

# Unpack the Salt: An Assessment of the Victorian Salt Reduction Partnership's Media Advocacy Activities to Highlight the Salt Content of Different Foods

Emalie Rosewame (✉ [erosewame@georgeinstitute.org.au](mailto:erosewame@georgeinstitute.org.au))

The George Institute for Global Health, UNSW <https://orcid.org/0000-0001-5748-3953>

**Kathy Trieu**

The George Institute for Global Health

**Clare Farrand**

The George Institute for Global Health

**Jenny Reimers**

VicHealth

**Jane Potter**

VicHealth

**Chelsea Davidson**

National Heart Foundation of Australia

**Natasha Darrigan**

National Heart Foundation of Australia

**Elizabeth Joldeski**

National Heart Foundation of Australia

**Sian Armstrong**

National Heart Foundation of Australia

**Jacqui Webster**

The George Institute for Global Health

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## Research

**Keywords:** Media, advocacy, salt reduction, Australia

**Posted Date:** April 29th, 2020

**DOI:** <https://doi.org/10.21203/rs.3.rs-24989/v1>

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**Version of Record:** A version of this preprint was published on September 16th, 2020. See the published version at <https://doi.org/10.1186/s12937-020-00621-0>.

# Abstract

## Background

Australians are consuming almost double the recommended maximum salt intake. The Victorian Salt Reduction Partnership was established to coordinate efforts to reduce salt intake in the state of Victoria. As part of an intervention strategy, media and advocacy strategies were used to raise public awareness and stimulate industry and government action on salt reduction. This study aimed to assess the Victorian Salt Reduction Partnership's media advocacy activities by collating the key findings of product category reports, identifying characteristics of press statements and assessing the media coverage and industry engagement.

## Methods

Key findings, including means and ranges of sodium levels, were extracted from product category reports, and one-way ANOVAs were used to determine trends in sodium levels over time. Themes from press statements were identified through inductive qualitative analysis. Indicators of media coverage (media items, cumulative audience reach, advertising space rate) and food industry engagement (number of meetings, number and type of follow up actions) were tracked.

## Results

8460 products were analysed from six product category reports (bread, cooking sauces, ready meals, dips and crackers, processed meats and Asian-style sauces). Qualitative analysis of the press statements revealed three main themes: general information on salt and health, salt levels in foods, and calls to action. 759 media items (print and online news, radio and TV) were generated (range: 36–274 items), and an average cumulative audience reach of over 5.6 million was achieved (range: 2.3–7.5 million). One to three food manufacturers were met with per media release.

## Conclusions

Disseminating sodium-monitoring data through media releases can be used as a tool to reach consumers with salt reduction messages and to engage food manufacturers in discussions about salt reduction. Characteristics of advocacy strategies can influence media and industry engagement. When planning future nutrition interventions that include advocacy strategies, external factors outside the control of the program implementers, should be considered.

## Background

Excess dietary sodium intake increases blood pressure, and consequently increases the risk of cardiovascular diseases [1]. Dietary sodium is usually consumed as sodium chloride, or salt [2], and in 2017, 3.2 million global deaths were attributable to high salt diets [3]. To reduce the disease burden from excess salt consumption, the World Health Organization (WHO) recommends reducing population salt intake to less than 5 grams per day [4].

For Australians, mean salt intake is estimated at 9.6 g/day [5], which is almost double the WHO recommendation. Despite the global target to reduce salt intake by 30% by 2025, concerted action to reduce salt intake in Australia is lacking [2, 6]. In response, the Victorian Salt Reduction Partnership (VSRP) was established in 2014 to coordinate efforts to reduce salt intake in the state of Victoria. The VSRP comprises key organisations working on salt reduction including the Victorian Health Promotion Foundation (VicHealth), The George Institute for Global Health, The Heart Foundation, Deakin University and the Victorian Department of Health and Human Services [7]. The overall aim is to reduce the average salt intake of Victorians by 1 gram per day by 2020 [7].

