Original Article

The extent and nature of "health messages" in magazine food advertising in Australia

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Objective: To quantify the extent and nature of healthy eating messages Australian consumers are currently exposed to through magazine advertising. Method: Analysis of healthy eating messages in advertisements found in the top 30 Australian magazines between January and June 2005 was conducted. Advertisements were analysed and classified by source, subject, food category, food type, food occasion, type of claim and disease type. Results: A total of 1,040 advertisements were identified which contained a healthy eating message; after removing duplicates, 390 advertisements were analysed. Culinary and women's magazines contained the greatest number of healthy eating messages. The most frequently occurring food category utilising a health message in an advertisement was dairy and dairy substitutes (71/390), closely followed by fruit and fruit juice (70/390). Overall, 31 advertisements referred to a specific disease, health problem, or risk factor and the most commonly mentioned were heart disease/heart-attack (12) cancer (seven) and diabetes (five). Conclusions: Majority of healthy eating messages currently advertised are by manufacturers, double that of retailers, with non-commercial sources representing only 2%. Processed foods were the most commonly advertised food form which contained a healthy eating message, this is of concern given the generally low nutritional value of these foods. Overall, there are a large number of advertisements in Australian magazines that contain healthy eating messages that may have the potential to communicate to consumers that there are health benefits associated with the consumption of certain foods. Implications: Future research to assess the accuracy of the information in such advertisements, and to examine consumer interpretations of these health message are important.

Key Words: health claims, health messages, food standards, advertising, magazines

INTRODUCTION

Food manufacturers reportedly spend a significant amounts of money on advertising; for instance, in 1999 food manufacturers in the US spent almost $7.3 billion on direct consumer advertising.[1] While detailed Australian figures are not available it is estimated that in 2003 the food industry spent $400 million on advertising and food ranked number five in the top ten product categories advertised.[2] Food companies which produced high-fat and high sugar foods that were highly processed and packaged spent most of this money in both the US and Australia.[3,4] Such advertising can be effective in increasing product purchases.[5] For instance, television advertising has been reported to have a major influence on children's purchasing decisions.[6-8]

Health and nutrition information provided in advertising has been demonstrated to indirectly impact on the demand for food products[9] and the use of health messages in food advertising campaigns is reportedly increasing.[10] One of the first documented initiatives from a food company to promote healthy eating was a combined National Cancer Institute (NCI)/ Kellogg Company campaign instigated in 1984 to disseminate the benefits of a high fibre, low fat diet.[11] Kellogg's included NCI's cancer prevention message on their All-Bran product boxes and in all TV, magazine and newspaper advertising of All-Bran and this was generally regarded as a successful campaign that positively influenced consumer knowledge and behaviour.[12] Following Kellogg's success, more companies have begun to advertise the health benefits of their products, although there has been some criticism of the accuracy of the health claims for some products.[11]

Numerous factors, including taste, cost and convenience of food, have been identified as influencing the food choices made by consumers.[13,14] However, the media has been identified by consumers as an important source of nutrition information[15,16] and this has important implications, as many consumers rely on this information to make their food decisions.[17] In addition, food advertising promotes product recognition among consumers, thereby playing an important role in consumer food decisions. Researchers have reported that the information in food advertisements is often misleading or inaccurate[18,19] and

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some studies suggest that consumers may be sceptical about health claims present in advertisements.[20]

Why study the print media?

Recently, much research attention has focused on the food advertising presented on television, often with a particular focus on advertisements broadcast during children's television programs.[3,18,19,21,22] However, the print media, including magazines, are reported by consumers to be an important source of information[23] and a popular source of nutrition information.[24, 25]

It has also been noted that print advertising can provide more detailed information to consumers.[26] However, only a small number of studies have focused on magazine advertisements. Those studies which have focused on magazine advertising have primarily focused on women's magazines.[27-30] These studies were undertaken in response to changing dietary recommendations[17,27,28,30] and to examine the differences in advertising methods depending on target audience or magazine genre.[29,31] Studies were focused on the types of products advertised and the health messages contained within these advertisements.

