

Public Health Report

## Cancer Articles in Weekly Magazines: Useful Media to Deliver Cancer Information to the Public?

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**Objective:** Japanese weekly magazines, which have a circulation of over 2 700 000, play important roles in communicating with the public. They offer a wide range of information, entertainment, gossip, politics and economics, and often include articles on cancer. However, cancer articles in magazines have not been systematically analyzed.

**Methods:** We investigated cancer-related articles and advertisements in six major Japanese weekly magazines to demonstrate trends in public interest regarding cancer.

**Results:** The total number of articles assessed from July 2009 to December 2010 was 36 914, of which 696 (1.9%) were cancer articles. The total number of advertisements was 21 718, of which 340 (1.6%) were related to cancer. The number of cancer articles demonstrated an upward trend during the study period. Articles focused on lung ( $n = 145$ ) and urogenital cancer ( $n = 122$ ). The most common content comprised therapies and diagnosis ( $n = 340$ ) and case reports on individual patients ( $n = 160$ ). After a famous Japanese comedian revealed his prostate cancer diagnosis, the number of articles on prostate cancer increased from 2.0 to 6.6 per month. Immunotherapy including some dubious folk therapies was the most frequently reported cancer therapy in articles and advertisements (30.4%). A small group of oncologists were repeatedly referred to in comment sources; 35.6% of comments were presented by only five doctors.

**Conclusions:** Cancer articles in weekly magazines are common paper media for providing cancer information to the public. However, the information provided might place emphasis on unestablished treatments or biased opinions.

*Key words:* epidemiology/public health – cancer coverage – public communication

### INTRODUCTION

Cancer is a leading cause of death in developed countries (1). In Japan, ~50% of the population develops cancer during their lives, and one-third of the patients die from it. Most Japanese people are interested in information on cancer, especially novel anti-cancer agents, surgical interventions and oncology specialists in Japan. Mass media provide cancer information for the public through television, newspapers, the internet and weekly magazines.

Television and newspapers are two major forms of mass media. The estimated audience for television is ~3 000 000,

an audience rate consisting of 8.3% of the population in Japan (2). The circulation of the five major newspapers is ~27 000 000 in Japan (2). Although newspapers could be effective for the provision of current comprehensible information on cancer to the public (3), the contents of newspaper articles are liable to include bias due to space limitations in newspapers. Cancer coverage on television news may be limited in its effectiveness as a primary vehicle for cancer information, since it can be scattered and abbreviated (4,5).

In addition to television and newspapers, weekly magazines play an important role in communicating with the public. Magazines can provide detailed and in-depth

description due to relatively generous space limitations. In Japan, magazine contents have an exceedingly wide diversity. They are equivalent to various US magazines such as *Time*, *Newsweek*, *The New Yorker*, *People Weekly*, *The National Enquirer* or *US Weekly* (6). Additionally, Japanese weekly magazines play similar roles to tabloids in the USA. The total circulation of the six major Japanese weekly magazines is smaller than that of the newspapers and television viewing figures, at ~2 700 000 per week. However, the readership is estimated to be more than the circulation figures suggest. The magazines are advertised every week on trains and subways, which are the most popular form of transport in Japan.

Cancer articles in weekly magazines are interesting topics for the Japanese population. They provide the public with information on novel treatments, cancer-based hospitals and oncology experts. Katz et al. (7) reported that the available magazine articles on prostate and colon cancer screening frequently did not provide sufficient information, although the number of popular magazine articles on cancer has increased during the past two decades. However, few studies have been published on cancer coverage and cancer articles in weekly magazines. We investigated the cancer-related articles and advertisements that appeared in six major Japanese weekly magazines to demonstrate trends in public interest regarding cancer.

## METHODS

### PROCUREMENT PROCESS FOR COLLECTING CANCER DATA FROM WEEKLY MAGAZINES

We defined weekly magazines as publications that are printed on paper, generally published on a regular weekly schedule and contain a variety of content. We chose the top six weekly

magazines with the largest circulation, which are not woman's magazines or specialized magazines (8). We examined cancer-related articles and advertisements in the six magazines (*Weekly Gendai*, *Sunday Mainichi*, *Weekly Bunshun*, *Weekly Asahi*, *Weekly Shincho* and *Weekly Post*), from July 2009 to December 2010 (Table 1). Advertisements were defined as announcements in magazines by paying posting fee. The comment, 'This is an advertising page' was addressed at the bottom of the page in most advertisement articles. The introductory articles on clinics or drugs written by magazine reporters were excluded from advertisements. All the articles and advertisements containing the words 'cancer,' 'leukemia,' 'lymphoma' and 'sarcoma' were extracted from the magazines and counted. Changes in the number of cancer-related articles and advertisements were recorded and analyzed. All the articles in all the six magazines were inspected and confirmed at least twice by two authors (M.N. and M.K.).