In Australia, it is estimated that more than 75% of dietary salt is from packaged and processed foods [8]. As such, the key focus of the VSRP strategy has been on reducing salt intake from packaged and processed foods. The three main intervention components are: raising public awareness of the need to reduce salt intake and of salt levels in foods; stimulating industry action to reformulate foods to contain less salt; and advocating for the federal government to set targets for sodium levels in foods [7, 9]. To support the delivery of each of these components, product category reports utilising sodium-monitoring data from the FoodSwitch database, were produced by The George Institute for Global Health [10, 11]. These reports assessed the mean salt content of different product categories, and variations in salt levels within categories. Product categories were selected by the VSRP if they were one of the highest contributors of salt to the diet or were a high salt category with a high frequency of consumption, as determined by the most recent Australian Health Survey [12], as reformulation of these product categories offers an important opportunity to reduce population level salt intake. The key findings were translated into a press statement and communicated via periodically scheduled media releases throughout the intervention timeframe [10]. The dissemination strategy utilised both public awareness raising and media advocacy approaches. Public awareness components created opportunities for consumers to improve their health literacy and aimed to empower consumers to take action. Media advocacy (i.e. the innovative and strategic utilisation of mass media as a tool for health promotion [13]) was used to stimulate industry action to reformulate and government action to set sodium targets, as well as increase public support for these actions.

The objectives of this research were to assess the outcomes of the VSRP strategy in relation to media coverage and industry engagement, and to identify key characteristics of the press statements that may have influenced these outcomes. This study is a component of an ongoing comprehensive process evaluation of the VSRP [9]. The results will be used to inform future salt reduction strategies, both in Australia and globally.

## Methods

### Product category reports

Data were obtained from previously purpose-built Excel spreadsheets for each product category report, which contained nutrition information and relevant product information from food packaging, extracted from the Australian FoodSwitch database for 2010, 2013, and 2015, supplemented with information

collected by student interns in 2017/18. Details of the data collection and product inclusion criteria are outlined in each product category report [14-19].

Statistical analyses were conducted in Stata IC 15.0 for Windows (StataCorp LP, Texas). The total number of products, products per category and per sub-category were recorded. For each product category and sub-category, the mean (SD) sodium content per 100g of food, and range were determined; and trends in mean sodium levels between 2010, 2013, 2015 and 2017/18 were analysed using one-way ANOVA's (post-hoc Scheffé's method).

## Intervention strategy

The key findings of the product category report informed a media release, which included the product category report [14-19], a press statement [20-25], key messages as infographics [26-30], and a list of products which had the lowest and highest amounts of salt in each category [31-36]. Media releases were disseminated by the Heart Foundation on behalf of the VSRP in March, August, October and December 2017, and March and November 2018.

## Characteristics of the advocacy strategy

To identify the key characteristics of the advocacy strategy, a qualitative analysis of the content and framing of the press release statements was performed [37]. The headline and lead message were extracted from each press statement to illustrate the framing of the media release, and using *NVivo* for data management, themes of each press statement were identified inductively through a line-by-line analysis [38].

## Indicators of media coverage

Indicators of media coverage were tracked by the Heart Foundation and included the number of media items, overall and by type of media (e.g. radio, online news), cumulative audience reach (the sum of the number of unique individuals reached) and advertising space rate (ASR; the estimated dollar equivalent of buying advertising space in media). A descriptive quantitative analysis of media coverage was conducted [37].

## Indicators of industry engagement

Food manufacturers named in each media release as having the highest or lowest salt products were contacted by the Heart Foundation, via email communication or phone call, 24-hours prior to the release to notify them of the results of the report and give them an opportunity to prepare comments in response, and to propose future discussions on reformulation of high salt products.

To quantify industry engagement the following information was recorded by the Heart Foundation for each media release: number of food manufacturers who were contacted by, or contacted, the Heart Foundation or VSRP; the number of initial and follow up meetings; or any follow up actions. Follow up actions included: referral to other resources, engagement in product benchmarking services by The George Institute for Global Health, or completion of a commitment statement or company case study on salt reduction, which could then be published on the *Unpack the Salt* website.

