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Abstract

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Disciplines

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Abstract

Health claims on foods act as health messages and have a role in communicating and educating the consumer about diet-disease related issues. Previous studies have suggested that different formats of health claims communicate differently with the consumer. The aim of our study was to investigate whether splitting of the claim (a brief claim at the front package directing consumers to the back of the package where the full health claim is located) and/or endorsement of the claim (by Food Standards Australia New Zealand), have an impact on the acceptance of the claim by the consumer. Participants were recruited by a shopping mall intercept method in two areas of Wollongong and were interviewed face-to-face using a questionnaire. Split health claims were found, in some cases, to produce more positive responses than not-split claims in several areas: they created a higher level of satisfaction with the labelling, they produced a higher level of trust, and they communicated better the health risk on the claim. Endorsement of the claim did not appear to have an influence on participants' response, possibly because of the small print of the approval statement or insufficient levels of awareness of FSANZ among consumers.

Introduction

In Australia the information presented on food labels is regulated by Food Standards Australia New Zealand (FSANZ) and is detailed in the Food Standards Code (FSANZ 2004). Currently, health claims are not allowed to be made on food labels, with the exception of one health claim regarding folate and neural tube defects.

In 1996, FSANZ (known then as the National Food Authority) reviewed the prohibition on the use of health and related claims on food labels (National Food Authority 1996). In December 2003, the Ministerial Council released a policy on nutrition, health and related claims (ANZFRMC 2004). In response to that policy, FSANZ is currently in the process of developing a new standard on health claims that is anticipated to be a part of the Food Standards Code by 2006.

A major study conducted by the US Food and Drug Administration with American consumers in 1997 examined whether different versions of health claim formats had a different effect on consumers' attitudes towards the claim (Levy et al 1997). Their underlying assumption was that some health claim formats would communicate more positive attitudes than others. The study found that different versions of health claims, including splitting (a brief claim at the front of the package directing consumers to the back of the package where the full health claim is located) and endorsement (by a reputable health body) of the claim, communicated differently to consumers, and in some cases even had a negative effect on consumer's attitudes. The variation in the evaluation of the products and health claims by the consumers was partially explained by two important factors: the diet-disease relationship stated in the health claim and the food product on which the health claim appeared.

In addition to its effect on consumers' attitudes, the format of the health claim can also have an effect on the interpretation and understanding of the claim and products' health benefits. Roe and Levy et al (1999) reported that the positioning of a health claim at the front of the package (compared to no health claim) was associated significantly with a greater probability of an information search being limited to the front panel relative to a search that involved looking at the Nutrition Facts Panel ('a truncate information search' as they called it). They also found that those consumers who truncated gave a higher percentage of responses as 'Playback' (defined by them

as ‘effects mentioned specifically in the health claim’) in open-ended questions about the product’s benefits. Truncation also created a ‘halo affect’ (rating the product higher on other health attributes not mentioned in the claim) in some cases. A study by Wansink et al (2001) found that split claims resulted in better understanding of the information than having the long claim at the front. To date, no similar studies have examined Australian consumer reactions to differing health claim formats.

The purpose of this study was to examine whether different features of a health claim’s format have an impact on the acceptance of the message by Australian consumers. The underlying assumption, supported by previous studies, was that different features of the claim may have an impact on the processing of the information presented in it, and therefore on the acceptance or rejection of the claim by the consumer. Specifically, this study aimed to assess whether the health claim format (split or not split, endorsed or not endorsed) has an effect on:

- Consumers’ satisfaction and attention to product labelling, and health claims in particular
- Consumers’ trust in the health claim
- Consumers’ understanding of the claim and the product’s health benefits.

Study Design and Methods

Study subjects

Participants were recruited by a shopping mall intercept method (Bush & Hair 1985) to obtain a demographically diverse sample of shoppers. Two shopping centres within the city of Wollongong were chosen in the suburbs of Figtree and Warrawong, representing two different socio- economic areas (ABS 2001). Shoppers were recruited and interviewed within the shopping malls in a non-random, quota-controlled method with the help of promotional activities such as fliers and posters. One hundred and forty nine shoppers were interviewed in total, 70 in Warrawong and 79 in Figtree. Sixty eight percent of the respondents were female, and most participants fell in the age group of 35-54. Most participants in both shopping centres had at least an upper high-school education background (*Table 1*).

