Just add a pinch of salt!—current directions for the use of salt in recipes in Australian magazines

Jacqui Webster, Elizabeth Dunford, Federica Barzi, Bruce Neal

Background: Australians currently consume too much salt causing adverse consequences for health. The media play an important role in the provision of nutrition advice to consumers. Previous research shows that many foods advertised in consumer magazines are high in salt, but little research has examined magazine recipes in this context. The aim of this project was to summarize directions for salt use in recipes in leading Australian magazines. Methods: In August 2007 and 2008, the top 10 magazines by circulation that included at least five recipes, were examined. Standardized information was collected about directions for salt use in recipes. Results: Three hundred and thirty recipes were identified in 2007 and 417 in 2008. About 68% of recipes included high-salt ingredients, 37% instructed to season with salt, 10% instructed to add a specific quantity of salt and 15% recommended selection of low-salt ingredients. There was substantial variability in directions for salt use in recipes between magazines, but no clear differences between 2007 and 2008. Conclusion: Many recipes advised to add salt in direct contradiction to national dietary guidelines. There is clear potential for editorial guidelines on salt use in recipes to play a role in advancing public health efforts in Australia and other such nations.

Keywords: dietary, nutrition policy, printed media, public health, sodium.

Introduction

In most developed countries, vascular disease is the leading cause of disease burden with most of the population having adverse levels of one or more risk factors. Elevated blood pressure levels are associated with greatly increased risks of stroke, heart attack, heart failure and kidney disease which are chief causes of death and disability in most of the world. Poor diet and unfavourable behavioural patterns drive blood pressure levels up throughout life with excess salt consumption being a major cause of the progressive rise in blood pressure with age. In 2007, the World Health Organisation released a technical report which included the recommendation that all Member States have a national salt reduction strategy as part of efforts to combat the rise in chronic diseases.

In Australia, as in many other countries, average salt consumption is well above what is required for good health. Current estimates from dietary modelling and urinary analysis studies suggest most Australians are consuming between 5 and 13 g of salt daily, compared with the National Health and Medical Research Council (NHMRC) Suggested Dietary Target (SDT) of 4 g/day and an upper limit of 6 g/day. Furthermore, Australian dietary guidelines advise individuals to choose foods low in salt and avoid adding salt to foods during preparation or at the time of consumption.

There are many reasons why people continue to consume excess levels of dietary salt despite recommendations to the contrary, and several of these have been well documented; taste, convenience and cost are all well-established factors influencing food choices. However, the media can also play a significant role, with magazines and cookbooks cited as the fourth leading source of nutritional information after food labels, factsheets and the Internet in a recent consumer survey.

Advertisements are a direct attempt to change food choices but many popular magazines now include recipes that may also influence food purchases, food preparation habits and dietary composition. Recent research in both the UK and Australia has shown that many foods advertised in consumer magazines are high in salt, although specific research about the salt content of recipes in these magazines has not previously been done.

In May 2007, the Australian Division of World Action on Salt and Health (AWASH) launched a national salt reduction campaign. This included a number of monitoring initiatives designed to provide a baseline against which the impact of subsequent interventions might be measured. Accordingly, the primary objective of this survey was to quantify current directions for the use of salt in recipes published in leading Australian magazines with a view to developing simple editorial guidelines that might be used as part of a broader public health effort to reduce levels of salt consumption.

Methods

This project comprised a systematic survey of leading Australian magazines in August 2007 and August 2008, using the same methods for the selection of magazines and the extraction of data in each study year.

Selection of magazines

The leading 10 magazines by circulation were identified with data on circulation obtained from the 2007 to 2008 editions of the Media Titles Australia and New Zealand Advertising and Marketing Resource Guide which ranks Australia’s top 100 national consumer news stand magazines. The top 10 magazines were chosen for study on the basis of both the significant proportion of circulation covered for this type of magazine and the simple, objective, pragmatic and repeatable nature of this criterion. Titles were eligible for inclusion if they were available in Australia, were published monthly and contained at least five recipes for non-dessert items. The August editions were examined each year.
Data collection

For each magazine, the title, circulation, number of pages and number of recipes were recorded, with a recipe defined as a list of ingredients with instructions for making a savoury food dish. For each recipe, standardized data was extracted documenting whether it (i) advised to add a certain quantity of salt, (ii) advised to season with salt, (iii) contained high-salt ingredients (soy sauce, other high-salt Asian sauces, anchovies, olives, capers, stock, bacon, other cured meats or cheese), (iv) advised to select low-salt ingredients or (v) provided the salt (or sodium) content of the recipe.