## Results

### Product category reports

The key findings from six product category reports [14-19], breads, cooking sauces, ready meals, dips and crackers, processed meat and Asian-style sauces, were shared in media releases between March 2017 and November 2018. In total, 8460 products were analysed across four survey years: 1442 bread products, 2272 cooking sauces, 1608 ready meals, 930 dips and 1187 crackers, 864 processed meats (selected sub-categories: bacon, sausages, sliced meat), and 157 Asian-style sauces. There was an increase in the number of products available in every category from 2010 to 2017/18, ranging from a 10% increase in the number of cooking sauces to a tripling of the number of Asian-style sauces (Table 1). The mean sodium content for each subcategory for the four survey years is displayed in Table 1. Between 2010 and 2017/18, the mean sodium content of six out of 25 sub-categories (24%) decreased significantly. These categories were 'bread and bread rolls' (-11%,  $p<0.001$ ), 'value-added bread products' (-30%,  $p<0.001$ ), 'ambient pasta sauces' (-27%,  $p<0.001$ ), 'plain dry crackers' (-22%,  $p=0.001$ ), 'savoury crackers' (-15%,  $p=0.012$ ), and 'bacon' (-17%,  $p<0.001$ ; Table 1).

Table 1  
**CoMean and range in sodium content of processed foods between 2010 and 2017/18 from six product category reports**

Product category	2010			2013			2015			2017/2018 <sup>a</sup>			P
	n	Mean (SD, mg/100g)	Range (mg/100g)	n	Mean (SD, mg/100g)	Range (mg/100g)	n	Mean (SD, mg/100g)	Range (mg/100g)	n	Mean (SD, mg/100g)	Range (mg/100g)	
<b>Breads</b>													
Bread and bread rolls	142	456.2 (101.5)	170 - 770	268	416.1 (93.1)	180 - 800	249	410.1 (87.4)	40 - 660	229	407.8 (87.6)	200 - 880	<0.001
Flat bread	46	447.7 (218.0)	110 - 930	105	562.8 (230.0)	110 - 1100	90	542.7 (229.1)	29 - 1020	85	363.4 (243.8)	29 - 930	0.001
Morning goods	23	534.4 (135.1)	360 - 700	30	492.9 (144.7)	260 - 674	18	513.7 (124.9)	338 - 700	21	461.3 (151.7)	229 - 674	0.001
Value added bread products	26	522.1 (126.2)	150 - 668	42	528.0 (135.1)	150 - 820	40	498.6 (106.0)	270 - 1020	28	365.5 (119.6)	174 - 720	<0.001
<b>Cooking sauces</b>													
Ambient meal-based sauces	110	541.5 (279.7)	169 - 1600	137	815.8 (1016.9)	188 - 5890	125	780.2 (1072.5)	108 - 8210	100	553.8 (412.6)	120 - 2250	0.001
Liquid meal-based sauces	73	2157.4 (881.6)	132 - 4520	83	3048.2 (1048.7)	526 - 11000	86	1261.9 (947.4)	118 - 5750	58	1999.6 (892.8)	251 - 4530	0.001
Powdered meal-based sauces	112	1405.6 (1954.9)	883 - 12140	116	1377.1 (2246.0)	118 - 7050	54	4543.4 (1972.2)	507 - 8700	112	1215.2 (2032.0)	57 - 4940	0.001
Curry pastes	26	5288.2 (1086.9)	563 - 4660	79.0	4863 (1947.0)	298 - 11000	59	2202.3 (1093.1)	283 - 5960	64	5011.3 (897.9)	715 - 8950	<0.001
Ambient pasta sauces	120	471.6 (163.5)	19 - 1200	160	409.5 (176.0)	15 - 1200	178	372.0 (138.4)	15 - 898	145	342.0 (146.2)	8 - 750	<0.001
Fresh pasta sauces	15	315.0 (116.6)	0 - 480	36	323.0 (118.2)	116 - 660	22	322.8 (121.6)	116 - 547	21	375.9 (101.0)	190 - 547	0.001
Pesto	9	1026.0 (402.1)	248 - 1540	23	1011.8 (318.0)	458 - 1597	21	1004.9 (338.4)	466 - 1597	20	968.6 (341.1)	259 - 1350	0.001
Tomato paste	27	430.7 (286.7)	22 - 980	25	378.7 (345.5)	10 - 1099	33	355.7 (296.9)	17 - 1099	23	345.2 (340.3)	9 - 1210	0.001
<b>Ready meals</b>													
Ambient ready meals	48	344.9 (104.4)	140 - 562	108	348.8 (111.4)	115 - 811	112	408.0 (545.4)	1 - 5900	114	328.3 (114.9)	37 - 783	0.001
Chilled ready meals	29	231.6 (92.6)	42 - 450	121	315.0 (115.7)	84 - 679	116	306.4 (118.3)	41 - 864	158	282.7 (119.9)	41 - 828	<0.001
Frozen ready meals	131	268.2 (55.5)	129 - 435	207	268.9 (96.3)	94 - 931	259	329.9 (170.4)	60 - 1760	205	252.6 (75.5)	84 - 595	<0.001
<b>Dips</b>													
Chilled dips	112	435.9 (189.9)	15 - 1216	256	451.8 (235.2)	39 - 2200	226	472.0 (210.3)	104 - 2100	273	496.2 (249.0)	5 - 1930	0.001
Salsa	9	560.0 (135.5)	410 - 780	27	476.0 (124.5)	5 - 645	26	457.0 (95.3)	300 - 629	1	470.0 (-)	470 - 470	0.001