A brief review of the literature

Previously mentioned studies have used similar coding procedures initially developed by Barr[27] and later adapted by Pratt and Pratt [30] based on the food pyramid and food groups. Results of these studies have indicated that the most commonly advertised products were for nutrient-poor foods[27] or non-core foods with a low nutrient density,[30] while non-branded fresh foods such as fruit and vegetables were the least commonly advertised products.[31] For instance, Barr [27] reported beverages were the most frequently advertised product in a Canadian women's magazine (*Chatelaine*) between 1928 and 1986; alcoholic beverages were the most frequently advertised drinks, followed by coffee and tea. Hill and Radimer[29] investigated a sample of six Australian women's magazines published in 1992: four that were considered to be targeting mature women, and two other magazines aimed at young women. Results of this analysis showed that the most commonly advertised products in magazines aimed at mature women were sauces and mixes (12%), while alcoholic beverages accounted for the highest percentage (28%) of advertisements in magazines aimed at young women.

Similarly, Lohmann and Kant's[17] analysis of four culinary magazines and two health oriented magazines (published in 1991 and 1994) in the US found beverages accounted for 50 per cent of all advertisements in culinary magazines, with 80 per cent of these advertisements being for alcoholic drinks. Fats, oils and sweets were the most commonly advertised product in the health-oriented magazines, accounting for 27 per cent of all advertisements. Barr's[27] analysis of a Canadian women's magazine (*Chatelaine*) between 1928 and 1986 found that general health and nutrition messages decreased in frequency over those six decades, while messages emphasizing avoiding dietary components increased. Hickman and colleagues[28] examined a sample of four women's magazines during 1975, 1982 and 1990 and found a progressive increase in the number of nutrition claims, particularly in those that focussed on the absence of dietary components such as fat and cholesterol. Hill and Radimer found that the most common nutrition messages in six Australian women's magazines published in 1992 were about the absence of dietary components.[29] Lohmann and Kant explored nutrition claims in US food, women's and health magazines, with two representative magazines from each category selected for analysis in 1997.[31] Across all magazine categories, nutrition claims relating to nutrient modification were the most common. Parker examined nutrition and health claims in food advertisements in three US magazines published between 1998 and 2000 (after regulatory changes which allowed for authorized health claims in US).[32] Results of this study found advertisements were more likely to use nutrient content or structure/function claims.

The purpose of this study was to quantify the number and nature of magazine advertisements containing a healthy eating message. Analysis of this builds an understanding of the position and perspective of the food industry, the public health industry and consumers - and importantly, ascertains any ambiguities which are likely to skew or confuse intended messages.

The delivery of healthy eating messages is important in a contemporary environmental context where overweight and obesity has reached epidemic proportions of over 60% for both sexes in Australia[33] and where childhood obesity is so significant (prevalence of 19-23%) that more focussed community understanding and attention is required.[34] A series of eight resolutions after a 2002 childhood obesity summit in New South Wales were directly related to the media and advertising.[35]

MATERIALS AND METHODS

This paper reports on the first stage of a longitudinal project consisting of a group of observational and experimental studies that examine healthy eating messages as they are actually delivered and received in Australia. The aim of this first stage was to quantify the extent and nature of healthy eating messages to which Australian consumers are currently exposed through magazine advertising.

For the purposes of this project, "healthy eating messages" are defined as those which: promote the consumption of core foods (e.g., fruit, vegetables, dairy) or promote specific foods or ranges of foods as being healthy or refer to the nutritional content of the advertised products (e.g., McDonald's "Healthy Choices", Subway "5 grams of fat", Kraft Lite Peanut Butter "for health nuts"). Note that this is a broader definition than the Food Standards Australia New Zealand definition of "health claims" as claims that describe potential health or performance effects from a food or ingredient. Claims of this type are currently prohibited (with the sole exception of those concerning the benefit of maternal consumption of folate in reducing the risk of neural tube defects).[36]

The magazine advertisements were monitored by manually examining all issues from January to June 2005 of the top 30 magazines in Australia (based on circulation figures for the preceding quarter obtained from *B&T Weekly's* published circulation data).

