 grams of total fat per 100 grams of food weight (National Heart Foundation 1993).

NSW School Canteen Association (SCA)

A non-profit state-wide organisation with a mission to ‘promote and facilitate the provision of nutritious and health food service in school canteens throughout NSW’ (NSW School Canteen Association 1995b:9). They have various tools and activities to guide both canteen managers and food industry in meeting this mission. These include: Accredited food lists, product guidelines, an accreditation scheme, food expo’s and conferences, and many more.
Western NSW

The area which demographically covers 42 percent of NSW. It includes four health districts: Orana, Far West, Castlereagh & Macquarie. These districts service 36 towns with school canteens. Appendix 1 illustrates the areas covered.

‘Tuckerbox’ Newsletter

A newsletter produced quarterly by the Western NSW Health Promotion Unit, and supplied to school canteens and take away food outlets twice a year.
CHAPTER 2 Literature Review

With dietary intake strongly associated with nutritional status of individuals, many studies have analysed school students’ dietary intake, health status indicators, sources and use of the school canteen, and influences on dietary intake. The poor nutritional status is often related to overconsumption of fat, sugar and salt, and results in problems with Australian childrens’ health status. Studies both within and outside of Western NSW have identified the avenue to improve childrens’ health.

Work has been conducted by nutritionists to advocate health promotion in schools. However work with food industry is less extensive, with few studies that address increasing the availability of healthier foods into school canteens.

2.1 Nutrition & Health

Nutrition contributes to the health of individuals in society (Australian Institute of Health & Welfare 1994), as the occurrence of many non-infectious diseases are believed to be linked to the Australian diet (McMichael 1991). Coronary heart disease, atherosclerosis, non-insulin dependent diabetes, some cancers, strokes, gall bladder disease, hypertension, constipation, diverticulitis, iron deficiency anaemia, osteoporosis, and dental caries are major causes of death and disease, with overconsumption as a major component (The Health Targets & Implementation (Health For All) Committee to Australia Health Ministers 1988; Australian Institute of Health & Welfare 1994).

Nutrition is not the only factor in the aetiology of these diseases. Other factors such as
inactivity, smoking, gender, age, stress and alcohol also have been found to contribute 
(Magarey et al 1993).

Cardiovascular disease accounts for 44 percent of all deaths in Australia (Australian 
Institute of Health & Welfare 1994). Whilst coronary heart disease has decreased since 
1965, it still remains the single main cause of premature death in Australia (Bennet & 
Magnus 1994). Dietary messages in the 1980's to eat less salt and avoid too much fat 
are believed to have contributed to this decrease in cardiovascular disease (Bennet & 
Magnus 1994).

Obesity is the most common nutrition-related disorder in society. Evidence suggests 
that obesity is increasing in children, which has serious current and long-term health 

Seventy five percent of dental services in Australia are related to dental caries, of which 
fifty percent are believed to be a result of poor dietary intake (Australian Institute of 
Health & Welfare 1994).

In Australia today, nutrition-related problems tend to reflect overconsumption of foods, 
particularly substances such as sugar, fat and salt (Graham & Uphold 1992). The 
modern Australian diet is described as being high in fat (especially saturated fat), energy 
relative to output, sugar, salt, alcohol, processed food, and low in dietary fibre (Darnton- 
Hill & English 1990; Hughes & Garis 1995).
With health professionals becoming increasingly aware of the strong relationship between dietary intake and nutrition-related morbidity, the Australian Dietary Guidelines were updated in 1992 (NH & MRC 1992). In the same year, the National Food & Nutrition Policy was published which supports the Australian Dietary Guidelines (Commonwealth Department of Health Housing & Community Services 1992).

The National Dietary Targets for the Year 2000 provide specific dietary recommendations (Department of Community Services & Health 1987). These include: reduce fat to 33 percent of dietary energy, reduce sodium intake to 2.3 grams per day or less, and to increase dietary fibre to 30 grams per day. Whilst these recommendations were developed for adults, they also are applicable to upper primary and secondary school students (Jenner & Miller 1991).

Nutrition-related problems can start developing in infancy (Downey et al 1987). This continues through to adolescence when dietary habits have important repercussions on the individual's current and future health status (World Health Organisation 1993).

2.2 Dietary Habits and Health Status of School Students

In the past decade, various studies have been conducted on the relationship between school child health status and dietary intake. These studies have been undertaken globally, nationally, statewide and locally in Western NSW.
The National dietary survey of school children (aged 10-15 years) was conducted by the Commonwealth Department of Community Services & Health in 1985. This survey was implemented in conjunction with the Australian Council for Health, Physical Education and Recreation fitness survey. This was the first national dietary study on the health status of school children (Department of Community Services and Health 1988). It was found that 20 percent of the energy intake of children came from soft drinks, confectionery, other foods with a high added sugar content, snack products and takeaway foods (Australian Institute of Health & Welfare 1994). Health status results revealed that 50 percent of students surveyed had high blood cholesterol, 30 percent were overweight or obese, 25 percent of 12 year old boys had blood pressure above that recommended by the National Heart Foundation, and 37 percent of total dietary energy intake was from fat, with saturated fat comprising 16 percent of total energy (Walsh et al 1992). The survey also indicated that intakes of dietary fibre were below those recommended (NSW Department of School Education 1992).

A Sydney primary school study also found that 30 percent of children were overweight (Sciberras & Darnton-Hill 1985). Similarly, a study on 102 Dubbo high school students in 1995 indicated that 23.8 percent of students are becoming overweight or are overweight. The researcher classified ‘becoming overweight’ as those 8-18 year olds who have a body mass index (BMI) between 18 ½ - 19 ½ (Dalwood et al 1995). The assessment of high school students’ nutritional status is complicated by growth spurts during puberty and the differing ages at which puberty occurs. There are also the constraints related to small sample size and problems of reliability of data, both of which may results in large standard errors. Both of the studies described above used the 24
hour recall dietary assessment method which is subject to bias as individuals can have
significant day to day dietary variations. Furthermore, the majority of students studied
were from Year 7, which may disrupt the representativeness of the results. In addition,
the method relies on students honesty and accuracy of recall. However, both studies
investigated nutritional status of local school children. Such research can provide
information that is useful in determining locally important factors that health
professionals can address.

In 1990, a study conducted by the National Heart Foundation revealed that 40 percent of
students do not eat fruit daily (National Heart Foundation 1990). Children in Australia
have the highest mean total cholesterol levels compared to children from other countries.
Children have a fat intake of 34-37 percent of total energy, and a polyunsaturated :
monounsaturated : saturated fat ratio of 19:36:45. These results are alarming
considering that total cholesterol levels are the most important factor in the aetiology of
coronary heart disease (Magarey et al 1993).

A study by Dalwood et al in 1995 found that the average fat intake of Dubbo high
school students was 34 percent of total energy, with only 29 percent of students
reaching the recommended target of less than 30 percent energy from fat. Sixteen
percent of the students met the recommended fibre target of 30 grams per day, whilst 30
percent reported skipping meals three times or more per week (Dalwood et al 1995).
Skipping meals also is evident in primary school students, with a Sydney study reporting
that 16 percent do not eat breakfast each day (Scarlett 1993). Breakfast is an important
meal. Students who miss breakfast often feel tired, lethargic, have poor concentration,
lack nutrients, and may have a higher rate of absenteeism from school (Hillis & Stone 1995).

In addition to students’ high energy intakes and missed meals, their diets are often characterised by frequent snacking (Heald 1992). Like many Americans, Australians are consuming large quantities of snack items in a wide array of forms (Duffy 1981). Whilst Australians still think in terms of three traditional meals, the distinction between meals and snacks is blurring. Australians in all age groups and socio-economic levels include snack foods in their dietary repertoire (Mackay 1992). It is often difficult for children and adolescents to obtain all their nutrient and energy requirements from three meals a day (NH & MRC 1977). Snacking, if choosing foods which are low in fat, salt and sugar, and high in fibre, is often required for children to obtain sufficient nutrients (Hillis & Stone 1995). In expanding snack choices, there may be a chance of improving the quality of an individual’s diet (McNutt & McNutt 1978).

An individual’s eating habits are influenced by a variety of factors. These include: psychological, social, cultural and economic factors, and food availability (Woodward 1985). A needs assessment of Tasmanian high school students found that the following factors influenced students’ food choices: knowledge, attitudes, self-perceptions (body image), moods, taste, advertising, self-efficacy for nutrition behaviour, peers, parents and teachers (Spillman et al 1994). Factors such as socio-economic change, marketing and advertising are believed to be responsible for deterring children’s food preferences from the most nutritious foods and steering them towards the least nutritious foods (Smith 1993).
Advertising of processed and refined food as a modern way of life often attracts people to overconsume these foods. These foods, especially snacks, are often high in fat and sugars and may lead to deficiencies in nutrient dense foods (World Health Organisation 1993). Foods high in fat and sugar are often advertised on television in children’s / adolescent’s peak viewing times (Hillis & Stone 1995).

The health value of food, that is the nutrient value, can also be an important influence on students’ food choices (Snyder et al 1995). A high school survey in Western NSW found that some students do consider the health value of food they consume (Dalwood et al 1995). One third of the students who use the canteen are dissatisfied with the canteen, with many believing that the canteen ‘doesn’t sell enough healthy foods’ (Dalwood et al 1995:13). As indicated earlier, the majority of student representatives were from Year 7. The responses may have been quite different if there was an even distribution of students’ age. Providing students with indicators as to why they are dissatisfied with the canteen may have been beneficial in determining the why students are dissatisfied with the school canteen. However this prompting method may have lead to bias in students answers.

