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A content analysis of oral health messages in Australian mass media

Abstract:

Background: Social analysis regarding oral health and oral health promotion are almost non-existent in the Australian context. The usefulness of such exploration lies in framing and informing research methodologies and health promotion initiatives and can improve our understanding of oral health behaviours and their social contexts.

Methods: We conducted a systematic content analysis of a random sample of popular Australian magazines, newspapers and television shows from May to September 2012. Our sample included the top three best-selling magazines, six weekly newspapers, one from each available Australian state; and the four highest-ranked Australian prime-time television shows and their associated commercials.

Results: Data comprised of 72 hours of prime-time television and 14,628 pages of hardcopy media. 71 oral health related media 'incidents' were counted during a five month period. Only 1.5% of incidents referenced fluoride and only two made dietary references. Women were represented almost six times more than men and the majority of oral health related incidents conveyed no social context (63%).

Conclusions: Oral health messages conveyed in Australian media fail to provide a social context for preventative or health-promoting behaviours. In light of increased levels of oral disease and retention of natural teeth, more community-based oral health promotion and support for oral health literacy would be prudent in the Australian context.

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Key words: oral health, media, messages, health promotion, content analysis, qualitative research

Introduction:

Currently, there exists a gap in the theoretical frameworks upon which oral health promotion in Australia can be discussed, implemented or improved as there is a lack of conceptualisation about Australians' oral health attitudes and behaviours. The first step in assessing the impact of health media is to assess the available information.

The style, location and context of oral health messages and images in popular culture mass media may influence audience's interpretations of oral health yet we lack an understanding of the prevalence and content of oral health messages in Australian mass media, obscuring efforts towards oral health promotion. Defining this gap is potentially an important first step towards improving oral health attitudes and behaviours and ultimately oral health outcomes. Considering the social context of oral health may provide insights into current differentials between reported oral care behaviours and oral health outcomes.

Previous national research by the Australian Institute of Health and Welfare report on oral health from 2002 on the public perceptions of dentistry showed that 84% of respondents reported that they gained preventive oral health information from the print media, compared with 65% from private dental practitioners and 57% from television[1]. Popular mass media is an important source of health information and a consolidator of health information and knowledge of effective preventive measures for any disease is requisite to the practice of preventive behaviours[2-6].

However, exactly what explicit oral health messages are being portrayed to the Australian public through free-to air and hardcopy mass media remains undocumented. Given the importance of free-to-air and hardcopy popular mass media to the public regarding

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population level oral health messages, it is imperative that information conveyed be accurate. Nevertheless, oral health promotion cannot be adapted or strengthened if the core components of available public information about oral health remain undocumented. Knowledge of effective preventive measures is requisite to the practice of preventive behaviours[7].

The power of the media to shape and influence people's perceptions and attitudes requires the messages embedded to be correct when viewing from a preventive health paradigm[8]. When coupled with known patterns of Australian dental visiting behaviours, which vary by socio-demographic factors (thereby reducing effectiveness of reinforcement of oral health provider messages), it is clear that understanding the characteristics of any oral health messages becomes paramount. Additionally, rising caries rates in sectors of the Australian population necessitates an exploration of community level risk factors which may not be captured in traditional epidemiological surveys[9]. The relationship between social norms and culture to public health has been well documented in the area of tobacco control in Australia and is accepted in the literature that a significant role of health promotion is in the shaping of these norms[10]. Considerable research in the area of obesity, diet and nutrition recognises the role of media in providing public health messages and the nature and construction of information provided[11] with television recognised as the most efficient and effective means of promotion[12]. Additionally, while health promotion encompasses a range of intersectoral and multi-level strategies to promote health, the effectiveness of mass media campaigns in the absence of other programming has been shown to be effective and sustainable in affecting behaviour change[10, 13]. In the absence of mass media campaigns promoting oral health in Australia, one is left to examine advertising, editorial, information and entertainment content which explicitly promote oral health to determine what messaging, what social context of oral health is being promoted. Social context is theoretically complex to define but can be broadly expressed as the 'circumstances or events that form the

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environment within which something exists or takes place and as that which therefore helps make phenomena intelligible and meaningful'[14]. Social context can be defined at the micro (family and peer), meso (school or workplace or neighbourhood) or macro level (policy, social acceptability, media). It is the macro level social context were explored in this paper.

Objective(s):

The aim of this research was to identify and examine current oral health related dialogue and messages in circulation in a random sample of popular Australian mass media.

Methods:

Sample and sampling

This study is an oral health content analysis of a sample of popular newspapers, magazines and television programs during a five month period and involved an analysis of all explicit oral health content found. Content analysis is often used in media study and involves the objective and systematic categorizing and describing of the content of communication [11]. Explicit oral health content or incidents were defined as any depiction of oral health activity, oral health suggestive or talk about oral health and portrayed oral health risks, behaviors, responsibilities or policy. Dietary advice which did not mention or represent oral health *explicitly* were not included in the sampling.

