MESSAGES: THE CURRENCY FOR NUTRITION EDUCATION

A.M. LILBURNE

Summary

Community nutritionists plan, implement and evaluate community based interventions by targeting different stages in the food chain within various settings. A review of nutrition promotion in NSW found that few programmes have been adequately evaluated. Some of the difficulties faced by community nutritionists include: lack of papers in peer review journals on community nutrition programmes, over-optimistic job descriptions in terms of how much can be achieved, limited funding opportunities for interventions, short term appointments which do not allow for follow-up and limited resources for evaluation. For community nutritionist to be effective in delivering nutrition messages, it is desirable that they use behaviour change theory, market segmentation, media advocacy and networking.

I. INTRODUCTION

Traditionally, small group education has been the main method community nutritionists have used to achieve a change in dietary practices within the community. Over the past few years, greater emphasis has been placed on planning, implementing and evaluating community based interventions in a range of settings, either addressing groups considered to be at greatest risk of diet related diseases or addressing the whole population. Against the background of this change in approach, the paper will consider the impact of community nutritionists on nutrition of the community. The matters which will be covering are: what nutrition messages the public are exposed to; where these messages come from; how community nutritionists get their message across and the difficulties and opportunities for community nutritionists.

II. WHAT ARE COMMON NUTRITION MESSAGES IN THE COMMUNITY?

There are many nutrition messages in the community. Some of the present nutrition messages in the Australian community, recalled, discussed, considered or acted upon by the general public are: calcium is good for your bones; milk causes mucus; bran keeps you regular; polyunsaturated fats are good for your heart; olive oil is good for you; eat less fat; fat makes you fat; eat less sugar; sugar the natural part of life; fish is good for your heart; red meat is bad for you; avoid eggs as they are high in cholesterol; the human body is not designed to digest more than one concentrated food in the stomach at the same time; eat organic foods; our water is full of poisons; you need vitamin supplements; women need more iron; folate during pregnancy; avoid 'junk' food; "Pick the tick"; and Healthy Diet Pyramid. Some of these messages are scientifically valid, some are not valid while some messages remain controversial.

III. WHERE DO CONSUMERS GET THESE MESSAGES FROM?

People obtain nutrition information from a range of different sources. The media has been shown to be an important source of nutrition information. In one survey, 27% of survey

Human Nutrition Unit, Department of Biochemistry, University of Sydney NSW 2006

participants had referred to print media over the previous 12 months, and 18% used other media (Crawford and Baghurst 1991). Magazines were the most commonly referred to media for nutrition information and advice (37% of shoppers) followed by television (33%), newspapers (21%) and radio (14%) (Worsley 1991). However, messages from the media can be confusing. Fifty two percent of articles in women's' magazines contained misinformation (Reilly 1987). In fact, 15% of consumers cited the media as the main source of poor or confusing information (Crawford and Baghurst 1991). Magazines, newspaper articles and television commercials were viewed as the least reliable source of health information (Worsley 1989).

A review of nutrition-related articles in 12 Australian women's magazines, identified 13 recurrent topics, which often included misleading, inaccurate and/or unnecessary information. There topics were on caffeine (and coffee); red meat; milk and dairy products; sugar; unscientific dietary recommendations (eg. cabbage juice for ulcers, 'zell oxygen' a unique liquid enzyme yeast...stimulating the body's function into healthy activity, etc.); pre-menstrual tension; evening primrose oil; candida (and yeast allergy); processed food compared with fresh food,; organic versus inorganically grown food; bottled water versus tap water (and water safety); 'cellulite' and cleansing and 'detox' diets, and damaging weight loss articles (Hart 1994).

The following is an example of confusion the media can cause. As a community nutritionist in Central Sydney Area Health Service, I received several calls from Early Childhood Sisters asking what advice they should give mothers about a newspaper article which stated that 'Microwaved milk can harm [babies]'. Mothers were extremely concerned. The sensational story was based on a letter to the editor which appeared in the Lancet (December 9, 1989). Researchers determined that by microwaving infant formula for 10 minutes, small amounts of D-proline was formed which has toxic effects. Even though no-one microwaves a baby's milk for more than 45 seconds, and researchers advised that further studies were required, the news article was printed. Clearly, messages are reaching the community before the scientific community has properly debated them. Here a community nutritionist's job is to neutralise a premature and disturbing press release.

