

Medical choice and attitudes toward pharmaceutical adverting of the Chinese consumers

Chan, Kara

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**CHINESE CONSUMERS' ATTITUDES TOWARD
PHARMACEUTICAL ADVERTISING**

Dr. Kara Chan
Assistant Professor
Department of Communication Studies
Hong Kong Baptist University
Kowloon Tong, Hong Kong

Fax: (852) 2339-7890
Telephone: (852) 2339-7836
E-mail: karachan@hkbu.edu.hk

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Chinese consumers' attitudes toward pharmaceutical advertising

Abstract

A survey of 500 respondents from Beijing, China was conducted to investigate their perception about functions and consequences of pharmaceutical advertising and their medical decisions when encountering health problems. Results indicated that Chinese consumers held a very positive attitude toward advertising as well as pharmaceutical advertising. Market information function was well received. However, pharmaceutical advertising was considered neither enjoyable nor trustworthy. The strongest criticisms about the societal effects of pharmaceutical advertising came from economic considerations. Consumers strongly supported the need for tighter control of the content of pharmaceutical advertising. Self-medication was common in China (as opposed to going to a medical doctor). Medical decisions depended largely on specific health problem faced. The proportion of consumers who used over-the-counter pharmaceuticals as a first-line treatment varied from 35 percent for constipation to 51 percent for flu. Neither the western nor the traditional Chinese medical treatment gained overall popularity among consumers for five common health problems. Consumers' right was not popular in China. Dissatisfied Chinese consumers were more likely to bad-mouth a brand than complain to authorities.

(170 words)

Chinese consumers' attitudes toward pharmaceutical advertising

Introduction

This study aims to measure how people in China perceive about pharmaceutical advertising, their medical decisions when encountering with health problems and their opinion toward regulation of pharmaceutical advertising.

Pharmaceutical advertising is one of the most heavily advertised product categories in China that accounted for about one sixth of the advertising expenditure in 1994 (Jiefeng Daily, 1995). Past research (Chan, 1995b) indicated that most of these pharmaceutical commercials were informative. However, they conveyed only information about performance and failed to communicate other important information like quality or company research (Chan, 1995b). Some of the pharmaceutical commercials were found to contain illegal claims (Chan, 1995a).

A recent research indicated that Chinese consumers showed an overall interest in advertising and felt that advertising is a good source of information about products and services. The major criticisms of advertising were 'too much advertising', 'low production quality' and 'not trustworthy' (Eastern Express, 1995).

This study aims to achieve the following objectives:

1. to measure consumers' overall perceptions of pharmaceutical advertising and their beliefs about the functions and consequences of pharmaceutical advertising;
2. to investigate their medical decisions; and
3. to explore public attitudes toward the regulation of pharmaceutical advertising.

A systematic study of consumers' perception of pharmaceutical advertising will benefit the advertising industry as well as help advertising education practitioners to

better understand of how advertising works in China. This study also assists global pharmaceutical advertisers targeting at the fast-growing market of China to design their marketing communication policies and activities.

Literature review

Health-oriented goods are one of the products whose advertising is restricted for legal reasons, because societies fear the consequences of excessive market-place exposure (Shao and Hill, 1994). In a survey on 344 American advertising agency affiliates in fifteen different countries, pharmaceuticals stood out as having the most legal restrictions (Shao and Hill, 1994).

Over the years, public awareness of health and health products has grown and consumers have demonstrated a desire to assume a more active role in their health care (Kasteler, Kane, Olsen and Thetford, 1976). Health care marketers sparked interest in adopting a consumer orientation of product marketing (Zimmerman, 1983). World-wide, the pharmaceutical market in 1994 was valued by Euromonitor at around US\$259 billion at manufacturers' selling prices, with prescription drugs representing US\$222 billion sales and over-the-counter (OTC) medicines US\$37 billion (Euromonitor, 1995). The OTC market in America is expected to nearly double in sales from 1990 to 2000, attributed primarily to a growing product class of prescription drugs that are switched to OTC status (Hoy, 1994).