A random number generator was used to determine for each week, which days were selected for newspaper purchases and TV viewing. If no sample was available on that day, then the following day was selected. Magazines were purposely sampled each month. TV Media data and ratings were sourced from OzTam (television) and Neilson (newspapers and magazines)[15, 16].

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Analytic process

Initial attempts at coding were unsuccessful due to the extremely narrow breadth and limited nature of oral health related representations and messages available within all the media analysed. After reading of the literature, four dimensions of health were intended to be measured - discomfort, physical functioning, social functioning and wellbeing. Subtext coding was to included appearance, preventive care, treatment, health, individuals, organizations, family, children, and adults, positive, negative, gender, age, risk and demographics. Subsequently, a grounded theory approach was used to develop a basic taxonomy of oral health messages. This was performed by implementing an exhaustive reading and viewing of all selected media for any image or text relating to the oral cavity, oral hygiene practice, oral health policy or oral health promotion and subsequent coding of all incidents. Additionally, attention was given to the prominence of oral health messages as defined by page number and positioning.

As this was a media content analysis, no ethical considerations were required.

Results:

Frequency, size and location of incidents

A total of 71 oral health incidents were reported during the study period (Table 1). This was in total 72 hours of prime-time television viewing and 14,628 pages of popular print media. Of hardcopy and television media, the majority was advertising or product placement (79.1%) as shown in Table 1 with the second most prevalent media type being incidents with some news relating to oral health (eg: policy discussion or injury). Proportions of page coverage in hardcopy media devoted to incidents are reported in Table 1. Magazines had the highest proportion of full page coverage devoted to an oral health incident (53.1%) and the

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highest proportion of pages space involved in newspapers was an eighth of a page or less (55.6%).

Format of incidents

Mostly, incidents were delivered with no social context (62.7%). Table 2 reports on the type of risk, behaviour or responsibility depicted in the oral health incident. It shows that the majority of media incidents were product placements involving no activity i.e, hardcopy media constituting whole page adverts with no additional explanatory text, reported benefit or associated dietary recommendations. Only 1.5% of 'incidents' depicted mentioned the word fluoride. Zero mentions of the sugar/caries relationship were found[17]. The predominant focus of product placement (advertisements) focussed on diabetes and periodontal links to oral health.

Table 3 shows the type of oral health activity, suggestive or talk focus of the oral health incident and that in instances where people were represented in the oral health message or incident, the majority were female. The majority did not show any oral health activity (70%). No demonstrations of parental care towards child oral health were captured.

Discussion:

Although Australians have previously reported gaining more oral health information through print media than from dental practitioners, the results presented here suggest that current media is not well-utilized as a health promotion tool for shaping and influencing oral health behaviors and attitudes or opinions and that negligible preventive oral health messages are being conveyed. Traditionally, television has been considered the most powerful media source for information sharing and transfer of ideas and cultures. There are good reasons for analysing health information delivered on television as the most disadvantaged in the community are the heaviest consumers of television and are also those

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at higher and disproportionate risk of oral disease and poor oral health[18]. Additionally, television is designed for maximum engagement by viewers and research suggests that consequently consumers pay higher levels of attention to this media than to traditional health campaigns[18-20]. Despite the recognised value of the persuasiveness of television based health promotion [21], it offered only 4 incidents in 72 hours of prime-time, popular viewing. Moreover, limited information was available in other media sources. Product advertisements in hard copy were primarily directed toward diabetes-related care and fluoride was mentioned in only 1.5% of incidents. In light of the only Australian literature which suggests that people use media to reinforce or find oral health information [4, 13], popular television and magazines are not currently providing an effective conduit for enhancing oral health knowledge and behaviours in an Australian context. The majority of incidents did not convey explicit oral health behaviours such as use of fluoride toothpaste, fluoridated water or dietary recommendations referencing benefits to oral health. Additionally, there was no evidence of science-based information available about risk, oral disease etiology, disease prevention or 'active' oral health promotion in visual or written form. The scientific references reported related to aesthetic dentistry, reduction of sensitivity when using products and the relationship between gum disease and diabetes.
Although the research captured diet related incidents relating explicitly to incidents involving oral health, it did not capture non-oral health specific dietary advice recommending food or drink consumption that the literature recognizes as potentially non-cariogenic, hence non-oral health specific common risk-factor related dietary advice were not captured due to the limitations of the research.

The health literature suggests that people are generally unable to associate reasons for many preventive health recommendations (eg: consumption of dairy product use) with the diseases the recommendations are intended to prevent (eg: osteoporosis). These findings are

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supported by the data from the AIHW regarding calcium intake, osteoporosis and caries[1]. Such an apparent disconnect between health messages or information and knowledge becomes important in order to understand when non evidence-based notions about the best ways to prevent the development of caries are prevalent [22]. What is unknown is whether it is the messages portrayed which are contributing to the reinforcement of misunderstandings about best practice oral health behaviours or if they are more privately located and reproduced.