Table 1. Key terms used for monitoring health messages in food advertisements

Acidophilus	Fresh	Potassium
Amino acids	Gluten	Prebiotic
Antioxidants	Glycemic index (GI)	Probiotic
Artificial colours/flavours	Goodness	Preservatives
Beta-carotene	Guilt	Protein
Bioflavonoids	Health/healthy	Psyllium
Calm/relaxed	Iron	Pure
Calcium	Isoflavones	Resistant starch
Calorie	Kilojoules	Retinol
Catechins	Lean	Riboflavin
Carotene	Light	Rutin
Carotenoids	Magnesium	Salt
Carbohydrates (Carbs)	Manganese	Selenium
Cholesterol	Minerals	Silica
Choline	Mood	Sodium
Chromiuim	Natural	Soy
Concentration (eg implies good brain food)	Niacin	Starch
Copper	Nutrients	Stanols
Creatine	Nutritious	Sterols
Diet	Omega 3s	Sugar
Disease (any mention of a disease or condition)	Omega 6s	Thiamin/thiamine
Electrolytes	Organic	Thin (skinny, slim etc)
Energy	Pantothenic acid	Vitamins
Fat (eg low fat, fat-free)	Performance	Weight
Fibre	Phosphorus	Zinc
Flavonoids	Phytoestrogens	Sterols
Folate / folic acid	Points (Weight Watchers)	

To ensure the reliability of the process a staged coding and analysis process was undertaken. A list of search terms was created by the chief investigators, such that if any advertisement used a word that was on that list, it was to be included in the study. One research assistant searched the January and February issues of the top 30 magazines and flagged and recorded all advertisements with health messages. This data was entered in a table that included the name of the magazine, the issue date, page number, a transcription of the text and a brief description of the visuals. A second research assistant was provided with a random selection of two weeks worth of magazines (with all tags and notations removed) to search using the same search terms. Once this process had been completed, a detailed report was compiled outlining the current search strategy and the areas of discrepancy. This report, along with a sample magazine, was distributed to the chief investigators for re-coding. The chief investigators coded all of the advertisements in this magazine and then met to discuss any discrepancies in their coding. The search and coding criteria were discussed among the entire team and clarified by the chief investigators, and a revised list of terms and search criteria was generated and used for the subsequent coding (see Table 1 for search terms). At the end of the six-month period, all 390 included advertisements were given to the second research assistant to independently code the advertisements that had been identified as carrying healthy eating messages. A report was provided to the chief investigators, who met as a group and resolved any discrepancies between the two research assistants' coding. Figure 1 represents this process.

The advertisements were analysed and classified according to the following criteria:

Source of the advertisement: name of brand, company or organization.

Subject (the main focus of the advertisement): specific food, food category (e.g., dairy), activity or program (e.g., Foods for Life physical activity program), logo or brand (e.g., Heart Foundation Tick).

Food category: advertisements were classified by food category based on 18 food descriptors used to classify foods in the 1995 National Nutrition Survey [37], with two additional categories: one for advertisements for non-specific nutrition programs or logos (such as the Heart Foundation Tick) and the other for alcoholic beverages. Advertisements for multi-component foods or for multiple food products were categorised into more than one food category.

Food type: advertisements were classified into one of two food types (processed foods or minimally processed foods—the latter defined as "foods that are either unprocessed or have only undergone one processing step and do not consist of combined ingredients, for example fruit, nuts, meat, milk, frozen vegetables") or not applicable (for example, because the advertisement was for an activity, program or logo).

Food occasion: snack foods, main meals, beverages; and "other".

Type of claim: health promotion (defined as related to maintenance of good general health, or meeting normal nutrient requirements); disease prevention (includes mention of risk reduction, prevention or treatment of any dis-