Savoury crackers													
Plain dry crackers	100	654.9 (283.4)	2 - 1370	183	602.4 (342.6)	0.18 - 2250	178	552.6 (239.7)	2 - 1160	171	508.3 (218.6)	1 - 1000	<
Savoury crackers	93	842.2 (293.2)	220 - 1760	156	798.2 (289.9)	173 - 1810	162	744.8 (289.8)	173 - 2100	144	715.6 (275.6)	281 - 2100	<
Selected processed meats													
Bacon	46	1259.0 (243.1)	680 - 1950	52	1161.0 (245.1)	499-2170	56	1152.0 (323.0)	597-2900	59	1047.0 (137.9)	660-1490	<
Sausages	81	651.2 (152.6)	269 - 1120	89	635.6 (150.7)	410 - 1100	58	710.5 (198.4)	327 - 1600	81	691.1 (181.6)	310 - 1170	<
Sliced meat	86	1086.2 (358.3)	120 - 2800	109	947.2 (316.0)	72 - 1710	125	889.8 (282.6)	0 - 1500	103	1008.7 (345.8)	82 - 2800	0
Asian-style sauces													
Fish sauce	2	6061.5 (3715.8)	3434 - 8689	7	7003.9 (1880.2)	4279 - 9115	6	6792.3 (1293.9)	4279 - 7803	6	9636.7 (1243.8)	7992 - 10882	0
Oyster sauce	5	3505.0 (534.3)	2951 - 4377	11	3619.5 (636.3)	2550 - 4918	11	3508.4 (787.3)	1803 - 4443	14	3604.4 (806.5)	1803 - 4770	0
Soy sauce	10	6097.0 (1189.2)	3390 - 7619	28	5841.4 (1245.0)	3390 - 8762	26	6003.8 (1171.0)	3810 - 8762	31	6147.6 (1356.4)	3808 - 8762	0
<sup>a</sup> 2018 for Asian-style sauces only, 2017 for all other product categories													
<sup>b</sup> P-value the result of a one-way ANOVA													
<sup>c</sup> P-value the result of post-hoc Scheffe's test following one-way ANOVA													

## Characteristics of the advocacy strategy

The headline and lead message from the press statement illustrate the framing of each report [20-25]. The headline for three of six reports stated the high salt content of the food category (cooking sauces, ready meals, dips and crackers), while two advised consumers to reduce salt intake (bread, Asian-style sauces) and the other didn't mention salt but rather good health (processed meats). The lead message for five of six reports compared consumption of a food product to the recommended daily maximum salt intake, while the cooking sauces lead message compared salt levels within the product category (Table 2).