The OTC pharmaceutical market is becoming more sophisticated. Consumers are becoming more aware of the importance of maintaining a healthy lifestyle and are therefore making more use of self-medication products. Results of a survey conducted in Europe indicated that the proportion of consumers who used OTC medication as a first-

line treatment varied from 24% in the Netherlands to 55% in the United Kingdom (Financial Times Management Reports, 1994). The reports stated that there was a higher level of information currently available on the use of self-medication. Information availability had largely been a result of the growing influence of consumer groups' desires to know more about the safety and efficacy of medicines (Financial Times Management Reports, 1994). Interestingly, the increasing consumer awareness also made it more likely that the general public would visit a pharmacist before going to a general practitioner if they feel that they were making an informed decision about their own treatment. A study on consumers' attitudes toward non-prescription advertising indicated that these advertisements were viewed favourably. Consumers felt that non-prescription pharmaceutical advertising would provide information that they had a desire and a right to know (Perri and Nelson, 1987). Consumers surveyed also expressed concern that medical professionals might not always be well-informed.

The pros and cons of advertising OTC pharmaceuticals to consumers receive much concern in the society. One major concern is the potential for consumer misinterpretation and the potential for consumers who are exposed to the advertisements to pressure physicians into prescribing inappropriately (Krieger, 1983; Masson and Rubin, 1985). Self-medication is largely based on the assumption that ordinary people are capable of correctly self-diagnosing the existence of the condition for which an OTC drug is to be used (Johnson, 1986). However, this assumption may be violated for specific segments of the society including the elderly consumers, children and adolescents (Hoy, 1994). Some opponents fear that direct-to-consumers advertising will increase pharmaceutical price (Krieger, 1983). Others contend that the increase in

competition will lower pharmaceuticals' prices (Masson and Rubin, 1985). Other criticisms are that direct-to-consumers advertising could confuse patients (Krieger, 1983; Morris, 1984), and that pharmaceutical advertising to consumers could trivialize and foster an excessive use and abuse of legitimate and illicit pharmaceuticals in the society (Shimp and Dyer, 1979; Mastroni, 1984; Novitch, 1984). However, some found positive outcomes from such promotional efforts. Everett (1991) noted that informed patients were more likely to discuss advertised products with their physician and made better purchasing decisions.

The use of pharmaceuticals and the adoption of self-medication vary greatly for different countries with different cultures. In recent years, the growing criticism of the nature and practices of modern western medicines about the risks and deficiencies of chemical and physical therapy has prompted some skeptics to look for other traditional medications (Unschuld, 1985). Chinese medical civilization offers a wealth of primary sources of handling of human illness that stretches over a period of nearly 3,500 years and with variety of treatment options (Unschuld, 1985).

Pharmaceuticals in China

China has a long-established pharmaceutical industry and a rich heritage in traditional medicines. Encouraged by state-funded incentives for modernization, there was an emergent participation by international manufacturers in the domestic pharmaceutical industry in China. Pharmaceutical advertising has been one of the top advertising product category in China. This is probably because of the high profit margin of the products as well as the increasing concern of consumers about their health

as a result of increased living standard. There are also many young consumers taking various types of health product for beauty, intelligence and mental growth.

In a survey of elderly patients in the United States, China and Hong Kong, it was found that people in 19 percent of the respondents in China used advertising as a source of information about medicine compared to only 2 percent in both Hong Kong and the United States (Smith and Smith, 1997). The results point to the importance of effective regulation of pharmaceutical advertising in China.

The advertising of pharmaceuticals has been regulated by the State Administration of Industry and Commerce and the Ministry of Public Health. The new Advertising Ordinance implemented in February 1995 provides specific guideline and restriction on pharmaceutical advertising. The Ordinance bans the advertising of a number of pharmaceutical, including those used for treating aids, tumors, sex problems and drug addiction as well as those connect with vaccinations and family planning. It also prohibits the use of exaggerated and unscientific language, the citing of cure rates and prize-winning, the use of the names or images of medical experts or children, the direct display of illness or diagnoses, and the commitments promising refunds or insurance. The regulations are expected to provide a more effective legal guarantee for the safety of medicines and for directing the medicine advertisement into healthy development (Xinhua News Agency, 1995). Before the implementation of the new Advertising Ordinance, pharmaceutical advertising that violated the official regulations was not uncommon. In a content analysis of 83 pharmaceutical commercials, over 50 percent was found illegal for not featuring the official drug code or the physician's advice (Chan, 1995a). Non-compliance of regulations was probably due to ineffective advertising

ensorship system, unclear definition of pharmaceutical products and inadequate knowledge of the gatekeepers of the advertising authorities.