Another important source of nutrition information is doctors. In a survey, 19% of respondents referred to a doctor (Crawford and Baghurst 1991). The food industry has identified the importance of general practitioners and has provided a range of nutrition education resources to promote the importance of nutrition and/or the nutritional value of their products. The Australian Meat and Livestock Corporation has distributed pamphlets addressing the importance of iron, with messages such as "7 out of 10 women don't get enough iron. Are you one of them", "Is your baby getting enough iron?". The Australian Sugar Industry sponsored the development of the "Life Be In It" Weight Management Guide to assist general practitioners in managing overweight patients which included consultant cards, patient leaflets, and patient goal cards.

Only 7% of shoppers suggested that supermarkets were their source of nutrition information (Worsley 1991). This figure appears to be low compared with a survey showing that most respondents reported to have paid attention to the nutrient or ingredient labels on foods (73% of men and 83% of women) (Baghurst et al. 1994). In addition, recognition of the National Heart Foundation's point-of-sale promotion 'Pick the Tick' is quite high, 78% of men and 85% of women reported having seen the logo, and 62% of men and 72% of women having used the Tick logo to help choose foods (Baghurst et al. 1994).

Only 8% of the respondents had sought information from a dietitian/nutritionist in the previous 12 months (Crawford and Baghurst 1991). Worsley (1991) and Crawford et al. (1987) found similarly low rates of referrals to dietitians for nutrition information. Considering there are only 1168 working dietitians (who are members of the Dietitians Association of Australia) and only 12% in community health (DAA 1994), it is not surprising that few people refer or are referred to a dietitian.

IV. COMMUNITY NUTRITIONIST'S MESSAGES

In order to implement the Dietary Guidelines for Australians (AGPS 1992) successfully, it is necessary to have an understanding of the current knowledge and habits of the community and an awareness of the types of information of interest to the public (Crawford and Baghurst 1991). Example of the type of data available in the professional literature include nutritional knowledge, and attitudes/concerns (Crawford and Baghurst 1990); practices of Australians (CSIRO 1993) and environmental issues such as availability and price of healthier food choices (Bonner et al. 1992). Research into consumers' knowledge, attitudes and practices, is in the realm of behavioural epidemiology, which aims to discover and validate direct behavioural risk factors of specific diseases and problems (Raymond 1989).

Programmes are developed which address consumers' concerns, build on their knowledge and are relevant to their current practices. Community nutritionists require local information to identify priority target groups and appropriate interventions. For example, local information collected for a dental health promotion program for Vietnamese children included the dental health knowledge, attitudes and practices of school children and their parents, their sources of dental health information, use of health services and a dietary intake survey of Vietnamese and Anglo-Celtic children (Lilburne et al. 1992). The survey determined that Vietnamese school children had similar sugar intakes to other children and tended to be bottle fed for longer (Plaskett and Lilburne 1992), tended to visit dental services for the relief of pain and were not aware of the free dental service. An 8 week campaign on ethnic radio, posters, pamphlets and dental health manuals for English-as-a-second language teachers were developed to raise the community's awareness of the importance of dental health, how to prevent tooth decay and to promote dental services.

Community dietitians are involved in improving nutrition by targeting different stages in the food chain (Oshaug 1992) within various settings, including:

(i) Food handling + processing - foods have been modified by the food industry to meet the School Canteen Association guidelines eg. 'Chickadee' free flowing (ie. not frozen solid) chicken products; 'Roundas' a steamed bread bun with filling in the middle; 'Good Tucker' low fat pies (8% fat); 'Super spud' potato base with sauce and bacon (2.2% fat in ham and cheese) and they have reduced the salt and Pizza Hut developed pizzas for school canteens which meet the guidelines but these are not available in their shops (Fraser 1994).