Table 2  
Characteristics of the media release obtained from the press statement

Product category	Release date	Headline of press statement	Lead message from press statement
Bread [20]	21-Mar-17	Victorians urged to curb their consumption of salt	"some loaves contained more than a third of the daily recommended salt intake in just two slices."
Cooking Sauces [21]	23-Aug-17	New research shows family favourite cooking sauces are packed with salt	"they're packed with salt, with some brands nearly 100 times worse than others"
Ready Meals [22]	3-Oct-17	Australian ready meals are saltier than ever	"some ready meals contain more than an entire day's worth of salt in a single serve and... they're getting saltier"
Dips and Crackers [23]	7-Dec-17	Research reveals that many healthy-looking dips are saltier than seawater	"some dips are saltier than seawater, and several cracker-dip combinations deliver more than half a day's worth of salt in just one serve."
Processed meats [24]	14-Mar-18	Aussie BBQ classic proving a snag to good health	"the humble snag in white bread and tomato sauce contains a whopping 2.35 grams of salt – nearly half of the recommended daily salt intake"
Asian-style sauces [25]	13-Nov-18	Hold the sauce: New report finds swapping your soy sauce can halve your salt intake	"a single tablespoon of the average soy sauce contains 61 percent of our recommended daily salt intake"

The line-by-line qualitative analysis revealed three main components of the press statements: General salt information such as current population salt intakes and the link between high salt intake and disease/health outcomes (4 themes); key findings from the product category report including salt levels of certain products and categories (4 themes); and a call to action for consumers, government and/or industry (3 themes). All of these contribute to the main aims of the media strategy: (1) to raise public awareness of the need to reduce salt intake and salt levels in foods, (2) to stimulate industry action to reformulate foods to contain less salt and (3) to persuade the federal government to set targets for sodium levels in foods (Table 3).

All press statements included general salt information including information on the burden of disease attributable to high salt intakes and the need for salt reduction in Australia, while only four of six mentioned current salt intake levels in Australia. Every press statement outlined that the majority of salt in the

Australian diet is from packaged and processed foods.

All press statements included key findings from the product category report, including comparing salt levels in products to the recommended daily maximum amount of 5g per day. All, except bread, highlighted the range in salt content between sub-categories, and/or highest and lowest salt products overall. Similarly, all except bread, mentioned changes in salt levels over time. Three of six press statements, cooking sauces, dips and crackers, and processed meats, contextualised the food product as part of a meal (Table 3).

Every press statement called on consumers to take action to reduce their salt intake, while four of six called on industry to take action to reformulate foods to include less salt and three of six called on government to set sodium targets for manufacturers to meet. Only two, dips and crackers and processed meats, included all call to action messages (Table 3).

Table 3  
Main themes identified in the press statements and frequency of occurrence by product category

Component	Theme	Bread [20]	Cooking sauces [21]	Ready meals [22]	Dips and crackers [23]	Process-ed meats [24]	Asian- style sauces [25]
General salt information	Population salt intake	3	2	0	1	1	0
	Salt and disease	3	1	1	1	1	1
	Salt in packaged, processed foods	3	3	1	1	1	1
	Need for salt reduction	3	1	1	1	1	1
Key findings from the product category report	Change in salt levels over time	0	2	3	2	3	2
	Comparison to daily maximum	1	3	5	2	5	8
	Findings in the context of a meal	0	1	0	1	2	0
	Range in salt levels	0	7	4	7	2	5
Call to action	Consumers	2	2	2	3	4	4
	Government	0	0	1	1	2	0
	Industry	0	1	0	2	2	2

## Indicators of media coverage and industry engagement

A total of 759 media items were identified across the five media releases measured. The number of media items ranged from 36 items for dips and crackers to 274 items for processed meats. Media coverage ranged from an estimated cumulative audience reach of 2.3 million (dips and crackers) to 7.5 million (processed meats). The highest ASR was achieved for processed meats at \$1,633,188, followed by Asian-style soy sauces at \$1,105,824. Social media engagement through use of the *Unpack the Salt* hashtag ranged from 63 (dips and crackers) to 143 (processed meats; Table 4).

For industry engagement, one manufacturer contacted, and met with, the VSRP after the bread media release. For subsequent releases, the number of manufacturers contacted ranged from two to 13. At least one manufacturer was engaged in a meeting, for every product category, though engagement rates varied from 9% for dips and crackers (1/11 manufacturers) to 100% for processed meats (2/2 manufacturers). A total of 10 manufacturers were engaged, including all four major retailers, and three manufacturers in Australia's top 100 food and drink companies [39]. One manufacturer was met with in relation to two separate product categories. Follow up meetings were held with seven manufacturers and these ranged from one meeting to three meetings (Table 4).