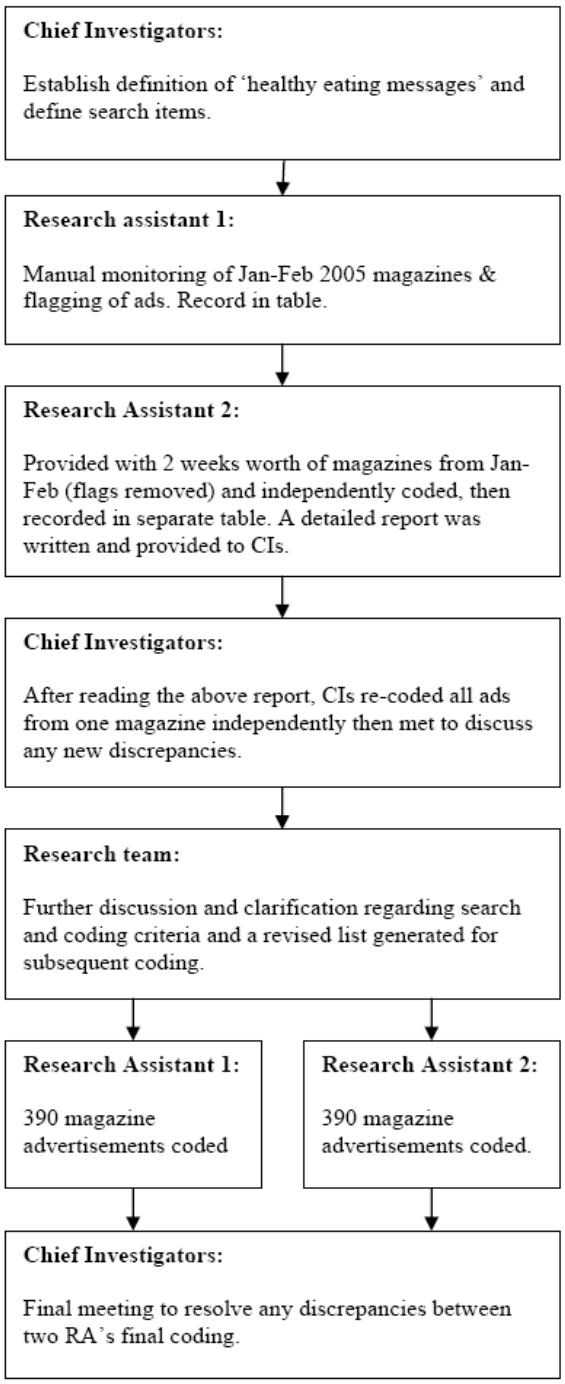

Figure 1. Magazine Coding and Analysis Procedure

ease, symptom or biomarker); and performance enhancement (physical or mental).

Disease type: advertisements that mentioned the product's role in the prevention of specific diseases were further categorised by disease type.

RESULTS

Across the 30 magazines, 1,040 individual advertisements for food products that included a healthy eating message were identified; however, many of these advertisements appeared in multiple publications (or multiple times within a publication). Duplicate advertisements were analysed only once; thus 390 different food advertisements are reported on here.

Advertisements were classified by the source of the message. Of the 390 advertisements, 266 were from a manufacturer or industry group, 115 from a retailer, and nine from a health organisation.

As shown in Table 2, the most frequently occurring food category utilising a health message in an advertisement was dairy and dairy substitutes (71), closely followed by fruit and fruit juice (70). Other commonly occurring food categories included cereals and cereal products (48), meat and poultry (44), non-alcoholic beverages

Table 2. Advertisements with health messages, classified by food category

Food category	Number of advertisements†
Dairy and dairy substitutes	71
Fruit and fruit juice	70
Cereals and cereal products (inc bread, pasta, rice, breakfast cereals)	48
Meat and Poultry (inc mixed dishes)	44
Non-alcoholic beverages (excluding milk and milk substitutes)	33
Vegetables and vegetable juices	31
Savoury sauces (inc salad dressing, gravies)	18
Fats and oils (inc margarines)	17
Sugar products (including jam and honey)	12
Not applicable (eg for Activity, Program or Logo)	8
Fish and seafood	7
Health bars (eg muesli bars)	7
Cereal based products (inc biscuits, cakes, pastries, pizza)	6
Soup	5
Snack foods (in potato crisps; pretzels)	4
Confectionery	3
Legumes and pulses	3
Eggs	2
Nuts and seeds	1
Alcoholic beverages	0
Total	390

†Duplicate advertisements were recorded as one advertisement.

Table 3. Diseases/conditions/risk factors mentioned in advertisements with health messages

Disease/condition	Number of advertisements
Heart/heart disease/heart attack	12
Cancer	7
Diabetes	5
Overweight/obesity	3
Bowel/intestinal illness	3
Cardiovascular disease	2
Respiratory illness	2
Anxiety/insomnia/migraine	1
Cholesterol	1
Irritable bowel syndrome	1
Liver problems	1
Dental decay	1
Prostate (health)	1
Bone (health)	1
Spina bifida	1
Bladder problems	1
TOTAL	43

Table 4. Advertisements with health messages, classified by publication

Publication	Number of advertisements
Fresh	164
Woman's Day	114
New Idea	100
Australian Good Taste	98
Super Food Ideas	97
Australian Women's Weekly	83
Australian Family Circle	53
Weight Watchers	50
Delicious	43
Who Weekly	36
NW	31
Better Homes & Gardens	28
Donna Hay	20
New Woman	19
That's Life	15
Good Taste	12
Marie Claire	12
Cosmopolitan	11
Cleo	9
Reader's Digest	9
K-Zone	7
Burke's Backyard	6
Total Girl	6
TV Week	5
Dolly	3
Ralph	3
Take 5	3
Australian House & Garden	2
FHM	1
Girlfriend	0
Total	1,040

(33), and vegetables and vegetable juices (31). The only other categories that were advertised more than 12 times across the 30 magazines (i.e., more than twice a month) were savoury sauces (18), fats and oils (17), and sugar products (12).