Eating patterns which are adopted in childhood, adolescence and young adulthood form the basis of an individual’s dietary habits for much of their lives (Bull & Phil 1992). Thus the optimal stage of life to advocate diet modification is during childhood before poor eating behaviours develop (Mueke et al 1992).
2.3 School Canteens

School canteens are an integral part of the school environment (McBride & Browne 1993). It is one of the many sources of students’ dietary intake.

A high proportion of students buy all, or a substantial quantity of the food they consume during school hours from the school canteen (ANF & Dental Health Foundation 1982). The school canteen has the largest food service clientele with a captive audience who flock to the canteen during recess and lunch hour (Hands 1977). Many studies confirm that school canteens are used regularly by up to 80 percent of students (Scarlett 1993). In South Australia it was identified that 40-64 percent of morning snacks and lunches were obtained from the canteen (Evans et al 1983). In a primary school study in inner Sydney, three-quarters of the 700 students used the school canteen one to three times per week, and a further 18 percent four to five times per week (Sciberras & Damton-Hill 1985). Dubbo high school students follow this same trend with 93 percent of students having bought food from the school canteen, and 50 percent of students buying food between one to three times per week (Dalwood et al 1995).

Due to the regular use of school canteens, health workers have recognised school canteens as being an avenue for early intervention to prevent nutrition-related problems (NSAHS 1993). The Department of Community Services & Health (1987) also has stressed the need for health workers to encourage school canteen managers to offer a nutritious food service.
In order to provide successful change, it is necessary to address the students’ level of satisfaction with the canteen. As previously mentioned, 34 percent of Dubbo high school students indicated that they are dissatisfied with the canteen, with many believing that the canteens are not healthy enough. Children also expressed concern that healthy foods are too expensive (Busch 1995). The challenge of meeting cost, appeal and nutritional goals is a challenge shared by many food service workers (Chapman et al 1995).

Contrary to popular belief, provision of nutritious foods and making a profit need not be conflicting objectives (NH & MRC 1977). If a healthy food or beverage is prepared and marketed well, sales will increase and consequently money can be made.

Sample canteen managers in Western NSW have indicated that consumer demand is a high priority in determining what foods are sold. Canteen managers see lack of demand, lack of staff and lack of support from students to be the major problems in introducing healthy foods (McKay 1994a).

Eighty nine percent of Western NSW canteen managers are interested in introducing more healthy options into the school canteen. Yet the foods actually sold in the canteen often do not coincide with the canteen policy or responses provided in surveys (McKay 1994a). Many schools across Australia still sell large amounts of high fat, high salt, high sugar and low dietary fibre products (McBride & Browne 1993; McKay 1994a).

As in many schools, the Western NSW and Northern Sydney Area school canteen manager studies reveal that meat pies and sausage rolls are the most popular foods sold at lunch (NSAHS 1993; McKay 1994a). Both of these items are high in fat with pies...
containing 26 grams of fat, and 28 grams of fat in a sausage roll (Borushek 1994).

The NSW School Canteen Association is an organisation working to develop healthy canteens. It is a non profit organisation with a mission to ‘promote and facilitate the provision of nutritious and health food service in school canteens throughout NSW’ (NSW School Canteen Association 1995b: 9). The association has a set of food product guidelines and an accredited product list which enables canteen managers and food industry to easily identify those foods which will help in the development of a healthier canteen.

Several studies have concluded that the majority of school canteen menus are nutritionally unacceptable as a result of factors such as the ease of preparation believed to be required for high energy, low nutrient dense foods, and the fund raising emphasis placed on school canteens (Evans et al 1983). Other problems recognised by canteen managers and staff include limited opportunities for food-service workers for hands-on training, limited budgets and the need to respond to customer demand (Snyder et al 1995). In a western Sydney primary school study, the canteen managers and teachers ranked the barriers to introducing healthy foods from the most influential to the least influential. These barriers included poor physical environment, lack of volunteer staff, lack of parent and student support, competition with local shops, lack of preparation time, and lack of demand. The barriers in secondary schools were found to be lack of support, the need for profit, local shop competition, lack of food promotion and lack of support from canteen managers (Walsh et al 1992).
Local shop competition has been identified by school canteen managers and principals as a significant barrier to introducing healthy foods. It is believed that students will buy ‘junk foods’ at a nearby store if the canteen does not sell these foods. Fifty-five percent of principals surveyed in Western NSW share this common belief (McKay 1994b). Opposing these findings were results from a South Australian study. They found that with only healthy foods in the school canteen, students still did not go to a nearby shop, therefore there were no reductions in sales or in use of the school canteens (Evans et al 1983).

Canteen workers’ lack of nutrition knowledge, and small business and catering skills also have been identified as major barriers to introducing healthy foods into the school canteen (Stewart & Hunwick 1988). This is inevitable considering that more than 90 percent of canteen staff are volunteer parents (NSW School Canteen Association 1995b). The qualifications of those working in school canteens range from professional to untrained, with many workers having limited food service/nutrition training (Goodman Fielder 1995a). Providing nutrition training and advice may be a successful avenue for improving nutrition in schools. Bull and Phil (1992:113) identified with this solution, noting that ‘school canteen caterers are beginning to respond to nutritional advice’.

Parents working in school canteens in the Northern Sydney Area schools in 1993, suggested solutions to overcome some of these barriers to introducing healthy products in the canteen. Having access to food expo’s (82%) nutrition programs for students, (77%), access to resource material (68%), development of a canteen policy (55%) and
access to the health and nutrition team (50%) were believed to be the most successful solutions. Having a program for parents, students and teachers, along with having a school canteen policy and newsletter where seen as appropriate solutions in a Western Sydney study (Walsh et al 1992). Evaluation of a School Canteen Workshop for canteen workers in Western NSW found that school canteen managers would like future assistance from the health promotion workers. The main topics of interest included development of a menu, food promotion, nutrition and canteen policy development (Dubbo Health Promotion Unit 1995).

A school canteen policy is a useful tool. Recently schools have been encouraged to devise their own individual school canteen policy as it identifies the canteen’s roles and clarifies the principles which are used in the operation of the canteen (NSW Department of School Education 1992). Not all schools in Western NSW have a policy. Thirty percent of the 83 schools with a canteen reported not having a written canteen policy (McKay 1994a).

2.4 Linking the Canteen with the Classroom

School canteens are an integral part of the school environment. School canteen managers, teachers, principals and parents need to develop partnerships in order to successfully develop the canteen (NH & MRC 1977).

In primary and secondary schools across Australia, the importance of nutrition, health and personal development is being taught in the classroom. As a result of both
education in the classroom and within the community, children now have exposure to information regarding the importance of good nutrition (NSW School Canteen Association 1995c).

The aim of the school nutrition, physical education and health syllabus (PD/PE Health) is to develop each student’s knowledge, skills and attitudes needed to understand, value and lead healthy and fulfilling lives (NSW School Canteen Association 1995c). The curricula is most effective if the school supports this education with a health policy and organisational change. If foods available in school canteens reflect the messages taught in the classroom, then behavioural change will be greater amongst students (McBride & Browne 1993).

Principals and teachers in schools are becoming aware of the importance of working with school canteens to emphasize what they teach in the classroom. A Western NSW School Principal survey in 1994 indicated that 74 percent of principals consider the canteen to be an important educational resource (McKay 1994b).

Teachers are becoming increasingly concerned with what is sold in the school canteen. Lack of their influence on the decisions made in the canteen was a major concern expressed by teachers in a survey by the National Heart Foundation in 1990. Teachers also emphasised a desire for the canteen to be a role model of the healthy lifestyle message taught in the classroom (National Heart Foundation 1990). These results reveal that canteen managers and principals should not assume that teachers have no interest in the canteen. Rather, teachers’ knowledge and interest in the canteen should be used
to the canteen managers' advantage to help develop the canteen.

2.5 Health Promotion and Schools

Health promotion aims to enable people to increase their control over and, in the process, improve their health (World Health Organisation et al 1986). Not only does it encompass health education, but it also involves the development of personal skills and encouragement of healthy environments. Health promotion aims at improving the environment and cultural factors by increasing the availability and promotion of nutritious foods, whilst at the same time increasing interest in health through educating society on the benefits of adopting healthier products.

The Ottawa Charter for Health Promotion was developed to achieve Health for All by the Year 2000 and beyond (World Health Organisation et al 1986). The Charter follows principles aimed at establishing collaboration between various sectors within the community. That is, linking industry, government, community, education and health sectors through:

- Strengthening Community Action: This involves using the communities ideas and opinions in the planning and implementation of nutrition programs and action.

- Developing Personal Skills: Through having education resources and information available to individuals' in society, they have an opportunity to expand their knowledge and consequently this knowledge implemented in development of a healthy lifestyle.
• Creating supportive environments: This involves focusing on strategies and programs to create healthier food choices as easier choices. This can be achieved through developing partnerships between food industry and consumers in an effort to increase interest and the availability of healthier food items.

• Reorientating Health Services: The charter identifies the need for the health sector to work more in a direction towards health promotion, with an emphasis on prevention rather than curative facilities (World Health Organisation et al 1986).

• Development of Healthy Public Policy: A policy contributing to safer and healthier goods and services, healthier public services and cleaner and more enjoyable environments.

Food and education are two of the fundamental resources for the provision of good health. Enabling individuals to access resources to achieve their full health potential is a necessary health promotion component. Strengthening community action through mediation between groups in society with different desired outcomes, such as between health professionals, food industry and school canteens, is essential to improve the health of the community. The need to make healthier choices, easier choices is regarded as an important aim of health promotion (World Health Organisation et al 1986). They can be achieved through a canteen policy which creates a supportive environment for healthy food choices.