Through industry engagements, seven manufacturers were referred to other resources, networks or people to support them with product reformulation, two manufacturers were engaged in product benchmarking services and three manufacturers produced a case study on their salt reduction reformulation work (Table 4).

Table 4  
Indicators of media coverage and industry engagement in relation to the six media releases

	Bread <sup>a</sup>	Cooking Sauces	Ready Meals	Dips and Crackers <sup>c</sup>	Processed meats	Asian-style sauces
<b>Indicators of media coverage</b>						
<b>Total media items</b>	N/A	181	137	36	274	131
AM Radio	N/A	17	30	6	19	23
FM Radio	N/A	10	12	0	15	11
Newspaper	N/A	3	7	6	11	1
Online news	N/A	123	67	21	185	65
TV	N/A	28	21	3	44	31
<b>Total cumulative audience reach</b>	956,031 <sup>b</sup>	6,582,596	5,884,395	2,316,478	7,460,925	5,987,529
AM Radio	N/A	1,931,100	1,523,200	900,000	680,500	1,867,200
FM Radio	N/A	56,800	175,000	0	338,500	168,100
Newspaper	N/A	421,452	281,393	337,745	829,136	5,535
Online news	N/A	10,244	51,802	50,733	114,689	98,757
Television	N/A	4,163,000	3,853,000	1,028,000	5,498,100	3,848,000
<b>Total advertising space rate</b>	N/A	\$961,188	\$1,013,613	N/A	\$1,633,118	\$1,105,824
AM Radio	N/A	\$225,508	\$77,715	N/A	\$49,286	\$63,226
FM Radio	N/A	\$1,752	\$34,138	N/A	\$14,819	\$30,308
Newspaper	N/A	\$254,952	\$72,217	N/A	\$124,383	\$1,405
Online news	N/A	\$75,150	\$169,881	N/A	\$576,498	\$494,457
TV	N/A	\$403,826	\$682,849	N/A	\$868,132	\$516,428
<b>Social media engagement #UnpackTheSalt</b>	N/A	96	80	63	143	112
<b>Indicators of industry engagement</b>						
<b>Number of manufacturers contacted by VSRP</b>	N/A	13	5	11	2	8
<b>Number of manufacturers who contacted VSRP</b>	1	0	0	0	0	0
<b>Number of manufacturers meeting with VSRP/direct engagement</b>	1	3	2	1	2	2
<b>Number of manufacturers with follow up meetings with VSRP</b>	0	2	2	1	2	0
<b>Number of manufacturers engaged in follow up activities</b>	0	2	1	1	2	2
Referral to other resources, networks or people e.g. state government, international work	0	2	1	1	2	2
Number of manufacturers that completed a VSRP commitment statement	0	0	0	0	0	0
Number of manufacturers producing a case study	0	2	1	0	0	0
Number of manufacturers engaged in benchmarking services	0	1	1	0	0	0
<sup>a</sup> The bread product category report was released prior to the launch of the Unpack the Salt campaign. Media indicator data for the bread report were collected by The George Institute for Global Health, whereas data for other product category reports were collected by the Heart Foundation. <sup>b</sup> Average audience reach, rather than cumulative audience reach, was recorded for the bread product category report. <sup>c</sup> Advertising space rate data was not collected for dips and crackers VSRP – Victorian Salt Reduction Partnership						

## Discussion

Disseminating sodium-monitoring data of the Australian food supply through periodic media releases enabled the VSRP to raise public awareness of the salt content of different foods through mass media and engage food manufacturers in meetings to discuss product reformulation. A total of 759 media items were generated through radio, newspaper, online news, and television across six media releases. This is much greater than the 58 media items that were

generated by six media releases about tobacco control in New South Wales [40], and implies the VSRP strategy was more effective in gaining access to the media [37]. The media coverage reached over 5.6 million Australians on average, approximately 20% of the population [41].

This reach is comparable to a salt reduction public awareness campaign *Give Your Head a Shake* in the Champlain region of Canada, which reached 5.7 million Canadians through more than 70 media items in the first year of the campaign [42]. However, the number of Australians reached varied by product category from around 2 million to over 7 million, which could suggest that there were characteristics of certain media releases that attracted greater attention than others [37]. In addition, about one-quarter of manufacturers contacted by the were directly engaged, with between one and three manufacturers being engaged per report. This may suggest that media publicity can be used by public health advocates to engage the food industry in discussions about food reformulation, and could possibly influence food industry action, as seen in the UK [43]. Therefore, our results show that media releases are a useful tool for reaching consumers with salt reduction messages and engaging food manufacturers in discussions about salt reduction reformulation.