Of the 390 advertisements, 240 were for processed or manufactured foods and 142 were for minimally processed foods. This coding was not applicable for the remaining eight because, for example, the advertisements were for an activity, program or logo. In terms of food type, 148 were for snack foods, 87 for main meals and 58 for beverages. The remaining 97 were classified as "other".

Some 31 advertisements referred to a specific disease, health problem, or risk factor and 11 of these mentioned multiple diseases. Table 3 shows the frequency with which identified diseases, health problems, or risk factors were mentioned. The most commonly mentioned were heart disease/heart-attack (12) cancer (seven) and diabetes (five).

For the purpose of this part of the analysis all food advertisements identified as carrying a health message (1,040) were included, as this better illustrated the number of such advertisements that a publication's readers were potentially exposed to over the six-month period. Table 4 lists the number of advertisements by publication.

Of the 30 magazines analysed, 14 were targeted at women, five had a culinary focus, four were targeted at youth and children (including two magazines targeted at teenage girls), three had a home and lifestyle focus, two were targeted at adult men and two were considered generalist. Women's magazines and culinary magazines contained the greatest number of healthy eating messages: 655 and 270 respectively. Table 5 shows the average number of health message advertisements by magazine focus.

As shown in Table 4, eight of the magazines included 50 or more advertisements containing health messages over the six-month period. Three of these magazines (*Fresh*, *Australian Good Taste*, and *Super Food Ideas)* had a culinary focus; four *(Woman's Day*, *New Idea*, *Australian Women's Weekly* and *Australian Family Circle*) were targeted at women and one magazine (*Weight Watchers*) had a weight loss focus.

There were 12 magazines that included fewer than 12 such advertisements over the six-month period (i.e., averaged fewer than two per month). This group included the only two male-targeted publications (*Ralph* with three advertisements and *FHM* with one); the two child-targeted publications (*K-Zone* with seven and *Total Girl* with six); and the two gardening magazines in the sample (*Burke's Backyard* with six and *Australian House & Garden* with two). Other publications with low numbers of health claim advertisements included the female-targeted publications *Cosmopolitan* (11) and *Cleo* (9); the teenage-girl-targeted publication *Dolly* (3); as well as the *Reader's Digest* (9), *TV Week* (5), and *Take 5* (3). One magazine (*Girlfriend*), which has a teenage-girl target audience, contained no food advertisements with health messages.

DISCUSSION

This paper presents the results from the first stage of an ongoing study that focuses on healthy eating messages in advertisements from 30 popular Australian magazines. The magazines used for this study were the 30 top selling

Table 5. Healthy eating advertisements by magazine type

Magazine type	Number of magazines in type category	Number of health messages	Average number of messages per magazine title
Culinary	5	270	54
Women's	14	655	46.8
Home & lifestyle	3	36	12
Men's lifestyle	2	4	2
Youth & kids	4	16	4
Other	2	59	29.5
Total	30	1040	34.6

magazines at the time the study was conducted. However, these results would not be representative of all messages presented to consumers via the media, given that the largest proportion of food manufacturers' advertising spend is for television.[38]

The magazines analysed in this study covered a broad spectrum of genres that included, for example, major women's and women's lifestyle magazines, and culinary, home and garden, men's and youth magazines. Previous studies have primarily focused on one genre of magazines, namely women's magazines.[27-30] No previous published studies have explored such a wide array and large number of magazine types, although Lohmann and Kant [31] compared magazines from three different genres (food, women's and health) and found that food magazines contained the greatest number of food advertisements, followed by women's magazines.

When magazines were categorised into audience groups, it was found that culinary and women's magazines contained the greatest number of advertisements containing healthy eating messages per magazine title. Healthy eating messages, however, were virtually absent in magazines targeted at men, children and teenagers, perhaps suggesting that other motives for food purchase (such as taste or convenience) are seen to be more important when targeting these groups of consumers.