Throughout Australia and overseas, health promotion workers and nutritionists have identified the important role that school canteens can have in improving school-aged children's current and future health status (McBride et al 1995). It has been found that
students with access to healthy foods in their school canteen display more positive attitudes towards good nutrition (McBride & Browne 1993). Students are quite receptive to health promotion activities and therefore schools are an ideal way to provide information in a cost effective manner (McBride et al 1995).

Programs have been developed and implemented by health workers to improve students' dietary intake. In the Western Australian School Health Project the following health promotion factors were identified for the provision of healthy foods: presence of a canteen policy and canteen committee; and the presence of a canteen manager who both supports and promotes healthy foods in the canteen (McBride et al 1995).

The EATZ Program is a high school nutrition program and competition launched in February 1994 on the Central Coast, NSW. The program was developed to encourage the sale of healthy foods in the school canteen. Schools were required to provide a copy of their school canteen policy before entering in the nutrition-related competition. The success of the EATZ Program indicated that nutrition can be integrated into schools with the help of health promotion workers (Nutrition Education Service 1994).

Similarly, the Northern Sydney Area Health Service worked with school canteen managers to implement healthy school canteen policies, and to increase the number of health foods sold in primary school canteens. It was revealed that workshops and food expo's were the best motivators for change through acquiring knowledge, sharing experiences and ideas, and obtaining support and encouragement (Nutrition Education Service 1994).
2.6 Food Industry

Partnerships between consumers, health professionals and all those involved in the food chain is likely to maximise the effectiveness of education messages portrayed in the community to attain a sustainable environment (Glanz & Mullis 1988).

In Australia there is a growing trend towards an increased number of meals that are eaten outside of the home (Stewart & Hunwick 1988). Thirty three percent of the total food dollar is spent on out-of-home eating, which accounts for over 4 billion meals (Goodman Fielder 1995a). However there is still a surprising lack of studies linking food industry to school canteen development.

Goodman Fielder (1995a) has divided the food service market into four sectors: institutional, hospitality (commercial), restaurant chains and “C” stores. School canteens are classified under the institutional sector along with hospitals, meals on wheels, colleges, clubs, armed forces and nursing homes. Institutional catering services are often not profit-based (Stewart & Hunwick 1988). There are approximately 70,000 end users in the food service market (Goodman Fielder 1995a). Canteen managers believe that the lack of healthy food choices is a major barrier to developing healthy canteens (McBride & Browne 1993). It is the responsibility of end users such as canteen managers to create demand for healthier food options and make this apparent to food industry (Goodman Fielder 1995a).

Food industries are primarily responsive to consumer demands. If consumers request
and will purchase foods lower in fat, salt and sugar, then the food industry will meet this demand if they want to maintain customers (Department of Community Services & Health 1987). It is important and beneficial for the food service industry to know what clients’ interests are, and to work towards meeting these demands (Stewart and Hunwick 1988).

Maintaining customer loyalty is of prime importance to food wholesalers and manufacturers. Once a company has won a customer it is not particularly difficult to keep them, providing that the customer is satisfied, comfortable with the company, respected by the company and provided with good customer service (Mackay 1992).

An American study conducted on the CATCH Eat Smart School Nutrition Program aimed to meet Dietary Goals for School meals by the year 2000 and incorporated the aforementioned marketing principles. Recommendations were formulated from the study. These included: increase the number of tasty, lower fat and lower sodium recipes for foods that are acceptable to students; increase availability of more commodities that are lower in fat and sodium; encourage manufacturers to provide lower fat and lower sodium vendor foods; consider integration of a food service program with a health curriculum in the classroom; invite school food service workers from schools using innovative nutrition programs to training sessions for the other school food service personnel; and provide training for food service directors and managers on preparation methods and recipe modification (Nicklas et al, 1994). However, the appropriateness of these recommendations should be considered as American school lunches are prepared differently to Australian school lunches.
Rather than eliminating food and beverages, modification of current products has been identified as a preferable method to improve nutrition in the school canteen. Whilst in theory it seems as though it would be much easier to simply remove a product from the shelf, this is not practical. Traditional foods which are high in fat, salt and sugar are most readily available as they are perceived by canteen managers to be most profitable. They also are marketed extremely well by the food industry due to their high profitability (Magarey et al 1993).

A recent American study revealed that intervention methods can improve the nutritional value of current products. Changing hamburger patties, cookies, muffins, pizzas and various other foods resulted in vast reductions in fat content (Snyder et al 1992). Examples of Australian food companies that also have modified products include: Australian Specialty Foods has produced a 94 percent fat free hot dog ‘The DogFather’ which enables the consumer to enjoy the popular food which has 66 percent less fat than the regular variety (Australian Specialty Food Group; 1995); Koala Popcorn; Chickadee foods; Milk Marketing products and many more (NSW School Canteen Association 1995a).

2.7 Methodology Used in studies with school canteen managers and food industry

Self-administered questionnaires are a data collection instrument whereby research personnel have limited interference to respondents’ responses (Sarantakos 1993). Many studies have used questionnaires to elicit information from canteen managers. The
Australian Nutrition School Canteen Project, the South Western Sydney Area Health Service (SWSAHS) study in 1991, and the Northern Sydney Area Health Service (NSAHS) school canteen project all use questionnaires to obtain data regarding school canteens (Walsh et al 1992; NSAHS 1993).

The comparative study technique used by NSAHS enabled the researchers to identify with the changes made in school canteens between administering the needs assessment questionnaire, and the post-intervention questionnaire one year after strategies were implemented. An incentive of being entered into a prize competition was offered to those canteen managers who returned the questionnaire (NSAHS 1993).

Similarly, the South Western Sydney Area Health Service designed a survey as part of a needs assessment, and the information was used as baseline data for program evaluation. The descriptive questionnaire to school canteen managers was administered through face-to-face interviews. This is a feasible method if the geographic area is small (Walsh et al 1992).

A needs assessment self-administered questionnaire was mailed to 83 school canteen managers in Western NSW in 1994 and had a response rate of 82 percent (McKay 1994a). This is the most cost effective method compared to telephone or face-to-face interviews across Western NSW which geographically represents 42 percent of NSW. Along with the convenience of completion, questionnaires also help avoid some of the bias and errors that may exist in interviews. Yet mailed out questionnaires require extensive effort to obtain a usable response rate.
There are few studies regarding school canteens working with food industry to improve nutrition in school canteens. Focus groups have been identified as an effective method of collecting qualitative data and exploring participants’ attitudes and perceptions on specific issues (Khan & Manderson 1992). Focus groups have been used for many years, and more recently in community research. The relaxed in-depth discussion technique provides an opportunity to discuss issues relevant to a specific target group (Khan & Manderson 1992).
CHAPTER 3  Methodology

The project was carried out from July to November, 1995. During this time various forms of contact were made with both school canteens and food industries. School canteens in the four Health Districts in Western NSW were included in the project. These included the Castlereagh, Macquarie, Orana & Far West areas which cover approximately 42 percent of NSW. These areas are illustrated in Appendix 1.

Schools from the following towns/cities were included: Baradine, Binnaway, Bourke, Brewarrina, Broken Hill, Carinda, Cobar, Collarendebri, Coolah, Coonabarabran, Coonamble, Dubbo, Eumungeria, Dunedoo, Geurie, Gilgandra, Goodooga, Gulargambone, Gulgong, Hermidale, Ivanhoe, Lightning Ridge, Louth, Mendoran, Menindee, Mudgee, Mumbil, Narromine, Nevertire, Nyngan, Tooraweenah, Trangie, Walgett, Warren, Wellington and Wilcannia. However the majority of liaison with schools, food industry and dental health was carried out in Dubbo, NSW.

3.1 The Questionnaire

A questionnaire was developed for school canteen managers in Western NSW. The questionnaire was piloted by other health promotion officers in the Western NSW Health Promotion Unit. The questionnaire was administered to 82 School Canteen Managers in Western NSW in August, 1995. Approval to conduct the questionnaire was granted by the Ethics Committee at the University of Wollongong. The questionnaire, covering
both quantitative and qualitative data, included ten questions which were aimed at evaluating changes made in school canteens in the past 12 months. Also investigated was the effectiveness of current resources, assessing the availability of foods to school canteens, measuring sales figures of certain products, and identifying changes that school canteen managers had made in the past 12 months as a result of the work by Community Nutrition Workers. The collection of data occurred between August and October, 1995.

The questionnaire structure used both open and closed ended questions. Closed questions were used to obtain quantitative food sales figures. Open-ended qualitative questions allowed for questions which had too many potential response categories, such as different snacks sold in each school. They also provide opportunities for respondents to include general comments/opinions.

The 5 major areas covered in the questionnaire included:

1. School canteen policy.
2. Membership and importance of the NSW School Canteen Association accredited food list.
3. Type and sales figures of pies, sausage rolls and bread.
4. Snack foods available, and food changes in the last 12 months.
5. Sources of nutrition information received by schools.
A cover sheet was enclosed in the envelope with the questionnaire. This cover sheet reinforced confidentiality and included a brief description of the study. The School Canteen Managers who had not returned the survey by the requested date were sent a reminder letter. The letter simply reminded the Canteen Manager about the survey, and again emphasised the value of every school’s participation in the project.

Approximately 2 weeks after the reminder letters were posted out, those participants who had not returned the questionnaire were followed-up with a reminder telephone call.