(ii) Retail food sales - "The Take-away Good Eating Program" accredited take-away outlets within two local government areas in the Illawarra Area Health Service, which offering a range of nutritious food and drink choices and an acceptable standard of hygiene and food handling practices. The incentive for participation in the program was an accreditation logo issued by health authorities and free publicity in the local media (Russell 1993).

Supermarkets provide a setting in which up to 80% of all purchase decisions are made (NH&MRC 1989). A review of point-of-sale promotions has shown that most have been effective in raising consumer awareness and knowledge about the role of diet in maintaining good health and of the appropriate foods and preparation practices needed to improve nutrition. There have been disappointing results in demonstrating changes in purchasing behaviour (Glanz and Mullis, 1988). However, Schucker (1992) showed an increase in market share of shelf-flagged products which met (set) nutrition guidelines.

(iii) Food handling + distribution in household/institutions - The aim of the Long-Day-Care Project (Bunney and Williams 1992) was to improve the nutritional and food experiences of preschool children in care within NSW. The project promoted the importance of nutrition and showed how to provide foods which would meet the recommendation that children will receive at least 50% of the RDIs for all nutrients. A manual 'Caring for children - food, nutrition and fun activities', was developed and distributed throughout NSW. In-service training for directors and cooks of Long Day Care Centres was provided. Practical information on food hygiene, menu planning, budgeting, food ordering and how to develop a nutrition policy was covered. The manual included recipes and food awareness activities eg. table manners,

vocabulary skills, gardening activities.

Meals-on-wheels programme, "Take a ride to good nutrition", was undertaken in the Northern Area Health Service to improve the nutritional intake of meals-on-wheels (MOW) recipients. A food service manual was developed for local MOW services and a nutrition education resource for clients (McMenamin 1993).

(iv) Individual consumption - nutrition education of clients attending Early Childhood Centres by providing health workers with a regular newsletter covering current issues in nutrition, an introducing solids manual for parents groups, telephone enquires, one-to-one consultations etc. (Norberg et al. 1992), nutrition education in schools manual for teachers k-6 (Tan and Lilburne 1993).

An approach which overlaps several stages in the food chain is developing food policies for Local Government Areas. The Penrith Food Project (NSW 2750) aims to increase and improve the supply of affordable, acceptable, nutritious and safe food available to residents and workers, with particular concern for disadvantaged groups; to increase and improve demand for and consumption of, nutritious food; and to create an ongoing local system for improving the health impact of the food supply and monitoring population food habits. The proposed strategies include development of food retailers and transport to shops in new housing developments and underserved areas; increasing the utilisation of appropriate training opportunities in nutrition/catering guidelines that are consistent with the Australian Dietary Guidelines; and monitoring price, availability and promotion of nutritious products (Penrith Food Project Committee 1994).

Media campaigns promoting the nutritional value of foods tend to be organised by the State or Commonwealth departments of health and food industry. "Bread - there's life in every loaf" campaign aimed to position bread as a more desirable and nutritious alternative to less healthy foods. Community nutritionists participate in the campaign at the local level, by conducting food service interventions, multicultural programs, local media coverage and point-of-sale promotions (Macoun 1994).

V. IMPACT OF COMMUNITY NUTRITION PROGRAMS

A review of nutrition promotion in NSW found that very few programs have been adequately evaluated (Heywood and Althaus, 1993). The main problems with impact evaluation (ie. measurements of whether the objectives of the program were achieved), related to study design, sampling, non-response rates and drop-out rates, and comparability of comparison groups. Process evaluations (ie. program reach, participant satisfaction, how well the program is implemented and suitability of materials), tended to be undertaken, however they lacked the qualitative aspects needed to understand why populations were reacting as they were to a particular intervention (Heywood and Althaust 1993)

The evaluation of small group nutrition education sessions are difficult as food intake methods which measure change in behaviour require participants have literacy and numeracy skills, eat their usual food pattern during the recording period and be prepared to record their food intake before and after an intervention. An evaluation of a small group education session involved participants completing a four-day-weighed record before and after the intervention. Twenty nine participants completed the record before the session, 16 declined to repeat the exercise. The participants reported that they had changed their dietary patterns during the weighing and recording period eg. they stopped snacking, completed meals to avoid weighing leftovers and avoided combined dishes (Tapsall et al. 1993). Issues in reproducibility and validity of dietary studies are well described by Block and Hartman (1989). Unfortunately, participants who are prepared to complete a food may not be representative of the community. There are few validated short nutrition questionnaires which can identify changes in dietary practices or assess the adequacy of diets. Evaluation of community based programs is difficult as several interventions may be used to improve the nutrition of the community.