The variations in the media coverage between product categories may be due to characteristics of the media releases [37] or external factors outside the VSRPs control. The processed meats release had the highest number of media items, cumulative audience reach, ASR, and social media engagement. This may reflect factors within the press statement [24], including the media angle chosen (“Aussie BBQ classic proving a snag to good health” [24]), the leading message or framing of the findings (e.g. “a sausage in a slice white bread with sauce contains nearly half the recommended daily maximum salt intake” [24]), other key findings (e.g. reduction in the salt content of bacon, but not sausages, over time) or that all themes identified in the qualitative analysis were present. It could also reflect external factors, such as: the timing of the media release (Salt Awareness Week 2018 [43, 44]), a planned media event in Melbourne with a local chef [45], perceived newsworthiness [40], general public or media interest in the category, or other factors.

Contrastingly, the dips and crackers release performed the poorest across all media coverage indicators. Based on our analysis of the press statement [23], showing almost all qualitative themes were present and similar messaging to other product categories, the potential reasons for lower media uptake are likely external. The timing of the media release was likely a major factor, specifically other events occurring in the world at the time, with the Aztec High School shooting in America occurring on the same day [46]. Other timing factors, including the lead up to Christmas, other health or nutrition related stories in the week, and the short space of time since the previous media release could have also contributed to the lower media pick-up [40]. The perception from the media that because dips and crackers are discretionary or occasional foods [47] the salt content is a lesser a priority, may also be a factor.

Due to data limitations, we were unable to compare the media indicators for bread with other product categories, however possible factors influencing outcomes include the focus on general salt information rather than the key findings of the product category report, and the release date, which was before the *Unpack the Salt* campaign launch [21]. While levels of media engagement may be unpredictable, both internal and external factors should be considered more closely for future strategies as the impact on media coverage was substantial.

Levels of engagement with food manufacturers also differed between reports, which could be due to the VSRP approach to engagement, manufacturer-specific factors, or product category-specific factors. The number of manufacturers contacted by the VSRP per report varied depending on how many were named in the release as having the highest salt products [31–36], however, the number of manufacturers engaged per report did not reflect this. Both manufacturers contacted in relation to the processed meat report met with the VSRP compared to only one of 11 manufacturers of dips/crackers.

Whether the press releases included a call for industry to act did not seem to influence the likelihood of manufacturers to engage with the VSRP. These findings imply that factors affecting industry engagement are likely external. Manufacturer-specific factors, such as company philosophy, size and location (overseas, Australia-based), capacity and available resources for reformulation, and receptivity to the industry engagement approach (naming manufacturers and products in the media) may have influenced manufacturers’ decisions to engage with the VSRP. Another factor to consider is the feasibility of reformulation for specific product categories. Some foods are harder to reformulate than others due to technical and functional roles of salt, such as its use as a preservative in many products, role in the control of yeast growth and fermentation in bread, and role in sensory and textural properties in processed meats [48]; and manufacturers of these product types may be more likely to be looking for support. Media advocacy can be used as a tool to engage manufacturers in conversations about salt reduction reformulation, however future interventions should consider factors that may affect levels of engagement from the outset.

The idea of utilising product category reports to advocate for salt reduction through mass media stemmed from a similar strategy in the UK, whereby regular surveys were undertaken by Action on Salt, and used to raise public awareness and put pressure on the food industry to reformulate in line with the UK’s salt targets [43]. Between 2006 and 2011, the UK salt reduction strategy reduced population salt intake by 15% and salt levels in foods were reduced by up to 57% in some food categories [43]. Building on concepts from the UK strategy, the VSRP utilised mass media to call consumers, industry and government to act to reduce population salt consumption.