*A copy of the questionnaire, cover sheet and reminder letter can be found in Appendix 2.*

**Sample Area**

The survey was sent to 82 School Canteen Managers in the 36 towns/cities in Western NSW. The list of Canteen Managers was obtained from a previous School Canteen Survey conducted in mid 1994 by a Health Promotion Officer. Schools without a canteen were eliminated from the school canteen mailing list after the 1994 school canteen manager survey.

**Data Analysis For The Questionnaire**

Results from the survey were assigned a data code. The data was then collated and analysed using a Database module of EPI INFO. This is free software for handling epidemiologic data in a standard format. It was developed by CDC (Centre for Disease Control) in Atlanta, USA.
3.2 Sales Figures from School Canteens

The 14 schools with school canteens in Dubbo were contacted by telephone in July 1995. After an introduction and explanation of the study, each manager was asked if they could supply the sales figures of pies, sausage rolls, bread and hot dogs. These schools were willing to provide either invoices, documented daily sales figures or gave figures for an average day. Along with quantities, canteen managers also were asked whether they bought low fat or regular sausage rolls and meat pies, and to specify the bread variety.

3.3 Focus Group with Food Industry

Various local wholesalers and manufacturers were invited to attend a focus group and supper at the Community Health Centre, Dubbo. An open forum approach was organised to discuss local food industries’ opportunities to tap into the school canteen market, and to discuss work that the community nutritionist had been doing with school canteens in Western NSW in the past 12 months.

At least one representative from the following food market sectors were invited to attend: frozen food wholesaler, dairy, bakeries, confectionery, snack foods and beverages. Prior to inviting 11 Dubbo and one Narromine company, each were contacted by telephone to determine the most suitable time for the focus group.

A week prior to the focus group, an invitation either was personally delivered to the worksite or posted in the mail.
The invitation addressed when, where and why the focus group was organised. *A copy of the invitation can be found in Appendix 3.*

One hour was allocated for the focus group and supper. After participants introduced themselves, the study was outlined and the procedures explained to the group (Scott 1991). This was followed by the focus group discussion which addressed the influences on the foods sold in the school canteen, local manufacturers success with school canteens, and many other issues.

At the end of the focus group session, each of the wholesalers/producers were asked to complete an evaluation sheet. The following issues were addressed: prior contact with nutrition health workers, opinion of market for nutritious foods in school canteens and barriers to introducing these foods, what resources they would like provided by the health promotion unit workers, and view of the health value of foods sold by their company.

*A copy of the evaluation sheet can be found in appendix 4.*

**Analysis of Focus Group**

The steps taken to analyse the focus group data followed Murphy et al's (1992) guidelines. An audio cassette tape-recorder was used to tape the content of the focus group discussion. The tape was transcribed and the themes collated. Subtopics and subheadings were used to prepare a summary of the most important ideas.
CHAPTER 4  Results

(A) The Questionnaire

♦  4.1: Response Rate

The questionnaire sample size was 82, with 55 respondents returning the questionnaire. This provided a return rate of 67 percent.

Seventy reminder letters were sent out to school canteens. Those that still had not returned the questionnaire were followed up with a reminder telephone call. It was at this stage that 29 schools claimed that they had not received the initial survey, including all 10 schools from Broken Hill. As a result, a second copy of the questionnaire was posted or faxed to these school canteens.

One survey was faxed back with only the front page, whilst another survey was faxed back with the last page missing. However the results from the two questionnaires were still used in the results.
4.2: Canteen Policy & Membership of the NSW School Canteen Association

Results from question 1 (*Does the canteen have a written policy?*) are shown in Figure 4.2.1.

*Figure 4.2.1 Percent (%) of schools with a school canteen policy*

Sixty three percent of schools either have, or are developing a school canteen policy, whilst 37 percent of schools do not have a policy. One respondent did not answer the question.

A survey of Canteen Managers in Western NSW in 1994 (81.8% response rate) indicated that 44 percent had a canteen policy (McKay 1994a). There has been a 4 percent increase in the number of schools with a canteen policy in the last year.
Results from question 2 (*Is your canteen a member of the NSW School Canteen Association?) are illustrated in Figure 4.2.2. Three respondents did not answer this question.

*Figure 4.2.2  Membership of the NSW School Canteen Association*

Seventy nine percent of respondents from Western NSW school canteens report being members of the NSW School Canteen Association. Twenty one percent are not members. Three respondents did not answer the question. In the past year there has been a 47 percent increase in school canteens that are members of the NSW School Canteen Association. Figure 4.2.3 illustrates this increase.
Results from question 6 (*Does the canteen have a copy of the NSW School Canteen Association accredited food lists?*) found that 38 respondents (70%) have a copy of the NSW SCA accredited food lists. Those respondents that have a copy of the accredited food lists were required to complete an attitudinal scale that specified *how important these lists are in determining the type of food sold in the canteen?*. Figure 4.2.4 illustrates the range of school canteen managers' perceptions in respect to the importance of the food lists in determining foods sold.
Of the 38 respondents, 65 percent consider the food lists to be important influences on the food sold, and a further 21 percent see it as being 'very important'. Four respondents (10.5%) consider the list as being of 'little importance', whilst no respondent indicated that the food list 'is not considered' in determining food sold in the school canteen. Three respondents (8%) indicated that they were 'not sure' whether the food lists influenced food sold.
4.3: Types of Bread sold

Results from question 3a (What type of bread is sold in the canteen?) are shown in figure 4.3.

Figure 4.3 Type of bread used by school canteens

The figure illustrates that 74.5 percent of school canteens sell white bread. Wholemeal bread is sold in sixty percent of canteens, and high fibre bread is sold in 29 percent of school canteens. The ‘other’ types of bread used by 12 (22%) respondents include: Oat bran, multi grain, focaccia, flour tortilla, mighty white, hot dog buns, wholemeal rolls, white rolls, wonder white, kibble & rye mixed grain, molenburg lavash and kibble rolls. One school canteen sold no bread, and recorded this under ‘other’.
4.4: Types of Meat Pies Sold

Results from question 4a (Does the canteen sell meat pies?) are illustrated in figure 4.4.1.

Figure 4.4.1 Percent (%) of respondents who sell meat pies, sausage rolls and party pies in the school canteen.

One respondent did not answer the question. All other respondents sell meat pies in their school canteen. Of the 54 respondents selling meat pies, 76 percent sell regular pies. In addition, 55.5 percent of school canteens sell party pies. Lower fat meat pies are sold in 24 percent of school canteens in Western NSW. The type of meat pies are illustrated in Figure 4.4.2.
Some canteen managers specified the brand name of the meat pie sold. *These can be found in Appendix 5a.*

A regular meat pie (180 gm) has 26 grams of fat, whilst a lower fat meat pie has 12.6 grams (7.2%) fat / 180gram serve. Figure 4.4.3 shows the different amounts of fat in these products.
4.5: Types of Sausage Rolls Sold

Results from question 5a (*Does the canteen sell sausage rolls?*) are shown in Figure 4.4.1. One respondent did not answer the question. The majority (94%) of the 54 canteen managers who answered the question indicated that sausage rolls are sold in the canteen. Of the 51 respondents that do sell sausage rolls, 84 percent sell the regular variety, whilst 16 percent sell a low fat variety. Figure 4.5.1 illustrates the proportion of canteens that sell low fat and regular sausage rolls.
Some canteen managers specified the brand name of the sausage rolls sold in the canteen. *The specified brand names can be found in Appendix 5b.*

Figure 4.5.2 illustrates that a regular sausage roll has 28 grams of fat as opposed to 12.9 grams (7.9%) in the lower fat variety.
Figure 4.5.2  Grams of fat in a regular and lower fat sausage roll

4.6: School Canteen Development in the Past 12 Months

Results from the question *(Has your canteen made changes in the past 12 months in developing your canteen?)* is illustrated in figure 4.6.1.

**Figure 4.6.1.** Percent (%) of canteens that have made changes to develop their School canteen
Five of the respondents did not answer the question. Of the 50 respondents, 39 (78%) indicated that they have made changes in the past 12 months. The changes included both introducing and withdrawing lines. These are tabulated in Appendix 6.

♦ 4.7: Snack Foods Sold

Results of question 8 (What snack foods do you sell in the canteen?) are shown in Table 4.7. Each school recorded the types of snack foods sold in their canteen. These items were collated and the 15 items available in most school canteens were entered into the data analysis.

Two respondents (2/55) did not fax back the whole questionnaire, and the page with this question was missing.

Other snack foods documented by respondents include: Dairy desert, yoghurt, custard, Anzac biscuits, pikelets, dip packs, mamee noodles, cakes/biscuits, roll ups, milkshakes, jelly, hot dogs, home made pizza, chicken burgers and nuggets, salad, carob buds, pretzels, custard, BBQ shapes, dairy dessert and mousse.
Table 4.7  Snack foods sold in the school canteens in Western NSW

<table>
<thead>
<tr>
<th>Snack Food Item</th>
<th>Schools selling this Snack food</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crisps (including 'lite')</td>
<td>64% (34 respondents)</td>
</tr>
<tr>
<td>Lollies (including cough)</td>
<td>47% (25 respondents)</td>
</tr>
<tr>
<td>Fruit (frozen, fresh, dried)</td>
<td>40% (21 respondents)</td>
</tr>
<tr>
<td>Licorice</td>
<td>36% (19 respondents)</td>
</tr>
<tr>
<td>Popcorn</td>
<td>28% (15 respondents)</td>
</tr>
<tr>
<td>Health bars/Muesli bars</td>
<td>26% (14 respondents)</td>
</tr>
<tr>
<td>Ice blocks/ice creams</td>
<td>24.5% (13 respondents)</td>
</tr>
<tr>
<td>Cheese &amp; biscuits</td>
<td>24.5% (13 respondents)</td>
</tr>
<tr>
<td>Chocolate bars/items</td>
<td>21% (11 respondents)</td>
</tr>
<tr>
<td>Bread (sandwiches/buns/crusts)</td>
<td>17% (9 respondents)</td>
</tr>
<tr>
<td>Nutella</td>
<td>17% (9 respondents)</td>
</tr>
<tr>
<td>Le snacks</td>
<td>13% (7 respondents)</td>
</tr>
</tbody>
</table>
4.8: Nutrition Information Sources

Results from question 9 (Where does the canteen get nutrition information?) are shown in Figure 4.8.