The study was presented as “a survey about how people use food label information” and an incentive in the form of a voucher for hot drink and cake was offered in order to prevent a bias based on the motivation of shoppers towards the topic of the survey. Only shoppers who reported doing more than half of the grocery shopping at home and who were above the age of 18 years were considered eligible for the study. The conduct of this study was approved by the University of Wollongong Human Research Ethics Committee.

Design of tested variables

Two food products were used: one standard product ('lite' milk) and the other with a novel ingredient (orange juice supplemented with calcium). Familiar brand names were chosen in order to minimize the effect of unknown variables. The approved Canadian wording for a health claim was used: “*A healthy diet with adequate calcium and vitamin D, and regular physical activity, help to achieve strong bones and may reduce the risk of osteoporosis. (Naming the food) is a good source of calcium*” (Health Canada 2003).

One of four health claim formats was added to the label of each test product: 1) not endorsed and not split (NE, NS), 2) not endorsed and split (NE, S), 3) endorsed and

not split (E, NS), 4) endorsed and split (E, S). Two control products (one milk and one juice), which contained no health claims, were also tested. The endorsed claim format included the additional statement “Approved by Food Standards Australia New Zealand”. The split claim format had the full health claim on the back of the package with a short statement of “*May help reduce the risk of osteoporosis. See back panel*” on the front, whereas the not-split claim format had the full health claim on the front of the package. In addition to the health claim, two nutrient claims were added to the front of all milk packages: “Low fat” and “High in calcium”. All supplemented juice packages had one nutrient claim on the front of pack - “High in calcium” - and a new and revised Nutrition Information Panel that included calcium and its percentage of RDI.

Collection and analysis of data

All products were presented as realistic mock-ups (copies are available from PW on request). Each participant was shown one of the five possible milk products and one of the five possible juice products, and was interviewed face-to-face, using a questionnaire administered by a researcher. Each subject reviewed one milk and one juice product. Subjects were randomly assigned to a particular combination of product-label formats using a predetermined sequence that took into account all twenty-five combinations. This design ensured a minimum of 29 respondents examined each version of the mock-up products.

The first part of the questionnaire consisted of two open-ended questions (“What information on the package did you find most useful?” and “What kind of health benefits would people get from eating this product?”). Respondents were also asked whether they had read the claim about calcium and osteoporosis (Yes/No). If not, they were asked to look at the health claim on the front of pack before answering eight closed questions, asking the consumers’ agreement with a number of statements, using a nine-point Likert scale (Babbie 1998): “How much do you agree or disagree with the following statements, on a scale of 1 to 9? (9 being agree strongly and 1 being disagree strongly)”. If a subject said they could not answer the question, their response was recorded as “Don’t know”. The eight closed statements related to the three aspects of consumer reactions identified in the aims of the study, as outlined below:

Statements about satisfaction with the label

1. “The package does a good job of telling me about the health benefits of this product”
2. “Normally I would not read the health claim on this package when shopping”

Statements about trust in the claims

3. “If I eat this product regularly it would lower my chances of having osteoporosis”
(If the consumer disagreed they were asked: “could you provide reasons why you disagree?”)

4. “I believe the health claim on this package is true”
5. “This health claim on the package is just an advertising tool to sell more products”
6. “This health claim is approved by the government”

Statements about understanding of the claim

7. (For Juice only): “If you eat this product regularly it would help you get all the calcium you need without having to eat dairy products”
8. “If I eat this product regularly it would lower my chances of having a heart attack”

All data was analysed using SPSS (V10.0.5: 1998-99, SPSS Inc., Chicago II, USA). Analysis of variance (ANOVA) was used to investigate whether there were any significant differences in the mean responses to the products with different health claim formats. Tukey’s post hoc test was used to identify the significant individual comparisons. Likert scale results were also clustered and narrowed to three groups of responses (agree, disagree and neither/don’t know) and differences compared using the Chi-Squared test. A p-value < 0.05 was considered statistically significant. Descriptive statistics were used in the analysis of the open- ended questions.