Consumer messages in the press statements were based on evidence about salt levels in different food categories from the product category reports [14–19, 49] and were centred around concepts such as: raising awareness of the salt content of different foods, swapping to a reduced salt variety, replacing processed foods with fresh foods, and trying homemade options. Although the key messages are based on a successful strategy and media coverage indicators seem promising, it is currently unknown whether these messages were enough to trigger changes in consumer behaviour to reduce the salt intake [50]. Media advocacy strategies were used to stimulate industry action to reformulate processed foods and government action to set sodium targets, as well as increase public demand for these actions, in line with the aim to reduce salt in the food supply. In four of six press statements, industry was called to act, with messages highlighting that reformulation is feasible within these product categories, and in three of six press statements, the federal government was also called to act, specifically to set targets for sodium levels in foods.

Worldwide, 61 countries have reported working with the food industry to reformulate products to include less salt [51]. At least 23 countries have reported engaging in industry meetings as part of their national salt reduction strategy [52], the approach undertaken by the VSRP. However only two of these countries,

France and Italy, have reported a reduction in the salt levels of selected food categories, and these countries also had voluntary sodium targets [52]. In total, 36 countries have established sodium targets, and 19 countries reported a reduction in salt levels in foods and meals [51]. This emphasises the importance of nutrient reformulation targets for reducing salt levels in the food supply, and consequently decreasing population salt intake and the burden of disease associated with excess salt consumption.

This study is a novel assessment of the outcomes of a media and advocacy strategy in Australia. It provides insight into media coverage and industry engagement outcomes from six media releases based on salt levels in different processed food categories. It provides an in-depth understanding of the factors influencing the effectiveness of using media as a tool for engaging media and industry, which is a key element of a larger salt reduction intervention strategy. The methodology for assessing the media and advocacy strategy, both quantitatively and qualitatively, was based on items from a public health framework for evaluating complex public health interventions [37]. A limitation of the study is that the indicators of media coverage for the bread release were unable to be compared to other media releases. For this report, average audience reach was recorded by The George Institute for Global Health, whereas cumulative audience reach, media items and ASR were collected by the Heart Foundation for the other reports.

## Conclusions

This assessment of the VSRP media advocacy activities shows that media releases highlighting sodium levels in the Australian food supply can be used as a tool to reach consumers with salt reduction messages through mass media and to engage food manufacturers in discussions about salt reduction strategies. Media and industry outcomes can be influenced by internal and external factors, both of which should be considered when planning future nutrition interventions. However, further research is needed to determine exactly what characteristics or factors increase the effectiveness of media advocacy for nutrition interventions. Continued advocacy efforts calling the federal government to set sodium targets and industry to reduce salt in the food supply are needed to reduce population salt intake and raising public awareness can support these interventions and create demand for change.

## Abbreviations

WHO  
World Health Organization  
VSRP  
Victorian Salt Reduction Partnership  
ASR  
Advertising space rate

## Declarations

## Ethics approval and consent to participate

Not applicable

## Consent for publication

Not applicable

## Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

## Competing interests

The George Institute for Global Health sells FoodSwitch data and analyses of these data to third parties to help them benchmark the nutritional profile of products with a view to improving the overall healthiness of the food supply. Clients have included governments, non-government organizations, food industry companies, and data analytics businesses. The funds are used to support the operational aspects of the database. The third parties had no say in and did not influence the findings of this research.

## Funding

This study was funded by National Health and Medical Research Council Project Grant APP1111457 with additional funding from the Victorian Health Promotion Foundation. ER is supported by a University of New South Wales University Postgraduate Award (UPA) (#00889665) and George Institute Top-Up Scholarship. KT was supported by an Early Career Fellowship (APP1161597) from the National Health and Medical Research Council of Australia (NHMRC) and a Postdoctoral Fellowship (Award ID 102140) from the National Heart Foundation of Australia. JW receives funding from World Health Organization;

VicHealth (# 20122); National Heart Foundation Future Leaders Fellowship II (#102039); NHMRC CRE on food policy interventions to reduce salt (#1117300); NHMRC project grants (#1052555 and #1111457).

## Author's contributions

ER, KT, CF, JR and JW contributed to the design of the study. All authors were involved in data collection and/or curation. ER analysed and interpreted the data and drafted the manuscript with support from JW. All authors contributed to the final manuscript by providing input into the interpretation of the data, reviewing, and editing the manuscript. All authors have read and approved the final manuscript.

## Acknowledgements

Not applicable

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