Figure 4.8 Nutrition information resources used by school canteens in Western NSW

(N = 53)
Sources that respondents get nutrition information:

- 91 percent (48/53) from the 'Canteen News' NSW SCA newsletter.
- 43 percent (23) from the Western NSW Health Promotion Unit 'Tuckerbox' newsletter.
- 28 percent (15) from Canteen Expo's.
- 24.5 percent (13) from the 1995 (April) canteen managers workshop.
- 19 percent (10) of respondents indicated that they get nutrition information from 'other resources'. Other resources specified were: parents, dietitians, common sense, Dubbo Health Promotion Unit - Jenny Busch, media, T.V. shows, segments in local newspapers 'Daily Liberal' publication, supermarkets, wholesalers, school canteen newsletter, National Health Authority.
(B) Sales Figures from Dubbo School Canteen Managers

Information specifying type and amount of bread, meat pies, sausage rolls and hot dogs was obtained from ten out of fourteen school canteens in Dubbo. The remaining four schools either were not willing to provide the figures, or were unable to be contacted. Information also was obtained from the local baker.

Figures from the local bakery indicated that in May/June 1995 approximately one month after the lower fat meat pies were initially introduced, nine out of the 14 schools had introduced this product. Four months later, figures revealed that three more schools had adopted the lower fat product. Hence 12 out of the 14 schools now use local lower fat meat pies and sausage rolls in preference to the regular varieties. Figure 4.9 shows that the rate of change to the lower fat products was initially quick, with the rate of canteens adopting the product slowing down in the following months.

Figure 4.9  Rate of the Dubbo schools adopting lower fat products
Sales figures from school canteens indicated no change in sales figures when the canteen changed from regular meat pies to the lower fat varieties from the local baker. The canteen managers stated that they were not surprised that sales figures were maintained, as they did not tell the students that the products were lower in fat.

Sales figures from the local bakery indicate that other food outlets in Dubbo are selling these lower fat meat pies. These include: Dubbo Base Hospital Catering Department, Dubbo Country kitchens and Crafts, and Western Plains Zoo.

**Hot Dogs**

Of the 10 Dubbo schools that provided sales figures, eight indicated that they sell hot dogs in winter, and five of the eight canteens sell hot dogs in summer.

The low fat hot dog, the ‘DogFather’ hot dog, was introduced into one Dubbo school. This hot dog has 5.6 grams of fat as opposed to 17.9 grams in a regular hot dog. Figure 4.10 illustrates the difference in fat content of a low fat and regular hot dog.

*Figure 4.10  Grams of fat in a low fat and regular hot dog*
The Dubbo school that introduced the low fat hot dog reported that the low fat variety sells well with sales figures maintained. The machine supplied by the DogFather company made preparation of the hot dogs much easier.

The sales of hot dogs in comparison to meat pies and sausage rolls in one Dubbo school canteen is illustrated in Figure 4.11. The school had 684 students in 1994 according a Principal Survey (McKay 1994b).

**Figure 4.11** Comparison of numbers of meat pies, sausage rolls and hot dogs sold in a Dubbo School Canteen.

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**Other low fat products produced by the local bakery**

The same Dubbo bakery produced low fat foccacia bread (ham & pineapple). This product meets the NSW SCA product guidelines.
Focus Group with Food Industry

Eight food companies replied to attend the focus group/super. Two out of these eight respondents actually attended the focus group. Others present were a Dubbo health promotion officer and a community nutritionist. The following day a wholesaler attended a meeting with the project organiser to discuss the focus group content.

The following issues and themes were expressed by representatives of the Food Industry:

One wholesaler stated, "the Bureau of Statistics tells us that the school canteen is our biggest single customer group in Australia".

♦ Individuality of school canteens

* 'Each canteen is very individualised. Each one is different, hence it is hard to generalise about canteens across Western NSW. Each canteen needs to be treated differently'.

♦ WIN-WIN situation between school canteens, food industry and health promotion.

* 'It is to everyone’s advantage to produce healthy products because everyone wants the same end!'

* 'We as wholesalers want to sell to make profit, canteen managers want to sell to make a profit, and everyone wants their children to be healthy. So there is no real
conflict anywhere. I can't see a conflict, its just coming up with a product that suits everybody - I'm looking for ideas, if you can come up with ideas, we'll manufacture it'.

* Limited popular healthy foods.

Manufacturers don't turn their back on the trade for nutritious foods - it's just hard to think of something’.

* Modifying products & NSW School Canteen Association.

When the community nutritionist suggested modifying products, the wholesalers became very interested, and wanted a copy of the NSW SCA Product Guidelines. They continued on to ask about cost of registration and accreditation.

* Interest in a local workshop/expo

Wholesalers indicated a high level of interest in a workshop. Furthermore, they asked to be informed in enough time so they could get company representatives from Sydney to attend.

* Food industry working with the community nutritionist.

Wholesalers reported that ‘keeping in touch with health promotion workers is definitely an advantage’.

This is only the start, we can’t stop here’. They need to open a door so if product advice is required then they can access expert information. ‘However people won’t just come looking for health promotion officers, rather a contact number, or monthly newsletter would be appropriate’.

School Canteens & Food Industry 52
Factors identified by representative wholesalers and manufacturers as being influences on the foods sold in the school canteen.

♦ SCHOOL CANTEEN MANAGERS:

School canteen managers are seen by wholesalers and manufacturers as being a major barrier in introducing healthy foods into the canteen.

- 'If a canteen manager is health conscious, this will be reflected in the canteen food list. Alternatively, if it isn't seen as a major priority it will be over looked'.

- School canteen managers often will not take on something new because they themselves do not like the food. 'It should be the students who determine whether they like the foods'.

- School canteen managers cannot lose by trying new health products. The food is taken back if it does not sell, so it is hard to understand why school canteen managers will not take on something new.

- Canteen managers need to be taught about small business and running of a catering business. The local wholesalers and manufacturers claim to practically running the canteen for the managers - 'we take the food in to the canteen, we price it, we stack it, we take back the foods that are not sold, we do the accounts, we supply merchandising and point of sale tips and produce'. 'With things such as price rises, canteen managers are always the last outlets to pick up on the changes'.

- 'Many canteen managers are housewives and volunteers'. This in itself is a major barrier, as there is lack of food service/nutrition knowledge and skills. Often canteen managers don't know what is nutritious, and that is why training is important. 'Canteen managers require both retailing and dietitian skills'.
LOCAL SHOP COMPETITION:

Every school has a shop next to the school premises. These outside chains have a huge influence on the school canteen. The school needs to develop and reinforce a rule that the students cannot leave the school grounds during school hours.

PRICE:

'There is ready cash available at schools, this is often why companies market foods for canteens'. 'Price is not a major barrier. If the product that a student wants is available, then the student will buy it'. Parents will send the money if the child wants something a little more expensive. 'The students have the money in their pockets'. 'An example is when a school canteen that usually takes $300 dollars a day, took $600 the day bottled water was installed'. 'The money is there if the product is on demand'. 'Kids have the money, there is no need for canteens to sell foods cheaper than other food outlets'.

PARENTS:

'Parents have a big influence on what is sold in the canteen. Often this is not nutritionally wise'.

STUDENTS:

Students get sick of things quickly, but if you put the same food differently (that is through marketing and promotion), then the kids will buy it. For example, fruit juice lollies (Sunfruits) are now produced in a snake form for variety. Some schools in Dubbo have done surveys to identify what the students want in the canteen.
♦ TEACHERS:
Wholesalers believe that students should not be treated differently to teachers.

♦ MARKETING:
'There is not much time for marketing in school canteens'. However, you can sell anything if it is marketed well. Take cigarettes and bottled water for example. One frozen food wholesaler gets food companies up from Sydney to go around to the school canteens and show canteen managers how to use the product. This was found to be beneficial as canteen managers often lack imagination and education to market the products. 'If healthy products are introduced on a trial basis into school canteens, then there will be more opportunities to make profit'.

♦ EASE OF PREPARATION:
Canteen managers often perceive health foods as being a high prepared product, often 'requiring intensive work'. Canteens often have insufficient staff, and many canteen workers are volunteers. Hence reproducing the highly prepared product often does not work day after day. Unless the food is in a presentable packaged form, it will not work. Volunteers make preparing a product too inconsistent. 'Unless there is a paid worker in the school canteen, it is too difficult to implement healthy products'.

♦ AVAILABILITY:
Availability of healthy foods is a major influence and barrier. Firstly, many canteen workers do not know what a 'healthy product' is. They ask wholesalers everyday whether they have a healthy snack food available. One stated 'but I don't know what a
healthy product is!' Wholesalers are prepared to work with health workers on improving nutrition in school canteens, yet they can not think of healthy products to produce - one said to the community nutritionist 'you come up with the idea, and I'll get it packaged'.