### CLASSIFICATION OF CANCER-RELATED ARTICLES AND ADVERTISEMENTS

The cancer-related articles and advertisements were classified according to the primary site of cancer, the type of content and the type of treatment mentioned. We defined 'folk medicine' as a treatment without evidence on its efficacy in any authoritative medical literatures. Two authors (M.N. and M.K.) evaluated articles independently and discussed whether each treatment was classified into 'folk medicine' or not.

### DEMONSTRATION OF TRENDS IN CANCER ARTICLES IN MAGAZINES

We investigated the current status of cancer coverage in weekly magazines by means of assessing comments from

**Table 1.** The six major Japanese weekly magazines

Weekly magazines	Company	Category of industry	Circulation	Price (Yen)	Ads on the train	First published year	Feature and sales points
Weekly Bunshun	Bungei Shunju	Publishing company	726 800	300	+	April 1959	Articles not on newspapers nor on television, sports, entertainments
Weekly Shincho	Shinchosha publishing	Publishing company	624 246	300	+	February 1956	The oldest in the publishing companies, literatures, serial novels, cancer column
Weekly Gendai	Kodansha	Publishing company	522 466	300	+	March 1959	Photos of female talent, caricature, targeting male businessmen
Weekly Post	Shogakukan	Publishing company	455 598	320	+	August 1969	Gossip, conservative, targeting male businessmen
Weekly Asahi	Asahi Shimbun publications	Newspaper company	247 946	320	+	February 1922	The first magazine in Japan, having changed from economics to literature
Sunday Mainichi	Mainichi Newspapers	Newspaper company	125 837	350	+	April 1922	Politics and economics, flash report of matriculate
			2 702 893				

Major Japanese weekly magazines are listed in order of their circulation. Each circulation figure is the average per week for the year 2010. Two of the magazines are published by newspaper companies. Each of the magazines is available at a price of 3–5 dollars. Advertisements for all of the magazines are visible on trains and subways.

celebrities affected by cancer and oncology specialists cited in cancer-related articles during the investigation period.

## RESULTS

### TOTAL NUMBER OF CANCER-RELATED ARTICLES AND ADVERTISEMENTS

We extracted 696 articles and 340 advertisements relating to cancer from the six weekly magazines. The cancer-related articles accounted for 1.9% (696/36 914) of all articles, and the cancer-related advertisements accounted for 1.6% (340/21 718) of all advertisements. The number and ratio of cancer-related articles increased gradually in all magazines during the study period (Fig. 1). The number of cancer articles from July to September of 2010 ( $n = 151$ ) was more than double the number in the same months of 2009 ( $n = 69$ ). The *Weekly Shincho* had the most cancer articles ( $n = 160$ ) and the *Weekly Post* had the least ( $n = 79$ ) among the six magazines. A serial column on cancer by a radiologist appeared on the *Weekly Shincho*. The *Weekly Asahi* had the most cancer advertisements ( $n = 100$ ) and the *Sunday Mainichi* had the least ( $n = 23$ ).

Some articles told of celebrities who had contracted cancer, or related the stories of those who died from it. For example, Mr Kampei Hazama, one of the most famous comedians in Japan, revealed that he had been diagnosed with prostate cancer in January 2010. After his story had been published, the number of articles on prostate cancer increased from 2.0 to 6.6 per month (Fig. 2).