Data analysis

The characteristics of the magazines were tabulated and summarized as overall means and ranges for 2007 and 2008. Likewise the overall mean proportions of recipes including each recommendation about salt use were summarized and compared for each year. Evidence of differences in the findings for the 2 years was sought by comparing the overall mean results for the 10 magazines between 2007 and 2008 using chi-squared tests. In the absence of any clear differences between the 2 years, the data from 2007 and 2008 were combined, as initially planned, to provide a single estimate for each magazine and an overall summary estimate for all magazines. These summary data combining the results for the 2 years are the basis for this report. Evidence for differences between magazines was investigated by comparing the combined 2 years of data across the 10 magazines using chi-squared tests. While a $P < 0.05$ is widely considered unlikely to have arisen by chance alone, interpretation of differences in this study was done in light of the multiple comparisons made with $P < 0.01$ viewed as a more reasonable indicator of real variability. All analyses were done using SAS.

Results

The 10 magazines meeting the inclusion criteria for this study fell within the top 50 magazines by circulation in Australia. The remaining 40 highly circulated magazines excluded from the study were those that did not meet the inclusion criteria (these were primarily titles with content markedly different to that relevant to this study or titles which were not published monthly). The 10 magazines included were the same in 2007 and 2008 although there was some change in the rankings across the 2 years. In the 2 study years the first, Australian Women’s Weekly, had an average monthly circulation of 567,572 and the last, Australian Gourmet Traveller, an average circulation of 69,901. In 2008, the mean number of pages in each magazine was 157 (range 74–250). For the 2 years combined, the mean number of recipes in each magazine was 38 (range 6–74) (table 1).

There were a total of 747 recipes identified in the 2 years (330 in 2007 and 417 in 2008). About 10% of all recipes recommended the addition of a specific quantity of salt, 37% advised to season with salt and 68% included one or more high-salt ingredients.

Table 1 Characteristics of leading 10 Australian magazines that included five or more recipes for savoury foods

<table>
<thead>
<tr>
<th>Magazine</th>
<th>Circulation</th>
<th>Readership (%)</th>
<th>Readership (% &gt;35 years)</th>
<th>Number of pages</th>
<th>Number of recipes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Women’s Weekly</td>
<td>567,572</td>
<td>79</td>
<td>74</td>
<td>250</td>
<td>19</td>
</tr>
<tr>
<td>That’s Life</td>
<td>375,856</td>
<td>79</td>
<td>66</td>
<td>74</td>
<td>22</td>
</tr>
<tr>
<td>Super Food Ideas</td>
<td>317,763</td>
<td>83</td>
<td>68</td>
<td>114</td>
<td>54</td>
</tr>
<tr>
<td>Good Taste</td>
<td>315,632</td>
<td>78</td>
<td>68</td>
<td>150</td>
<td>46</td>
</tr>
<tr>
<td>Delicious</td>
<td>163,115</td>
<td>73</td>
<td>68</td>
<td>170</td>
<td>47</td>
</tr>
<tr>
<td>Weight Watchers</td>
<td>123,667</td>
<td>99</td>
<td>65</td>
<td>98</td>
<td>14</td>
</tr>
<tr>
<td>Donna Hay</td>
<td>90,042</td>
<td>79</td>
<td>68</td>
<td>186</td>
<td>61</td>
</tr>
<tr>
<td>Notebook</td>
<td>82,826</td>
<td>88</td>
<td>76</td>
<td>194</td>
<td>19</td>
</tr>
<tr>
<td>Australian Gourmet Traveller</td>
<td>69,901</td>
<td>60</td>
<td>73</td>
<td>178</td>
<td>35</td>
</tr>
<tr>
<td>Australian Table</td>
<td>74,946</td>
<td>83</td>
<td>71</td>
<td>146</td>
<td>59</td>
</tr>
</tbody>
</table>

a: Data are averages for the 2 years of data collection (2007 and 2008) with halves rounded up for ‘circulation’ and ‘number of recipes’. ‘Number of pages’ is data from 2008