'If students and canteen managers want healthy foods, then we'll sell it!' One wholesaler expressed their frustration in being unable to think of a healthy product suitable for the school canteen, whilst at the same time wanting to improve the nutritional status of children. Yet in an effort to meet this goal they tell the canteen managers to restrict the amount of treat products that have no nutritional value.

♦ DIETARY BALANCE:

Wholesalers believe that school students should be provided with a choice between nutritious and less nutritious foods. 'If a canteen provides only salad sandwiches for example, then the children will go to the corner store'. Children must have the choice.

♦ NSW SCHOOL CANTEEN ASSOCIATION:

Wholesalers do not feel that the association is a major influence on the foods sold in the school canteen. Whilst they were aware of the association, they were not members. One wholesaler said that 'their company resisted the NSW SCA membership because they don't know how much stance they (NSW SCA) hold'. In addition the same wholesaler had a problem with the accreditation scheme in case it is similar to the Heart Foundation tick which was too lenient with products. The wholesalers are aware of the accredited product guidelines, yet they commented that the guidelines are appropriate for fresh food wholesalers, but processed foods are too hard to fit into the criteria.
Focus Group Evaluation Sheet Results

Three wholesalers (including the wholesaler from the meeting on the following day of the focus group), completed the evaluation form. The information from the three sheets are discussed below.

Question 1 & 2

None of the participants had ever spoken to a health worker regarding provision of more nutritious foods. The three wholesalers felt that there is a market for selling more nutritious foods.

Question 3

The barriers identified in producing and selling healthy foods are: Time (2/3), cost (2/3), lack of customer demand (2/3), advertising (1/3), availability (1/3), and management training (1/3). Competition was not seen as a barrier to any of the manufacturers/wholesalers.

Question 4

The following themes were recorded when the two participants attending the focus group were asked to record what they gained from the focus group:

‘Working together, helping and supporting each other is necessary’

‘There is difficulty in keeping up with what is needed’

‘Things change and the product needs to keep up’

‘Everybody has similar problems: time and products’
Question 5

Respondents were interested in the following resources from the Health Promotion Unit, Dubbo.

- The three wholesalers would like:

* Meetings with the community nutritionist from Dubbo Health Promotion Unit (all reported that group consultations are preferable to one-on-one meetings),

* Promotion of nutritious products

* Suggestions from the media officer at the Health Promotion Unit regarding promotion of nutritious foods/beverages.

- Two out of the three wholesalers would like: Direction/activities in health and promotion, and would like to receive more information about the NSW School Canteen Association.

Question 6

One wholesaler highly considers the health value of the foods sold by his company, whilst another considers health value between highly considered and considered. The third wholesaler does not consider the health value of the food sold by his company.

Question 7

None of the wholesalers had any further comments to make on the evaluation sheet.
CHAPTER 5

Discussion

5.1 Availability and Sales of Low Fat, Low Salt &/or Sugar and High Fibre Foods

The sales figures from Western NSW reinforce the literature that meat pies and sausage rolls are popular foods in school canteens (McBride & Browne 1993; McKay 1994a). All school canteen managers reported selling meat pies, whilst sausage rolls are sold in 94 percent of school canteens. Hot dogs also are popular in schools.

The questionnaire reveals that the availability of low fat products in school canteens has increased by 24 percent in Western NSW in the past 12 months. In Dubbo, 12 out of the 14 schools introduced the locally produced low fat meat pies and sausage rolls which were produced by a local baker. Canteen managers already purchasing products from this local baker changed to the modified lower fat products within a month. Other canteens that previously purchased elsewhere took approximately four months to change suppliers and adopt the healthier option.

Like Snyder et al’s (1992) American study, Western NSW also has identified that modifying rather than eliminating popular products is an easier method to implementing healthier food items. From both this study and previous studies, it has become increasingly evident that nutritionists together with health promotion work, can have a positive impact on the development of school canteens. Through encouraging canteen
managers to change suppliers and introduce these healthier products into the canteen,
Western NSW school canteen managers, food industry and nutritionists have provided
students with the choice to improve their nutritional status.

Work of nutritionists, NSW School Canteen Association, and other influences has
helped initiate awareness of the importance of providing healthier food options for
students. Western NSW school canteens have a strong interest in purchasing products
locally. Dubbo school canteen managers demands for healthier products in conjunction
with out of town competition led to the modification of these popular food items.

These results indicate that modification of popular products is an easy and effective
method of introducing low fat, low salt and high fibre foods into school canteens.

White bread is sold in 72.5 percent of Western NSW schools, whilst 59 percent sell
wholemeal bread, and 29 percent sell high fibre bread. These results indicate that
students are either choosing white bread in preference to wholemeal and/or are only
provided with the choice to have white bread. It may be beneficial to advise canteen
managers to provide students with the option of wholemeal bread, or substitute white
bread with high fibre white bread. As a consequence, encouraging local bakers’ to
produce high fibre white bread is an avenue for future work with food industry.
5.2 Nutritionists Work with School Canteens

In the past year there has been a reported increase in the number of school canteens with a canteen policy. In comparing data from the needs assessment questionnaire in 1994 and the questionnaire in 1995, there has been a reported 47 percent increase in Western NSW schools that have become members of the NSW School Canteen Association. As with any self-administered questionnaire, this questionnaire content relies on the respondents honesty which may jeopardise the accuracy of the data collected. The results from this question may be validated by checking results with the NSW School Canteen Association. The appropriateness of comparing two questionnaires with differing response rates of 82 and 67 percent should be considered. It may have been more accurate to compare only those results from schools that had returned both questionnaires. The question wording regarding membership was not the same in both questionnaires, this also may influence the validity of statements made.

Seventy eight percent of school canteens in Western NSW have reported changes made in the development of the canteen in the past 12 months. However relying on respondents' documentation of withdrawal and introduction of food items does not account for actual foods stocked in the canteen. In addition, reliance on canteen manager honesty may have provided misleading data. Visiting school canteens directly is a method which could aid in validating the data and providing more specific information.

It is believed that work carried out by the Western NSW community nutritionist and the
NSW SCA has played a major role in school canteen development. During the past 12 months successful changes have been made and the following activities were conducted:

1995 (April) Western NSW School Canteen Manager Workshop; Supermarket Tour;

These findings correspond to both South Western and Northern Sydney Area Health Services' findings that workshops, expo's, access to nutrition teams, newsletters and other resource materials provide the greatest impetus for change (Walsh et al 1992; NSAHS 1993). It would be beneficial to analyse the questionnaire results from those schools that attended these activities and then document the changes made.

Forty three percent of Western NSW canteen managers reported obtaining nutrition information from the Tuckerbox newsletter. It would be worthwhile to continue supplying this resource to Western NSW canteen managers. With crisps and lollies as the two most common snack foods sold in canteens, it would be appropriate to address this issue in forthcoming Tuckerbox newsletter editions.

As in any study, the validity of using self-administered questionnaires influences the quality, utility and appropriateness of making generalised conclusions.

5.3 Local Food Industries Interests

Few studies have been conducted on food industry working with school canteens and nutritionists to improve the availability of healthier food choices. Before discussing the
results of the study some contraints on the generalisability of the food industry results need to be considered. The food industry focus group only had two participants plus one the following day. This sample representation fails to meet the recommended eight to ten people advised by Khan and Manderson (1992). With a limited number of opinions, the validity of drawing conclusions from a small sample group should be considered. Comments made by local food industry representatives should still be highly considered, yet concrete conclusions should not be drawn from this limited sample group.

Representatives indicated that they are interested in producing healthy foods for school canteens. Local food industry representatives identified school canteens as their biggest single customer group, and like Goodman Fielder (1995a), the local food industry can see the benefits of meeting canteen managers’ demand for healthier food products. In agreeance with the Department of Community Services & Health (1987), local western NSW food industries consider themselves primarily responsive to canteen manager’s demands.

Similar to Stewart & Hunwick’s (1988) belief, Dubbo food industry representatives considered canteen managers to be a major barrier to introducing healthy foods into the canteen. They perceive canteen managers as not only lacking marketing, promotional, retail and small business skills, but also lacking nutrition knowledge. This belief is shared by other food industry employees (Goodman Fielder 1995a). Canteen managers constantly seek advice from local food industries regarding nutritional value of food items. Like Bull & Phil (1992), local Dubbo food industries can see the avenue and
benefits in providing nutrition training for school canteen workers. Working closely with
the community nutritionist is recognised by food industry as being a definite advantage.
Along with being interested in meetings with the Community Nutritionist and Media
Officer from the Western NSW Health Promotion Unit, food industries are interested in
having a local food industry expo with canteen managers. Local food industries also are
becoming more aware and interested in the NSW School Canteen Association.

A case study kit was developed as part of this study to enable nutritionists to meet
Western NSW food industries demands for information on the development of lower fat
products.

5.4 Collaboration between Food Industry, School Canteens
and Nutritionists

Throughout the study the importance of collaboration between food industry, school
canteens and health professionals has been illustrated. In the past 12 months, community
nutritionists have worked successfully with school canteens and more recently with local
food industries. Nutritionists’ work with canteen managers has increased the demand
for healthier products, and enhanced the development of lower fat food products.
Nutritionists and the local baker worked together to achieve accreditation with the NSW
School Canteen Association.