### PRIMARY ORGAN OF CANCER

The articles described cancer in the following primary organs: lung ( $n = 145$ , 9.9%), urogenital ( $n = 122$ , 8.3%), gastrointestinal tract ( $n = 110$ , 7.5%), hepatobiliary/pancreas ( $n = 101$ ,

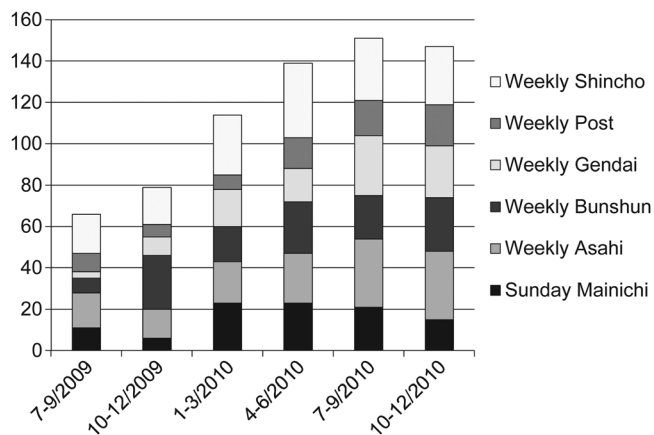
6.9%), breast ( $n = 81$ , 5.5%), colon/rectal ( $n = 78$ , 5.3%), gynecological ( $n = 77$ , 5.3%), hematopoietic ( $n = 45$ , 3.1%), otolaryngological ( $n = 37$ , 2.5%), brain ( $n = 21$ , 1.4%) and others ( $n = 17$ , 1.2%). Primary organs were not mentioned in 467 articles (31.8%). Each magazine did not make much difference in terms of the type of cancer. Figurative phrases in articles were also found, such as ‘He is just the cancer in the Democratic Party of Japan’. ( $n = 6$ , 0.4%). Every primary cancer lesion was counted redundantly when multiple cancers appeared in an article.

### CLASSIFICATION OF ARTICLES BY CONTENT

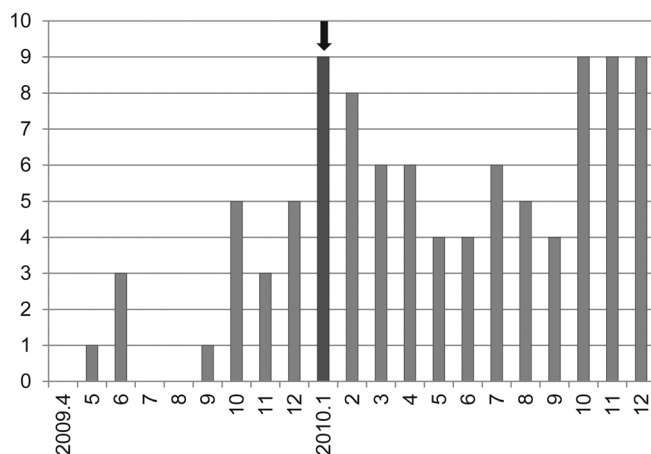
The content of the articles comprised cancer therapies including diagnosis ( $n = 340$ , 32.8%), case reports on individual patients ( $n = 160$ , 15.4%), referral reviews for clinics or books ( $n = 84$ , 8.1%), cancer biology ( $n = 63$ , 6.1%), medical economics or politics ( $n = 22$ , 2.1%), enlightening advocacy ( $n = 18$ , 1.7%), novel basic research on cancer ( $n = 8$ , 0.7%), medical incident or negligence ( $n = 3$ , 0.3%) and others. Each magazine did not make much difference in terms of content.

### CLASSIFICATION OF ARTICLES BY METHOD OF TREATMENT

Among the 340 articles and advertisements on cancer therapy, the treatments described included surgery ( $n = 63$ , 16.2%), terminal treatments or hospice care ( $n = 42$ , 11.3%), chemotherapy ( $n = 41$ , 10.5%), radiotherapy ( $n = 35$ , 9.0%), new technologies ( $n = 18$ , 5.3%) and diet therapy ( $n = 16$ , 4.7%). However, the highest percentage of articles described immunotherapy for cancer ( $n = 112$ , 30.4%). Almost all of these articles reported dubious folk medicine and novel uninsured immunotherapeutic treatments without associated evidence.



**Figure 1.** Total number of cancer-related articles in weekly magazines. All articles including the word ‘cancer’ were counted in six major Japanese weekly magazines published between July 2009 and December 2010.



**Figure 2.** Number of articles on prostate cancer in weekly magazines. Mr Kanpei Hazama, a popular Japanese comedian, acknowledged that he had prostate cancer in January 2010 (arrow). After this, the average number of articles on prostate cancer increased from 2.0 to 6.6 per month.