Results

Satisfaction and attention to product labelling and health claim

Mean responses to the statement “*The package does a good job of telling me about the health benefits of this product*” were greater than 5 for all claim formats on both products, indicating agreement with the statement (*Table 2*). The responses to the juice with the Not-Endorsed/Split (NE, S) claim format were significantly higher than that observed with the control label (7.5 vs 6.0, $p = 0.04$). No other formats were significantly different from the control. Splitting of the claim was also found to have a significant effect on responses in the case of the juice, using a Chi-Squared test, with participants who viewed split claims agreeing more with the statement compared to those shown not-split claims ($p = 0.03$).

For both products, the mean responses for the statement “*Normally I would not read the health claim on this package when shopping*” were below 5 for each health claim format, indicating that subjects disagreed with the statement. In other words, most shoppers said that they *would* read the health claim on the package they saw. However, there was considerable variation in responses and no significant differences in responses towards the different health claim formats were found.

Attitudes of trust towards the health claim

Mean responses towards the statement “*I believe the health claim on this package is true*” were greater than 5 for each claim format, indicating agreement with the statement. No significant differences in responses towards the different health claim formats were found, however, splitting of the claim was found to have a significant effect on the responses towards the milk product using two- way ANOVA (*Table 3*). The split claims had a significantly higher mean response compared to the not-split claims (8.2 vs 7.6, $p = 0.05$).

Mean responses for the milk products with each claim format were greater than 5 towards the statement “*If I eat this product regularly it would lower my chances of having osteoporosis*” (*Table 4*). Mean responses towards the juice product were more varied. For the endorsed/non-split (E, NS) and control products the mean responses

were less than 5 suggesting disagreement with the statement. For the juice only, the Endorsed/Split (ES) claim had a significantly higher mean response value than the Endorsed/Not-Split claim (E, NS) (6.4 vs 4.2, $p = 0.02$) (Table 4).

In the case of juice, the three main explanations given by participants in response to the open-ended question about why they disagree with the statement “*If I eat this product regularly it would lower my chances of having osteoporosis*” were (in descending order of frequency): “*Not enough/ need to consume a lot of it*”, “*Need other factors as well such as the whole diet, exercise...*”, and “*Dairy products are the main source/ are essential*”.

Forty-two percent and 52% (for the milk and juice respectively) of participants who believed in the health claim also agreed that the claim was just an advertising tool. Of those who did not believe in the health claim, 60% and 85% (for the milk and juice respectively) thought it is an advertising tool. Thirteen percent of participants answered ‘don’t know’ to the statement “*This claim on the package is just an advertising tool to sell more products*”. No significant differences in responses towards the different health claim formats were found for this statement.

Overall, 26% and 21% percent of participants (for the milk and juice respectively) answered ‘don’t know’ towards the statement ‘*This health claim is approved by the government*’. Of those people who believed in the health claim, 45% and 52% (for the milk and juice respectively) thought that the health claim was approved by the government, compared to 22% who did not. Two-way ANOVA tests showed that mean responses for the endorsed claims were significantly higher than the non-endorsed claims for the statement “*This health claim is approved by the government*” for the milk product only (6.2 vs 5.0, $p < 0.02$).

Understanding of the health claim in its context

The statements “*If you eat this product regularly it would help you get all the calcium you need without having to eat dairy products*” (for the juice only) and “*If I eat this product regularly it would lower my chances of having a heart attack*”, were asked to investigate whether participants would attribute health benefits to the product

other than the one in the health claim. Mean responses towards the first statement were below five for all health claim formats on the juice product, indicating disagreement. Mean responses for the second statement were below five in the case of the juice product, and, in the case of milk, were above five only with the NE,NS claim and the control label format. No significant differences were found in mean responses for the different claim formats for both statements (overall mean = 5.1).

At the beginning of the interview, participants were asked: “*What kind of health benefits would people get from eating this product?*” Each participant could give up to three answers. “High in calcium” was the benefit stated by the highest percentage of participants for both the milk and juice products (64% and 44% respectively) (*Table 5*). The second most frequently mentioned benefit was “High in vitamin C” for the juice and “Low fat” for the milk. Following these nutrient content claims the third and fourth, and fourth and fifth, most frequent response to the milk and juice respectively were “decreased risk of osteoporosis” and “build strong bones”. Twenty-two and seventeen percent of participants (for the milk and juice respectively) said the product “Reduces the risk of osteoporosis” while fifteen percent (for both products) said it helps “Build strong bones”.