Local food industries’ interest in working with nutritionists and canteens is summed up
by a statement made by one local wholesaler: ‘This is only the start, we can’t stop here’.
The first aim of the study was to measure the availability and sales of foods which are low in fat, sugar &/or salt and high in fibre in school canteens in Western NSW. Results from the questionnaire revealed that meat pies, sausage rolls and bread are sold in most school canteens in Western NSW. A local Dubbo baker produced lower fat meat pies and sausage rolls which have been successfully introduced into 12 of the 14 schools in the past 5 months. Time and work from nutritionists and the NSW School Canteen Association (SCA) in conjunction with promotional work, encouraged canteen managers to change suppliers and adopt the lower fat products. Other bakers extending across Western NSW are now interested in developing and implementing products as a result of the local bakers success. With white bread as the bread used most by school canteens in Western NSW it would be nutritionally beneficial to encourage local food industry to produce high fibre white bread.

The second aim was to evaluate the work nutritionists have done with school canteens in Western NSW in the past 12 months. The various activities that have been carried out by a community nutritionist and the NSW School Canteen Association may have influenced development of school canteens in Western NSW. The questionnaire results revealed that seventy eight percent of Western NSW schools report having made changes in developing the canteen in the past 12 months, yet these changes should be assessed by community nutritionists.
During the 12 month period between the needs assessment questionnaire in 1994 and this post intervention questionnaire, there has been an increase in the number of schools in Western NSW that are members of the NSW School Canteen Association (SCA).

Seventy nine percent of respondents indicated that they are currently members, which is a 47 percent increase in 12 months. Sixty three percent of schools report either having or developing a canteen policy.

Sales figures from both Dubbo school canteen managers and the local baker indicate that modifying a popular food item into a healthier version is a successful method of maintaining sales and increasing customers.

**The third aim of the study was to determine local food industries' interests, ideas and perceptions in promoting and selling healthy foods to school canteens.** Whilst current findings are limited as a result of few representatives, findings indicate that Dubbo food industry representatives have identified the market in working with school canteens who are their biggest single customer group. The focus group revealed that local food industry are willing to work towards meeting canteen managers demand for healthier products, and are interested in future assistance from the Western NSW Health Promotion Unit to produce and implement these products. Food industries enthusiasm in forming partnerships with school canteens and nutritionists should be further determined.
6.1 Recommendations

These recommendations are based on information obtained from this study. The following ideas are aimed at community nutritionists for future work with school canteens, food industry and other health professionals.

‘Tuckerbox’ - Western NSW School Canteens Newsletter

- Extend an invitation to other health professionals to write an article in the newsletter.

- In each edition of the newsletter include:
  - Small article on one of the locally produced food items which is accredited by the NSW School Canteen Association. For example, Village Hot Bake’s low fat meat pies and sausage rolls; Koala popcorn can be purchased from a Dubbo Confectionary Wholesaler; DogFather hot dog can be purchased from a local wholesaler.
  - Address different food misconceptions which were identified through work with school canteens. For example, Do canteen managers think licorice is healthy? ‘Lite’ Crisps - What does ‘lite’ mean? Nutella vs Peanut Butter?

- Whilst many canteen managers want to sell healthy foods, it has been identified that many lack the creativity to put healthy food items together. Provide simple ideas in the newsletter. The book ‘Healthy Snacks’ gives snack ideas (Hodges 1994).
As a result of modification of food products and identification of foods sold, a fat comparison sheet ‘Which choice is better?’ has been developed. This has been made available to the nutritionist at the Western NSW Health Promotion Unit.

Local Food Industry

- Provide local food industry with a copy of the ‘Case Study Report’ which has been developed as part of this project. It discusses the success of a local baker, and highlights the benefits that can be achieved through modifying a popular food. Attached to the case study is the handout published by the NSW School Canteen Association. A copy of the case study is available at Western NSW Health Promotion Unit.

- As requested by local food industry, organise a meeting every four months with the Western NSW Health Promotion Unit Media & Communications Officer and nutrition workers, and local food industry representatives (producers and wholesalers). Rather than having a set agenda, contact food industry prior to the meeting and ask what they would like to discuss.

- Work with local producers that have already produced products that are low in fat, sugar &/or salt and high in fibre. Discuss introducing these products into other food outlets, such as canteens (swimming pool, sports grounds) and take away outlets.

- Whilst wholemeal bread is sold in approximately half of the school canteens,
white bread is still the most popular bread in Western NSW school canteens. Approach the local bakers and discuss modifying white bread to high fibre bread.

- Hot dogs often are sold in both summer and winter in school canteens. Schools should be encouraged to change from the regular hot dogs to the low fat variety - the DogFather Dog. Carol Lemon (02 4393702) has been contacted and is interested in participating in an expo at Western NSW.

- Use the list of brand names of sausage rolls and meat pies (Appendix 5a & 5b) to find out which wholesalers and producers can be contacted for future work towards modifying meat pies and sausage rolls in Western NSW.

School Canteen Workers, Principals, Food Industry, Health Professionals & Guest Speakers

- The workshop criteria has been developed and a bound copy is available at the Western NSW Health Promotion Unit. This includes: why, when and who is to participate in the workshop. It also contains a copy of a draft invitation and resources to be used.
Canteen Managers

- Encourage canteen workers to attend the Canteen Manager Food Service Training Course at Dubbo TAFE College, 1996. Advertise the course in the ‘Tuckerbox’ Newsletter.

School Principal

- Food industry believe that canteen managers are a major barrier to introducing healthy foods into the school canteens. It would be beneficial to produce a set of guidelines for selection criteria for canteen managers. These guidelines then could be used to help School Principals when selecting a new canteen manager. This ensures that the canteen manager should consider nutrition etc.

- Enclose a note in with the ‘Canteen Manager Selection Guidelines’, that requests enforcement of the rule that students should not leave the school grounds during school hours. This may reduce the competition of local shops where many students purchase unhealthy foods.
6.2 Limitations

There were limitations to this study. These include:

• Questionnaire & Data Collected

A mailed out self-administered questionnaire is an appropriate instrument to use when covering a large geographic area such as Western NSW (Sarantakos 1993). A questionnaire is cost effective and appropriate when respondents have to document sales figures. The questionnaire was pilot tested on other health promotion workers, it would have been more appropriate to pilot the questionnaire with school canteen managers.

Response Rate

The response rate of 67 percent is representative of the group surveyed as it is above the expected 65 percent (Hawe et al 1990). However the time and effort involved in reminding canteen managers to return the questionnaire, and re-posting the questionnaire was extensive. This may have been reduced if the participants were provided with an incentive for returning the questionnaire. Various other studies have used an incentive of being entered into a draw for a prize if they return the questionnaire (NSAHS 1993). This may have been an beneficial technique to use.

The extensive effort in completing the questionnaires may have been reduced if the respondents were not required to record sales figures of bread, sausage rolls and meat pies. The sales figures questions were of little importance in contrast to the time and effort taken for documentation.
Comparison between pre and post intervention questionnaires

With a response rate of 82 percent in 1994, and 67 percent in 1995, the appropriateness of comparing the results from the pre and post intervention canteen manager questionnaire should be questioned. The difference in response rate influences the validity of conclusions made. It would have been more accurate to compare only those results from schools that had returned both of the questionnaires. The validity of conclusions made regarding the impact of nutritionists activities such as workshop on the successful changes made by canteen managers requires further evaluation.

Appropriateness of questionnaire content

Asking participants for quantitative sales figures may have been a reason for the additional work required to obtain a valid response rate. Recording sales figures may have been tedious, intimidating and too time consuming to complete.

Reliance on Canteen Manager Honesty

The questionnaire content relies on the canteen managers’ honesty which may jeopardise the accuracy of the data collected. The question regarding NSW School Canteen Association membership is an example where information provided should be queried. There was a 47 percent increase between the results reported in 1994 and 1995. These results could be validated by contacting the NSW SCA for a print out of Western NSW school canteens that are members, and reviewing school canteen stock lists.
Wording of Questions:

Self-administering questionnaires require care in the wording of questions. The question ‘What snack foods do you sell in the canteen?’, may have failed to reveal all the snack foods in canteens. Preferable wording may have been to ask ‘Please tick whether your school sells the following snack foods’- and then list 15 snack foods. However this also has limitations. It would not have revealed those foods of which nutritionists are unaware that are being sold in school canteens, or that were identified during a piloting phase.

All Options were Not Included in the Questionnaire:

Bread rolls should have been included in the questionnaire content. Some schools reported not having bread, but added bread rolls at the bottom of the question. In an effort to get more accurate trends, one bread roll was included as two slices of bread.

Focus Group

A focus group should optimally have eight to ten participants (Khan & Manderson; 1992). The food industry focus group only had two participants plus one participant on the following day. This small sample group limited the diversity of opinions and issues discussed, which inevitably questions the validity of conclusions drawn from the focus group. The conclusions made regarding local food industries’ opinions should be considered, however recommendations for future work should not be based solely on this information. It may have been more appropriate to have informal discussions/interviews at a one-on-one consultation, however this would eliminate the many benefits of an open forum approach.
REFERENCE LIST


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Four Districts Covered in Survey
Castlereagh, Macquarie, Far West & Orana Districts

NSW District Health Services

[Map showing various districts including Castlereagh, Macquarie, Far West, Orana, Lower North Coast, etc., with Major hospitals marked.

© Major hospital
Dear School Canteen Manager

The school canteen plays an important role in influencing the nutritional status of students.

The Western NSW Health Promotion Unit have been working with school canteens in the past year. Information obtained from the school canteen survey in 1994 lead to a workshop in April 1995. In both of these activities, a high level of interest was expressed by school canteen workers.

Enclosed is a second written survey which has been developed to measure both the effectiveness of current resources and the availability of foods to school canteens.

The information received will remain confidential, and will be valuable to provide further direction for work in school canteens.