VI. DIFFICULTIES

Community nutritionist deal with a range of difficulties in undertaking their work. Limited data is available on the current nutritional knowledge, attitudes and practices of the general public. There are few papers in peer review journals on planning, implementing and evaluating community nutrition programs.

Nutritional assessment tends not to be a regular part of screening in health services. For example, Child and Family Health nurses only routinely weigh children in kindergarten and if older children appear to be over- or under-weight. Client records in Early Childhood Centres have a considerable amount of nutrition data, though it difficult from these records to determine community prevalence data on infant feeding practices (Mehigan 1992)

Job descriptions for community nutritionists are often over-optimistic in terms of how much a community nutritionist can achieve eg. to develop a strategic plan in three months and implement the plan might appear possible. However, the process requires consultation with health workers and community groups, which leads to many requests for one-to-one consultations with clients, small group education in health centres, schools and community centres. Preparing grants to obtain funds to implement the plan is time consuming.

A nutrition strategic plan has been developed in most Area Health Services in NSW. External funding may then be required to implement the plan. Available funding may not address priority issues. For example, a boarding house study was a priority in Central Sydney as preliminary investigations had shown that residents were not receiving adequate amounts of food and food handling techniques were poor, however a grant application was not successful. Funding has been more readily available for research than for interventions. For example, in Central Sydney external funding was obtained to undertake a survey of nutrition of primary school children and iron intakes of young children. Interventions appear to be more difficult to fund.

Food companies (with their substantial marketing and advertising budgets) often promote foods as 'healthy' or 'good', while community nutritionists are trying to promote the message that no food is 'good' or 'bad'; it depends on the whole diet.

There are only 134 dietitians working in community health, who are also members of the Dietitian Association of Australia. There appears to have been a reduction in the number of community nutritionists since 1992, when 155 dietitians reported being employed in community health.

Evaluating changes in dietary practices is difficult due to the amount of resources required to undertake dietary intake records and the lack of validated short questionnaires to identify changes in practices Community nutritionists are often employed on short term project work which does not allow for follow-up and on-going evaluation.

VII. OPPORTUNITIES

(a) Behaviour change theory

The aim of nutrition messages is to change food-related behaviour, eg. food shopping habits, preparation and eating practices and ultimately nutrient intakes. Nutritionists are not behavioural scientists, and therefore not aware of the theoretical literature on behaviour and behaviour change and can be criticised for their lack of theory-based study designs (Achterberg and Clark 1992). While there has been an increase in use of theory or models in the US (Smith and Lopez 1991), there has been little reported use of theory in Australian interventions (Egger 1991).

Efforts to encourage healthful eating patterns can be more effective if they are based on an understanding of theories of human behaviour that help identify, explain, and predict the determinants of food choices. (Glanz and Rudd 1993). Theories direct the type of information

which needs to be gathered to plan, implement and evaluate nutrition education programs. The social cognitive theory proposes that people are more likely to take some action if they believe the action will bring them something they want and value and people need confidence that they are able to perform the task leading to the rewarding outcome 'self-efficacy'. For example a weight reduction program needs to include incentives which participants value. The incentives may be to look more attractive, be able to wear last years clothes, etc rather than to he healthier. Participants may anticipate barriers to weight reduction (lack 'self-efficacy'), which might inhibit them from participating. Programmes need to address these barriers, which may be an inability to resist temptation, lack of cooperation by whoever prepares meals in the home, inability to cope with social demands, excessive appetite etc. (Hochbaum et al. 1992) The views of participants are needed in planning the program.