These findings reveal that limited oral health information is conveyed through traditional and popular Australian media. The majority of oral-health specific incidents do not represent oral health behaviours such as brushing with fluoride toothpaste or dietary recommendations beneficial to oral health. The number and content of oral health messages in our analysis was significantly less than anticipated. Because this study utilized a random sample exploring only the highest rated programs and magazines, it is possible that 'incidents' of oral health media exist elsewhere and were not captured. Oral health messages may have predominantly shifted to other platforms such as social media and other user-controlled, open- technology based, peer-to-peer digital platforms, a possible direction for further research. The ability to document evidence on such digital platforms (for example, targeted algorithm driven advertisements on Facebook, electronic news sites and intentionally designed health communities) was outside the scope of this research. Additionally what is unknown is whether these figures represent a change in the amount of oral health representations over time and effect on population oral health.

The absence of oral health messages in Australian popular free-to-air TV and hardcopy media is instructive. Oral health messages in popular Australian media primarily portray product advertisements for aesthetic dentistry and toothpaste and are framed at an

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individual level removed of context. If Australian adults still receive the majority of their oral health information from the mass media and almost half of Australian adults do not regularly visit an oral health professional, the second most common reported source of oral health information, we suggest there is a contemporary crisis in population level oral health promotion. 'Hidden' health messages in popular media may be positively 'consumed' by those that already hold adequate oral health literacy but such hidden messages cannot be consumed by those without such health literacy foundations. We theorise that the obvious lack of a relevant 'social context' in which an individual or family's oral health is promoted or practiced; the dearth of simple oral health information and lack of portrayal of recommended self-care behaviors which are beneficial to individual oral health may be reinforcing a population level 'epistemology of ignorance', and embed existing disparities in oral health. "Context can be defined as the circumstances or events that form the environment within which something exists or takes place and as that which therefore helps make phenomena intelligible and meaningful (interpreting something in context, versus out of context)."[14] The configuration of influences on the public that support or hinder oral health are key, eg: the interaction of lifestyle with diets and environment, and it is these that are evidently missing in public media. Product placement is rife but social marketing of oral health *promotion* is glaringly absent.

Non-ambiguous health information is fundamental to effective health behaviour and promotion practices. Health messages which are limited, inconsistent and/or ambiguous, ie: "hidden", impair population health[3.] There is scope for oral health centered health promotion to embrace a common risk factor approach and to promote oral health in a more strategic and informing context, leading to the provision of social support for and improvement of population oral health literacy[23] [24].

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Oral health 'illiteracy' is not simply a lack of knowledge, but actually indicative of a lack of power. Those who have knowledge of oral health aetiology, or even merely express individual level behavioural responses to social norms, will absorb some of the media messaging and shape them into their own frames of reference. Those with no or low oral health literacy will find nothing in these messages to add or incorporate into their own knowledge's[25].

Additionally, from a broader population health perspective, the dearth of the discussion about or simply the promotion of fluoride products' is worrying and heightened given recent consistent and pervasive attacks on the role of fluoride in maintaining and promoting oral health[26, 27]. Recommendations to reverse the outrage expressed and prior recommendations to promote oral health using chronic disease management model and shared risk factor approaches are clearly not present[28]. The lack of referencing to parental care for child oral health and poor reporting of dietary information and relationship to oral health suggest that these too may well be assumed and hidden health messages. Further work to consider how actual readers and viewers of mass media make use of the oral health information available is needed.

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Table 1. Total media incidents and proportion suggesting or representing any oral health incident

Media source and type		Incidents N=71 (%)
Television (72 hours)		4
Magazines/Newspapers (14,628 pages)		67
	Article/story/editorial	(20.9)
	Advertisement	(79.1)
Magazines		49
	1/8 page	(28.6)
	¼ page	(6.1)
	½ page	(12.2)
	Full page	(53.1)
Newspapers		18
	1/8 page	(55.6)
	¼ page	(27.8)
	½ page	(16.7)
	½ page	-

Table 2. Oral health risks, behaviors or responsibilities

Main focus of media incident	% of total incidents
Information exclusive to oral health	17.9%
Other story with some additional oral health information	11.9%
Product placement	70.1 %
Total	100.00

Table 3. Oral health activity, oral health suggestive or talk

Oral health activity	% of incidents
No activity involved/can't determine	70%
Hygiene mentioned	13%
Check-up/treatment mentioned	4.5%
Social context	% of incidents
No person depicted	62.7%
Male only	4.5%
Female only	28.4%
Both	4.5%
	100%

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