Table 2 Recommendations about salt use, overall and in each of the leading 10 Australian magazines that included five or more recipes for savoury foods

<table>
<thead>
<tr>
<th></th>
<th>Add a specific quantity of salt (%)</th>
<th>Season with salt (%)</th>
<th>Include high-salt ingredients (%)</th>
<th>Use low-salt ingredients (%)</th>
<th>Add salt + season with salt (%)</th>
<th>Season with salt + use high-salt ingredients (%)</th>
<th>Three or more high-salt ingredients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Gourmet Traveller</td>
<td>14</td>
<td>29</td>
<td>66</td>
<td>3</td>
<td>1</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td>Australian Table</td>
<td>3</td>
<td>19</td>
<td>67</td>
<td>3</td>
<td>1</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Australian Women’s Weekly</td>
<td>3</td>
<td>76</td>
<td>66</td>
<td>18</td>
<td>0</td>
<td>47</td>
<td>16</td>
</tr>
<tr>
<td>Delicious</td>
<td>3</td>
<td>38</td>
<td>76</td>
<td>42</td>
<td>1</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>Donna Hay</td>
<td>43</td>
<td>44</td>
<td>65</td>
<td>23</td>
<td>16</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Good Taste</td>
<td>4</td>
<td>51</td>
<td>73</td>
<td>15</td>
<td>4</td>
<td>37</td>
<td>8</td>
</tr>
<tr>
<td>Notebook</td>
<td>8</td>
<td>70</td>
<td>59</td>
<td>5</td>
<td>5</td>
<td>38</td>
<td>8</td>
</tr>
<tr>
<td>Super Food Ideas</td>
<td>1</td>
<td>36</td>
<td>66</td>
<td>16</td>
<td>0</td>
<td>26</td>
<td>3</td>
</tr>
<tr>
<td>That’s Life</td>
<td>0</td>
<td>14</td>
<td>61</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Weight Watchers</td>
<td>0</td>
<td>0</td>
<td>75</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Overall mean (weighted)</td>
<td>10</td>
<td>37</td>
<td>68</td>
<td>15</td>
<td>4</td>
<td>25</td>
<td>5</td>
</tr>
</tbody>
</table>

a: Data are mean values for the 2 years of data collection (2007 and 2008)

b: $P$-values calculated from chi-square tests
high-salt ingredients. Only 15% recommended the use of low-salt ingredients and 4% provided the salt or sodium content of the recipe.

There were no clear differences between 2007 and 2008 in the overall proportions of recipes making recommendations about the use of salt (all \( P \geq 0.05 \)). For individual magazines there was some evidence of change from one year to the next but the extent to which this might reflect real change or chance was unclear, with no individual magazine showing a consistent trend towards increase or reduction across the measures that were recorded. While the patterns of recommendations about salt use averaged across the 2 years (table 2) did not differ greatly between magazines, there were one or two exceptions. In Donna Hay more than 40% of recipes advised to add a specific quantity of salt while in the remainder of magazines this recommendation was made for only about one in ten recipes. Similarly, there were higher proportions of recipes in Australian Women’s Weekly and Notebook that advised to season with salt although for this recommendation the range was broad across the 10 magazines. Donna Hay was the only magazine with recipes recommending both to add a specific quantity of salt and to season with salt. At the other end of the scale, neither That’s Life nor Weight Watchers had any recipes advising to add a specific quantity of salt, although three quarters of recipes in Weight Watchers included high-salt ingredients. Seven out of the ten magazines included recipes that recommended the use of low-salt ingredients but also recommended to either season with or add a specific quantity of salt.

Discussion

Summary

These data show inconsistency between Australian guidelines for salt consumption and the recommendations made by recipes in highly circulated Australian magazines. Specifically, national guidelines advise against the addition of salt during food preparation yet more than one-third of recipes recommended seasoning with salt. Likewise, guidelines recommend the sparing use of high-salt ingredients, yet more than two-thirds of all recipes included one or more high-salt ingredients. There was no strong evidence of any difference between recipes in 2007 and 2008, which is unsurprising since there has been no systematic effort to influence the editorial policy of print media during this period. There were, however, some differences between the recommendations of individual magazines. These differences may have arisen by chance, may reflect differing editorial policies across titles or variation in the practices of the authors providing the recipes to each magazine.