The abundance of pharmaceutical advertising has brought much attention in the Chinese society. Major criticisms are about the overstating of effectiveness of pharmaceuticals and understating of side effects, mis-use of images of professionals and medical institutions, the danger in promoting pharmaceuticals that have not passed extensive clinical tests, and the confusion between health food and pharmaceutical advertising (Jia, 1994). Some medical professionals also commented the economic cost in mis-use of pharmaceuticals, the possible delay in clinical treatment and the interference of physicians' prescription decisions (Li, 1993)

Consumers' attitudes toward advertising

Consumers differ in the direction, degree and type of overall attitude they hold about advertising. Studies on consumers' attitudes toward advertising found that these attitudes are product specific. For example, Mittal (1994) surveyed 300 consumer panel members and consumer disliked the advertising on political candidates, beer, feminine hygiene and cars. He suggested that consumers' attitude toward advertising should be measured at specific product category level. It has been suggested that consumer' attitudes to individual advertisements are influenced by their attitudes to advertising in general (Bauer and Greyser, 1968; Alwitt and Prabhaker, 1992). In order to develop effective persuasive advertising, an advertiser should know how its target market perceived about advertising. Studies in United States have constantly reported that the consumers' overall evaluation of advertising was negative (Bartos, 1981; Andrews, 1989; Alwitt and Prabhaker, 1992). However, studies in Hong Kong indicated that Chinese

consumers in Hong Kong held much positive attitudes toward advertising (Martin, Cheng, Wilson and Tsui 1994; Chan and Ruidl, 1996). Recent research in China found that a majority feels that advertising is a good source of information on products and helps to spur competition (Eastern Express, August 22, 1995). Those who disliked advertising said it was because they felt most advertisements were incredible, exaggerated and poorly produced.

Pollay and Mittal (1993) distinguished between advertising as an instrument and as an institution, and between personal uses and societal effects of advertising. They suggested three groups of personal uses: product information, social role and image, and hedonism or pleasure. At the societal effect level, they proposed four groups of beliefs that included effect of advertising on the economy and materialism, value corruption and the extent to which it seems false or lacking sense. In Mittal's (1994) study, beliefs about personal uses and societal effects of advertising were conceptualized as the functions and consequences of advertising respectively. In the review of consumers' attitudes toward advertising, O'Donohoe (1995) found that users of a product category are more likely to find the advertising relevant and enjoyable.

Chan and Ruidl (1996) apply this model in the study of Chinese consumers' attitude toward television advertising in Hong Kong. Results indicated that 27 percent of the total variation of the overall attitude toward television advertising could be explained by consumers beliefs about specific functions and consequences of television advertising. Perceived entertainment, knowledge and social image functions and perceived economic benefit of improving living standard were major influence of favourable overall attitude. Perceived manipulation on people to buy unnecessary things and economic cost were

major factors contributing unfavorable overall attitudes (Chan and Ruidl, 1996). In a cross-cultural study of consumers' attitudes toward OTC drug advertising, Chan and Ha (1996) found that American and Hong Kong consumers were very similar in their overall perception of functions and consequences of OTC drug advertising. However, American consumers found OTC drug advertising more entertaining, more indispensable and less confusing.

Research methodology

This study explores how Chinese consumers perceived about functions and consequence of pharmaceutical advertising, their choice of medical decisions and their opinion toward government's regulation of pharmaceutical advertising.

The study was conducted in Beijing using a structured questionnaire in Chinese. Beijing residents were selected based on a quota sample by sex and age. Respondents were recruited through various sources including intercept at shopping locations, parks, hospitals, schools and cultural centres at different areas of the Beijing city. Data were collected through personal interview during the period April to May, 1996.

The questionnaire started with four questions on overall attitude toward advertising in general and pharmaceutical advertising. Respondents were requested to indicate whether they considered advertising in general and pharmaceutical advertising to be good or bad, and, whether they liked or disliked advertising in general and pharmaceutical advertising. Averaging the scores on the good/bad and the like/dislike dimension formed an overall attitude score toward advertising in general and pharmaceutical advertising. These two dimensions include both rational and emotional evaluation of advertising.

The questionnaire followed with statements on functions and perceived consequences of pharmaceutical advertising and their opinion on the regulation of pharmaceutical advertising (see Table 3). Most of these statements were from Mittal's (1994) study. Respondents were asked to rate these statements on a 5-point scale (5=strongly agree, 1=strongly disagree).