Other commonly used models are Health Belief Model, Health Locus of Control Construct, Behavioural Intention Model, Cognitive Theory and Stages of Behaviour Change (Glanz 1991). Fifty eight theories/models have been used in nutrition education studies published in the last decade of the Journal of Nutrition Education (Achterberg and Clark 1992). The challenge now is to select a manageable number from a burgeoning supply of theories (Hochbaum et al. 1992). The application of theory in health promotion and nutrition education is well shown by Glanz and others (Achterberg et al. 1985; Glanz and Rudd 1993; Glanz and Eriksen 1993; Glanz et al. 1992; Glanz et al. 1991).

Even though theories present obvious issues which need to be addressed in a nutrition intervention, the advantages of using a well-tested theory to guide an intervention (Van Ryn and Heaney 1992) are:

(i) Provides clear sense of what the targets of the intervention should be (efficacy, outcome expectations) in order to maximise the likelihood of achieving the desired outcomes.

(ii) Guides a needs assessment by specifying the type of information that would be useful.

(iii) Provides specific ideas about the methodologies or learning activities that would be most effective in modifying the important influences on behaviour. (iv) Shows how to evaluate and improve the program by linking specific activities with important intermediate outcomes that eventually result in the ultimate goal of the program.

(b) Market segmentation

Market segmenting enables the development of messages which are relevant to specific groups within the community. The Journal of Nutrition Education includes studies which identify segments, in terms of motivations (Contento et al. 1988) and psycho-social factors which differentiate people who make desirable changes in their diets from those who don't. (Contento et al. 1993). Contento showed that self-changers differed from non-changers in:

(i) their perception of personal susceptibility to diet-related diseases,

(ii) their perception of benefits from taking preventive health actions,

(iii) their overall health concern,

(iv) the beliefs of those important to the survey participants,

(v) cues to action, and

(vi) chance locus of control (a belief that health is caused primarily by external circumstances).

This information is useful in designing nutrition education programs. Research is also needed to investigate the stages people go through in making dietary change and specific strategies that changers have found important for the dietary change process to be carried out successfully (Contento 1993).

(c) Qualitative data collection

Dietitians require skills in collecting qualitative information about consumer's knowledge and attitudes or access to the information market research companies collect for the food industry, as the information guides the development and evaluation of messages (Egger 1991).

An example of the type of qualitative information which can be collected about consumers understanding of one of the dietary guidelines is: a reply to 'What do you understand by, enjoy a wide variety of nutritious foods?' was: 'All your proteins, all your bits and pieces, everything that you need', another 'Try to buy the best of foods, bran and things like that, within the budget' (Niec and Chan 1993).

(d) Media advocacy

Since a large proportion of consumers obtain their nutrition information from the media, community nutritionists need skills in media advocacy ie. to make nutrition messages newsworthy (Chapman and Lupton 1994).

(e) Collaboration

For community nutritionist's messages to have maximum reach, dietitians need to collaborate with the food industry, health professionals and the education system. Collaboration with the food industry enables nutrition education materials to be developed eg. include the diet pyramid on food products, develop nutrition education resources required in the community and to obtain some of the market research produced for the food industry. As dietitians are considered a credible source of nutrition information (Worsley 1991), and industry has more resources, it is a mutually beneficial arrangement. Community nutritionists working within the education system can aim for sound nutrition to be taught, foods in school to reflect what is taught in the classroom and for children to develop cooking skills. Health professionals need adequate training in nutrition so that they appreciate the importance of nutrition and are able to interpret the scientific merits of articles in the media and are able to explain nutrition advice in terms of foods.

VIII. CONCLUSIONS

Community nutritionists have a challenging role. They require a sound knowledge of the science of food and nutrition, and they need to keep abreast of current food and nutrition issues, make messages palatable to the public and deliver the messages in an effective way.

The effectiveness of community dietitians in promoting their messages is not well documented, and the programs which are published appeared to be poorly evaluated. More resources are needed to evaluate the effectiveness of community based nutrition interventions, so that community nutritionists can justify their existence. The difficulties faced by community nutritionist need to be recognised by funding bodies and employers so that realistic expectations can be set. Given that the role of community nutritionists has changed from predominantly small group education to planning, implementing and evaluating community based interventions, skills in behaviour change theory, media advocacy, and networking are desirable.

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