Strengths and weaknesses

Although previous Australian research has examined nutrition claims in consumer magazines, this is the first study to specifically quantify recommendations about the use of salt in magazine recipes. This is an important distinction because excess salt consumption is a major public health issue for Australia with high blood pressure and smoking being the risk factors identified as joint first leading causes of disease burden in the country. With excess salt consumption being a main reason why blood pressure increases with age, every possible influence upon salt use in the population needs to be carefully examined to understand the potential for change. In addition to the magnitude of the health problem that this study addresses, the design of the project also afforded particular strengths. First, the survey was done using standardized definitions that could be easily understood and applied by a wide readership to ensure the broad comprehensibility of the findings. Second, the study included a substantial number of recipes collected across 2 years. This has served to provide reasonably precise estimates of the statistics calculated and the collection of data in the same month in each year will have ensured that there was no seasonal influence on the year-on-year comparisons made. Finally, the magazines studied were all high circulation and are read by several million people in Australia each month. The recommendations made in the recipes of these magazines are likely to influence the food preparation practices of a significant proportion of the population giving the results a broad applicability of substantial public health significance.

Because data were collected for only 1 month in each of the 2 consecutive years there was limited capacity to investigate temporal trends in the recommendations for salt use. In addition, because the data were collected in only 1 month, it is possible that annual cyclical variation in the recommendations that recipes make about salt use could have been missed. Modelling of the nutrient composition of recipes was not undertaken but would have provided more detailed insight into the likely salt content of each of the foods. However, while technically feasible this would have provided little additional value to the goals of this particular study, which was undertaken primarily to understand the potential value of developing a new strategy targeting the editorial practices of magazines. Given that recipes generally provide little detail about their salt content to readers and are unlikely to change in this regard, the focus for data collection was simple information about practices such as adding/seasoning with salt and using high-salt ingredients.

It is also important to note that salt added at the time of cooking represents only a small proportion of total daily salt intake with the majority deriving from processed foods. Nonetheless, the present focus of recipes is important because consistent messaging about the need to reduce dietary salt across all forms of media will be important in achieving the population-wide change in understanding that is required.

Interpretation

The marked variability between recommendations for salt use in the recipes of the 10 magazines studied implies that decisions about salt content are either at the discretion of the authors contributing the recipes or else are controlled by discrepant editorial guidelines at individual magazines. In either case there would appear to be considerable opportunity for intervention to address the fact that present advice on salt usage in magazines is not consistent with national dietary guidelines. Most consumer magazines pride themselves on providing up-to-date information on health issues and might therefore be amenable to the development of new editorial policies to address salt and other nutritional factors. Within Australia we will be consulting with the editorial staff at magazines to understand how policies that enhance the nutritional value of recipes might be implemented and will continue the current monitoring strategy to evaluate the effectiveness of this program or work. Regular monitoring of magazine recipes in this context will help assess the effects of health promotion efforts such as AWASH’s salt reduction campaign.

Conclusions

These data indicate significant potential for guidance on appropriate nutritional criteria for recipes in magazines. Such
recommendations could address both salt and other important components of food such as total energy, sugar, saturated fat and dietary fiber. Specifically with regard to salt, the findings reported here suggest that editorial advice might recommend against instructions to add specific quantities of salt or to season with salt while supporting the choice of low-salt ingredients whenever possible. In addition editors might be encouraged to accompany recipes with nutritional information including the sodium content of the meal, although this is likely to be more challenging. While the data presented here were drawn from Australian magazines and relate specifically to salt, aspects of the findings would likely be generalizable both to other developed countries and to other dietary components. That said, it would be useful to repeat this type of research in other settings to provide objective confirmation of this assumption.

Conflicts of interest: None declared.

Key points

- Australian study that quantifies directions for salt use in recipes in highly circulated consumer magazines.
- Adds to existing evidence that nutrition messages in the media are not in line with recommendations.
- Identifies editorial policies of magazines as a novel area for intervention in public health nutrition.

References


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