The two answers that were related to the health claim (‘reduces the risk of osteoporosis’ and ‘built strong bones’) were tested to find out whether there are any differences in the frequency of responses according to the claim format. No significant differences were found.

Discussion

There are several limitations to bear in mind when considering the results of this study. We used familiar brand names in order to minimize the variables affecting consumer perceptions of the products. However, in recognising the brand, participants may have immediately relied upon their existing attitudes and knowledge of those products and been less likely to seek information from the labelling. For future studies it may be better to delete the brand name on the package as has been done in other similar studies (Levy et al 1997). It is also important to be aware of the relatively small number of participants taking part in this study in comparison to other similar studies in this area of consumer behaviour. Lastly, the health claim used in this trial related to a benefit that has been widely promoted to the public for many years. The results could well be different for a less familiar benefit claim.

The information given on a health claim does not stand in isolation from other sources of nutrition information. Attitudes towards the diet-disease relationship are also influenced by, for example, periods of increased newspaper and advertising activity about a diet-disease relationship (Teisl et al 1999). The degree of awareness has an influence on consumer's perception of different nutrients in health claims (Garretson & Burton 2000) and, for that reason, we limited the variables in this study to only one health claim.

The split claim format evoked a different response compared to the non-split format toward the statement "*this label does a good job in telling me about the health benefits of the product*" in the juice, and in the milk toward the statement "*I believe the health claim on this package is true*", with responses indicating greater agreement with the split claims. This study was not designed in advance to look into the reasons that might explain the strength of the split claims in comparison to the not-split. There is a possibility that the split claim, by directing the participants to the back of the package, compelled them to take notice of the additional information, such as the Nutrition Information Panel. These findings of the effectiveness of split claims are consistent with other studies with American consumers (Wansink et al 2001; Wansink 2003). The reason for this may be because Australian consumers tend to view claims on the front of pack as advertising, and consider information on the back of the pack to be believable and trustworthy (FSANZ, 2003). It may also be that the excessive

amount of information placed on the package front in the not-split format discouraged some of the participants from reading the whole claim.

Participants generally believed that the health claim on the package was true. The majority of the participants who did not believe in the health claim thought that it was just an advertising tool (up to 85% of participants in the case of the juice product). Even of the participants who believed the claim, half thought that the claim was just part of the advertising as well. This suggests that whereas consumers believe in the claim they are also sceptical about it. This apparently contradictory stance has been noted in other aspects of food labeling where consumers claim to be sceptical about nutrition claims but still rely upon them (Chan et al, 2005).

Endorsement by FSANZ appeared to have no influence on consumers' beliefs about the health claim. It may have been that participants overlooked the claim because of the small print size used. Another explanation could be insufficient levels of awareness of FSANZ among consumers. These results support the findings of the FDA study (Levy 1997) in which two different endorsements (by the FDA and National Institute of Health) had no impact on participants' trust in the claim, and towards one product even had a negative impact. It is notable that during the voluntary folate health claim trial very few companies used the FSANZ endorsement logo on pack and some chose to use their own company-designed logo (Williams et al 2001).

Levy et al (1997) have reported in their study that participants rated products higher on other health attributes not mentioned in the claim, and which were not true in regards to the product - a phenomenon they referred to as a 'halo effect'. The participants in this study did not appear to incorrectly attribute other benefits to products (for example, they did not think that the juice had any particular benefits as in lowering the risk for a heart attack nor that it could be a sole substitute for dairy products). However, a small proportion (5%) of participants stated "High in vitamin D" as a health benefit of both the milk and juice products, which suggests that some consumers may have incorrectly interpreted the health claim as a nutrient content claim about vitamin D, even though vitamin D was not listed in the ingredient list or nutrient information panel.