## NUMBER OF COMMENTS BY ONCOLOGY SPECIALISTS

A total of 132 cancer specialists remarked on cancer in the magazines during the 18-month observation period. According to analysis of comments on cancer by doctors, the comments of only five doctors accounted for 35.6% (121/340) of the total number of comments. A radiologist provided 81 of the 340 comments (23.8%). In addition, comments on urogenital cancer by three urologists accounted for 63% of the total number (19/30).

**DISCUSSION**

This study demonstrates that weekly magazines play an important role in providing information on cancer to the public. Cancer-related articles were found in 1.9% of all articles in the six weekly magazines (Fig. 1); these situations were comparable to the newspapers in Japan (1.5–2.0%) (3).

The publication of cancer articles has increased progressively. The number of cancer articles in 2010 was more than double the number in 2009 (Fig. 1). The traditional media have been overwhelmed by online media (9,10). Weekly magazines are no exception, and their circulations have been decreasing. As a result, the editors of these magazines have revised the contents of their articles to be aimed at the aged generation in line with the aging population (11). We found a comparatively high rate of articles on terminal care and cancer hospices (11.3%).

Concerning the primary organ of cancer, articles on lung, urogenital and gastric cancers were most common, since a large part of the readership is aged males. Topics on common malignancies in Japan could attract the public's interest. In contrast, articles on gynecological and breast cancers appeared less frequently in magazines than in newspapers, since the six magazines assessed mostly targeted male readers. It is difficult to obtain information on cancer that cannot attract readers' attention in the magazines.

Famous patients' diaries on their fight against cancer were common in the magazines (15.4%). This is in contrast to the newspapers, in which the focus is on cancer and the health-care system (3). Celebrities' diseases attract readers' interest, and the diagnosis of cancer is no longer thought of as a secret. Thus, articles on celebrities who have been diagnosed with cancer could act as an advertising source for the weekly magazines. Since Mr Hazama admitted that he was suffering from prostate cancer through the media, advertisements for medical checkups as well as articles on prostate cancer have increased progressively (Fig. 2).

This study demonstrated that articles and advertisements on cancer can relate dubious folk immunotherapies to the public. Interestingly, most of these articles and advertisements used the borderline method of 'the ads of books' to avoid conflict with the Pharmaceutical Affairs Law. Many books on activated-lymphocyte therapies that can completely cure any cancer are advertised in every magazine every week. Although therapeutic options may be extended for

desperate patients, clinicians should recognize this situation and inform readers of it.

Medical doctors whose comments were repeatedly referred to in cancer articles were confined exclusively to a few oncologists. Surprisingly, 23.8% of comments were attributable to a single radiation oncologist. Compared with newspapers, a small number of staff gathers information. Most reporters are pressed by deadlines on every piece of work. It is reasonable to assume that they depend on a few doctors who are willing to be interviewed. We should recognize the presence of bias that a disproportionate emphasis was placed on opinions by limited medical specialists in many contents of cancer articles.

We showed that weekly magazines could be one of the most effective forms of paper media for transmitting information on cancer to the public; however, there are some limitations to be discussed. First, the observation periods were too short to draw a definite conclusion. Further long-term studies are required. Secondly, we did not investigate online magazines. Since many online magazines have been set up, many people will be able to surf many cancer articles easily in the future. The readership could be altered due to the spread of online magazines. Thirdly, the number and potential influence of cancer-related advertisements were probably underestimated, since any investments to the magazines by pharmaceutical companies might affect their contents. Lastly, there is a problem with the assumption that these six Japanese magazines could represent other innumerable magazines. Although these magazines with the largest circulation were supposed to be possible to apply to the generalizability, our research needs to be extended over a wide range of magazines, including women's magazines, specialized magazines or business magazines.

In conclusion, various pieces of information on cancer targeting the readership of these magazines can be transmitted in an easily comprehensible manner, although information included in the articles might place emphasis on unestablished treatments or biased opinions. If the distinctive characteristics of the magazine media are better understood, accurate information can be delivered to the public.

**Authors' contributions**

M.N. and M.K. were involved in conception and design, data collection and organization. M.N., M.T. and M.K. were involved in data analysis and interpretation. M.N., Y.H. and M.K. were involved in manuscript writing. M.N., M.T., Y.Ki, Y.Ko., T.M., N.M., Y.H. and M.K. contributed to final manuscript approval.

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### Conflict of interest statement

None declared.

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