It is important to note that this study examined only advertisements containing healthy eating messages, while previous studies have examined messages in all food advertisements – as a result, and as would be expected, there are differences in findings in relation to, for example, the proportion of advertisements in each food category. Thus the current study found that dairy and dairy substitutes, fruit and fruit juice and cereal and cereal products were the food categories most commonly advertised that *contained health messages*, whereas previous studies (which examined all food-related advertisements) found that non-core food items or foods with a low nutrient density were the *most commonly advertised* products.[17, 27, 29-31] These differences can be attributed to a number of factors, including healthy eating messages being more relevant to core food products (and conversely less applicable to, and perhaps even contrary to, the main messages in advertisements for non-core products). Further, the requirements for making a nutrition-related claim set out by Food Standards Australia New Zealand or the voluntary Code of Practice on Nutrient Claims in Food Labels and Advertisements, prohibit the use of nutrition-related claims on foods that exceed specified levels of saturated fat, sodium and sugar and on particular categories of food such as alcohol and baby foods.[39, 40]

Few studies have examined the form of food that is advertised. The current study found that processed foods were the most commonly advertised food form among those advertisements identified as containing a healthy eating message, outnumbering advertisements for minimally processed foods by almost two to one. This is consistent with the results of an analysis of food advertisements in three women's magazines, which found that canned and bottle foods were the most commonly *advertised* products.[30] However, it is a finding worthy of further investigation given that, in general, processed foods are less nutritious than minimally processed or unprocessed foods.

This study provides insight into areas previously unexplored in content analysis studies of food advertisements in magazines. The current study found that the majority of advertisements containing healthy eating messages were manufacturer-generated, at almost double the rate of retailer advertisements and, surprisingly, that healthy eating messages from non-commercial sponsors were extremely rare (constituting only 2% of the identified advertisements).

The majority of the advertisements made general claims relating to health promotion (i.e., contained a statement or an implication that consuming the advertised product would improve the consumer's general health or well-being). Healthy eating messages which mentioned specific disease conditions appeared in just under 10% of the identified advertisements, and were primarily related to the prevention of heart conditions (including heart disease and heart attack), cancer (focussing predominantly on antioxidants and high-fibre foods) and diabetes (generally focusing on the glycemic index).

There are a large number of magazine advertisements which contain healthy eating messages (defined as promoting the consumption of core foods or promoting specific foods or ranges of foods as being healthy or referring to the nutritional content of the advertised products) which may have the potential to communicate to consumers that there are health benefits associated with the consumption of certain foods.

It will be important for future research to assess the accuracy of the information in these advertisements and to examine consumer interpretations of these health messages in order to ensure that the Australian public is being provided with accurate and understandable information about the effects of different foods and food ingredients that enables them to make appropriate food choices.

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AUTHOR DISCLOSURES

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澳大利亞雜誌食品廣告的健康訊息的程度和特性

目的：針對澳大利亞雜誌廣告帶給消費者的健康飲食訊息的程度和特性做量化的探討。方法：檢視 2005 年 1 -6 月間的前 30 名雜誌刊載的廣告中透露的健康飲食訊息。對這些廣告做分析且依據來源、主題、食物類別、食物型態、食物場合、聲稱種類和疾病種類加以分類。結果：總數 1040 個廣告被認為有健康飲食的訊息，但在排除相同內容之後，剩下 390 個廣告進行研究分析。在烹飪和女性雜誌方面出現最多數的健康飲食訊息。食物類別方面以乳製品及乳品替代品的廣告最常使用健康飲食訊息(71/390)，緊接著為水果和果汁(70/390)。整體而言，有 31 個廣告內容是針對特定疾病、健康問題或危險因子，且最常被提及的是心臟病/心血管疾病(12)、癌症(7)和糖尿病(5)。結論：現今大多數的雜誌廣告健康飲食訊息是由製造廠商來做宣傳，是零售業的兩倍，而非廣告來源的僅佔 2%。食物型態方面以加工食品的廣告最常含有健康飲食訊息，這是值得關注的，因為它們一般是營養價值較低的食物。總結來說，澳大利亞雜誌廣告中的健康飲食訊息，可能有力地傳播給消費者關於吃某種食物有益健康的聯想。啟示：迫切需要未來研究去評估這些廣告訊息的正確性和檢測消費者如何判讀這些健康飲食訊息。

關鍵字：健康聲稱、健康訊息、食物標準、廣告、雜誌