Thank you for your time, and we look forward to the participation of your school canteen. Could you please return the survey before August 18th, 1995. If you require any further information please contact The Western NSW Health Promotion Unit on (068) 85 8947.

Kind regards

Meg Francis
Student Nutritionist

Smoke Free and Healthy
SCHOOL CANTEEN MANAGER SURVEY, 1995

School Name: ____________________________________________________________

Address: ________________________________________________________________

Canteen Manager name: ___________________________________________________

Contact Telephone: ________________________________________________________

* Please tick the appropriate answer. For example ✓

1. Does the canteen have a written policy?

   --- YES
   --- NO
   --- DEVELOPING

2. Is your canteen a member of the NSW School Canteen Association?

   --- NO
   --- YES

3a. What type of bread is sold in the canteen?

   --- WHITE
   --- WHOLEMEAL
   --- HIGH FIBRE
   --- OTHER (please specify) ________________________________
b. Average number of loaves used per day in summer and winter?

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<thead>
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<th>Winter</th>
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<tr>
<td>High fibre</td>
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<tr>
<td>Other</td>
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4a. Does the canteen sell meat pies?

--- NO - go to question 4
--- YES. If yes, please specify?

--- Regular, Brand?(optional)
--- Low Fat, Brand?(optional)

b. Average number of meat pies sold in the canteen/day?

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>Standard</td>
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</table>

5a. Does the canteen sell sausage rolls?

--- NO - go to question 5.
--- YES. If yes, please specify?

--- Regular, Brand?(optional)
--- Low Fat, Brand?(optional)

b. Average number of sausage rolls sold/day?

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<thead>
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<th></th>
<th>Summer</th>
<th>Winter</th>
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<tbody>
<tr>
<td>Regular</td>
<td></td>
<td></td>
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<tr>
<td>Low fat</td>
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</tbody>
</table>
6. Does the canteen have a copy of the NSW School Canteen Accredited food lists?

--- NO
--- YES.

If YES, how important are these accredited food lists in determining the type of food sold in the school canteen? (circle the number)

<table>
<thead>
<tr>
<th>Very important</th>
<th>Important</th>
<th>Not sure</th>
<th>little importance</th>
<th>not considered</th>
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<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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7. Has your canteen made any changes in the past 12 months in developing your canteen?

--- NO
--- YES. If yes, please list the changes

<table>
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<th>Lines introduced</th>
<th>Lines Withdrawn</th>
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8. What snack foods do you sell in the canteen?


9. Where does the canteen get nutrition information?

--- 'Canteen News' Newsletter (NSW School Canteen Assoc)
--- 'Tuckerbox' Newsletter
--- Canteen Expo
--- Canteen Workshop (April 1995)
--- Other (please specify) 


10. General comments


Thank you for your time and co-operation in completing the survey
11th September, 1995

Dear School Canteen Manager

The Western NSW Health Promotion Unit have been working with school canteens in the past year.

You may recall receiving a survey in the mail 3 weeks ago. I appreciate that you are busy, and would just like to remind you that your survey hasn’t been received. In returning the survey, we are able to identify areas of work required in school canteens in Western NSW.

If you require any further information, please contact the Health Promotion Unit on (068)85 8947. Thank you for your time.

Kind regards

[Signature]
Meg Francis
Student Nutritionist
Appendix 3
Tapping into the School Canteen Market

Focus Group & Supper

When: 10th October, 1995
6.30pm-7.30pm

Where: Dubbo Community Health Centre
2 Palmer Street, Dubbo
Room 1

Why?
In the past 12 months, Nutritionists have been working with School Canteen Managers in Western NSW.
We would like to extend our work to the Local Food Industry to meet the demands of School Canteens.

RSVP: Please phone Meg Francis or Jennifer Busch on 858 951
Appendix 4
1. Have you ever spoken to a Health Worker regarding producing/selling more nutritious foods? Please outline

2. Do you feel there is a market in selling more nutritious foods? Please tick
   
   ____ Yes
   ____ No

3. What barriers do you see in producing/selling healthy foods? Please tick

   ____ Time
   ____ Advertising
   ____ Competition
   ____ Cost
   ____ Lack of Consumer Demand
   ____ Availability
   ____ Other (please specify)

4. List 2 things that you have gained from this focus group?

   1. ______________________________________
   2. ______________________________________
5. What kind of resources can we provide you with?

* __ Meeting with the Health Promotion Unit.  
If yes, what would you like to discuss?

____________________________

Would you prefer one on one consultation, or in a group? 

____________________________

* __ Direction/activities in Health & Nutrition  
(National, State & Local Level)
* __ Promotion of nutritious products to  
  School Canteens  
  Child Care Centres  
  Hospitals  
  Take Away Outlets  
  Worksite Canteens  
  Community events eg Sporting Association
* __ Newsletters to Producers/Wholesalers with nutrition information.
* __ Receiving more information about the School Canteen Association.
* __ Suggestions from the Media Officer at the Health Promotion Unit regarding promotion of nutritious foods/beverages.
* __ Other. Please specify 

____________________________

6. How much do you consider the health value of the foods/beverages sold by your company?

I--------I--------I--------I--------I--------I

Highly Considered    Unsure  Little    Not Considered
Considered            Consideration  Considered

7. Have you any further comments

____________________________________

____________________________________

____________________________________

Thank you for your time!
Appendix 5a
Brand names of meat pies sold in school canteens

Regular: Hot bread shop  
(Narromine)  
Local pies/Bakers pies  
Kellys  
Aussie pies  
Buttercup  
Village Hot Bake  
Fielders  
McCains  
Lithgow Crane’s pies  
Macquarie Bakery pies  
(Wellington)  
Mrs Mac’s  

Low Fat: Good Tucker pies  
(Canowindra)  
Village Hot Bake  
South Dubbo Bakery
Table 4.5.1 Brand names of sausage rolls sold in school canteens

<table>
<thead>
<tr>
<th>Regular:</th>
<th>Wedgewood</th>
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<tbody>
<tr>
<td></td>
<td>Party pies &amp; regular</td>
</tr>
<tr>
<td></td>
<td>Buttercup</td>
</tr>
<tr>
<td></td>
<td>McCains</td>
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<tr>
<td></td>
<td>Village Hot Bake</td>
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<tr>
<td></td>
<td>Local Bakers</td>
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<tr>
<td></td>
<td>Hot Bread Shop</td>
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<td>Lithgow</td>
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<td></td>
<td>Fielders</td>
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<tr>
<td>Low Fat:</td>
<td>Village Hot Bake</td>
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</tbody>
</table>
Changes made in the last 12 months in developing the canteen?

Lines Introduced

Chicken burgers and mayo and cheese
Potatoes + mince + cheese filling
Chickadee roast chicken meat
Dogfather hot dogs
Hot chicken rolls
Low fat pies eg Good Tucker Pies and Village Hot Bake pies
Mini Pizza’s
Low fat sausage rolls eg VHB
Sausage rolls in summer
Pizza in summer
Low fat roundas
Pizza pockets
Home made pizza’s
Hot chips (privately run canteen)
Hot chicken and cheese
Vegetable salad
Fried rice
Tuna
Sausages and chips & Spagetti bol on a Wednesday as a special
Lasagne
Spagetti Bolognase
Fish
Chicken Wings (not crumbed)
Chicken pita
Party Pies
Steak sandwiches
Cheese macaroni
Quiche
Foccacia bread
Tortilla/salad
Savoury mince in winter
Cheese macaroni in winter
Rice dishes in cups
Salad rolls
Salad boxes/plate
Salmon sandwiches
High fibre bread
Wholemeal and multigrain rolls
Lavash rolls
Foccacia pizza
Real chicken in sandwiches
Lavish bread and salad
Breville - apple and cinnamon, banana
Soup eg pumpkin
Low fat muffins
Muffin melts
50c bag of soft lollies
Sultanas
Dried fruit & nut mix
Popcorn
Sunfruits
Licorice
Fruitfuls
Milkyways/milky way spread
Healthy Pretzels
Iced donuts
Lite chips, regular chips and twisties
Cheese and biscuits
Corn on a cob, butter corn
Mame noodles
Home made biscuits/cakes
Baked not fried chicken crimpys, pretzel and pizza shapes
Natural low fat billabongs (ice creams)
Double ups
Yoghurt, yoghurt on a stick
Yoghurt bars
Fresh milk (Oak)
Mineral water
Lite milk and lite yoghurt
Pure juice and milk in exchange for long life milk
Tea/coffee
Spring water
Cans of drink
Bottled water
Apple juice prima
Frozen banana pops
Frozen fruit
Fresh fruit
sliced fruit in season
Bellis dried fruit squares
Likstik ice blocks (25% juice)
Fresh fruit salad
Fruit juices - Today's, 100% juice
Jelly cups
Chicko rolls
Scallops
Mini pies
Pizza rolls in summer
Rounda's in summer
Unhealthy pies
Wedgewood party pies
White bread
Hot dogs
Supa spuds
Chicken burgers
Crumbed fish
Hamburgers
Regular chips
Vegetable nuggets
Corn cobs
Processed meats
Regular pies and party pies
Frozen pizza's
Processed meats - chicken meat
Long life juice and milk
Snickers, Mars bars
Lolly items
Carob buds
Full salt chips
Lollies in high school students
Choc dairy dessert
Funny faces
Cakes/slices/eclairs
Jupiter bars
Chocolate coated ice-creams
Prawn chips and twisties
Chocolate items
Many sweet products
Not such a variety on junk foods
Ovaltines
Sweets
Various lolly lines
Hawaiin pasta