These findings provide some support for the ‘playback’ phenomenon that was seen in the study of Levy et al (1997). In open-ended questions about the product, participants did note the benefits from the health claim, but these were less frequently mentioned than nutrient content claims. This finding suggests that consumers are paying attention to nutrient content claims on food labels but are less familiar with health claims, which is reflective of the current Australian regulatory environment in which the use of health claims on labels is prohibited. The listing of nutrient content claims when participants were asked about the health benefits of the milk and juice also indicates that participants are unsure of the differences between a health and nutrient content claim. While this may be partly explained by the current regulatory environment, it also reflects findings from consumer studies in other countries where health and nutrient content claims are permitted on food labels but consumers have difficulty differentiating between the two (National Consumer Council 1997, Urala et al 2003).

Conclusion

The findings from this study with Australian consumers support those of studies in other countries that have found that splitting of a health claim (positioning the full health claim at the back with a short claim at the front) may improve the use, belief and understanding of the health claim by consumers. Endorsement by FSANZ did not affect any of these factors. Further research needs to be carried out in order to compare the effect of nutrient content and health claims with Australian consumers and to examine the effect of different formats of health claims to enhance consumer understanding.

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Table 1 - Stratification of participants according to gender, age group and educational level.

			Highest education level			Group Total
			Early secondary	Completed secondary	Tertiary	
Male	Age group	18-34y	1	6	8	15
		35-54y	3	7	5	15
		55-74y	3	6	5	14
		75+y	3			3
	Subgroup Total		10	19	18	47
Female	Age group	18-34y	4	6	19	29
		35-54y	7	13	26	46
		55-74y	5	8	8	21
		75+y	3	2	1	6
	Subgroup Total		19	29	54	102
Total sample			29	48	72	149

Table 2 – “The package does a good job of telling me about the health benefits of this product”- Means of responses and one-way ANOVA test for the five different label formats for each one of the products

Label condition	Milk		Juice	
	Mean rating*	SD	Mean rating*	SD
NE, NS	8.2	1.1	7.3	2.1
NE, S	7.8	1.3	7.5	2.0
E, NS	7.6	1.9	6.9	1.9
E, S	8.4	1.0	7.3	2.0
Control	7.6	1.7	6.0	1.9
ANOVA (p value)	0.05		0.04	
Post Hoc Tukeys				
NE,S vs Control	0.98		0.04	

S= Split, E= Endorsed, N= Not

* Ratings from 1=strongly disagree to 9=strongly agree

Table 3 – “I believe the health claim on this package is true” – Mean responses and two-way ANOVA test (p values) for the different responses towards splitting and endorsement of claim.

Split	Endorsed	Milk		Juice	
		Mean	SD	Mean	SD
No	No	7.7	1.9	7.0	2.4
	Yes	7.5	1.8	6.8	2.2
Yes	No	7.8	1.7	7.0	2.3
	Yes	8.5	1.1	7.5	2.1
		F	Sig (p =)	F	Sig (p =)
Split (yes/no)		3.9	0.05	0.7	0.40
Endorsed (yes/no)		0.6	0.42	0.4	0.83

Table 4 – “If I eat this product regularly it would lower my chances of having osteoporosis” – Means of responses and one- way ANOVA test for the five different label formats for each one of the products:

Label condition	Milk		Juice	
	Mean 1-9, 9=Strongly agree	SD	Mean 1-9, 9=Strongly agree	SD
NE, NS	7.2	2.6	5.7	3.0
NE, S	6.6	3.4	5.3	3.2
E, NS	6.6	2.6	4.2	2.5
E, S	7.6	1.9	6.4	2.8
Control	6.9	2.3	4.6	3.0
ANOVA	0.37		0.02	
Post Hoc - Tukeys ES vs. E,NS,	0.37		0.02	

S= Split, E= Endorsed, N= Not

Table 5 – Main answers given to the question “*What kind of health benefits would people get from eating this product?*” in descending order of frequency (n=149) *

Milk		Juice	
Answer	% of participants	Answer	% of participants
High in calcium	64	High in calcium	44
Low fat	60	High in vitamin C	36
Reduces the risk of osteoporosis	22	High in vitamins	20
Build strong bones	15	Reduces the risk of osteoporosis	17
Low cholesterol	11	Build strong bones	15
Good source of protein	9	High in minerals	9
Helps control/ reduce weight	7	No added sugar	9
High in vitamin D	5	Low fat	6
		Good for colds and flu	5
		Contributes water/ liquids	5
		High in vitamin D	5

* Answers from < 5% respondents not shown