Pharmaceutical advertising is conceptualized to carry six functions and consequences. The market information function reflects the classical economic view that the purpose of advertising is to provide information about pharmaceuticals. The buying confidence function refers to the evaluative contribution of advertising in aiding consumer purchase decisions and buying confidence. The entertainment function refers to the pleasure or enjoyment they could possibly obtain by watching or reading pharmaceutical advertising. The economic costs and economic benefits reflect the positive and negative influences on the economy. The manipulation effect indicates their buying behaviors are controlled by pharmaceutical advertising. Two to three statements were tapped for each of these dimensions and their internal validity was accessed.

Then they were asked about their medical decisions when facing five common health problems: fever, diarrhea, flu, stomach ache and constipation. The choices include no action, taking OTC drug, consulting Western doctors, consulting Chinese doctors, and consulting friends with medical knowledge. The questionnaire closed by requesting various demographic information.

Altogether 500 questionnaires were collected. The demographic profile of the sample is shown in Table 1. There were equal numbers of females and males, 25 percent and 30 percent between the ages of 20 to 29 and 30 to 39 respectively, 42 percent having

college or university education levels. About thirty-eight percent were management and office staff, and exceeding 80 percent working in state corporations. Nearly half had a monthly personal income between 501 to 1,000 yuan. Fifty-nine considered themselves as liberal, and there were equal proportions considering themselves as having ‘Westernized’ and ‘Chinese’ orientations.

[TABLE 1 ABOUT HERE]

Results

Overall attitude Beijing consumers had positive overall attitudes toward advertising in general as well as pharmaceutical advertising (Table 2). About two thirds of the sample considered advertising was quite good or very good. Half of the sample quite like or like advertising very much and close to forty percent felt neutral about it. Fifty-three percent of the respondents considered pharmaceutical advertising quite good or very good. Forty-one percent of the sample quite like or like pharmaceutical advertising very much and thirty-six percent felt neutral about it.

The mean score of consumers’ attitude toward advertising in general on the bad/good scale was 3.7 which was slightly higher than the mean score of 3.5 on the dislike/like scale, with higher value represented more positive attitudes. The mean score of consumers’ attitude toward pharmaceutical advertising on the bad/good scale was 3.4 which was slightly higher than the mean score of 3.2 on the dislike/like scale, with higher value represented more positive attitudes. The Pearson correlation between the bad/good and the dislike/like scales for advertising in general and pharmaceutical advertising was 0.52 and 0.72 respectively. Both correlation coefficients were significant at 0.0001 level.

This indicated that rational evaluation and emotional feeling about advertising were positively related with advertising in general as well as for a specific product category. The high correlation coefficient also justified the compilation of an overall attitude score toward pharmaceutical advertising.

[TABLE 2 ABOUT HERE]

Perceived functions and consequences of pharmaceutical advertising The mean and standard deviation of consumers' perceived functions and consequences of pharmaceutical advertising is summarized in Table 3. To aid interpretation, composite scores are computed by taking the mean of the constituent items for each category of functions and consequences.

Offering market information about pharmaceutical products was considered as the basic function of advertising. Results indicate that the market information function was best received among Beijing consumers. A majority of the sample says pharmaceutical advertising helped them keep updated about new medicines as well as help knowing about functions of specific brands. However, Beijing consumers marginally considered pharmaceutical advertising an important source of information.

The entertainment function of pharmaceutical advertising was marginally received. Although some consumers expressed an appreciation of some pharmaceutical commercials, they seldom recalled them and they did not find them more enjoyable than television programs.

Beijing consumers did not perceive the buying confidence function of pharmaceutical advertising. Although some agreed that pharmaceutical advertising helped them to select the best buy, majority disagreed that one could put more trust in

advertised brands. They were skeptical about trustworthiness of pharmaceutical advertising.

Respondents held strong belief about the economic costs of pharmaceutical advertising on consumers. Majority believed that pharmaceutical advertising increased the costs of products and supported that some advertising money should be reserved for product improvements. However, respondents did not favor the complete elimination of pharmaceutical advertising.

Respondents did not perceive that pharmaceutical advertising manipulates consumers. Over half disagreed that pharmaceutical advertising encouraged consumers to buy unneeded medicines. There were roughly equal proportions of respondents who agreed or disagreed that pharmaceutical advertising encouraged people to recklessly try new pharmaceutical.

The economic contribution of pharmaceutical advertising was not well received by the respondents. Forty-six percent did not think pharmaceutical advertising would improve the standard of public health. Forty-seven percent did not see the need of pharmaceutical advertising to support the production cost of mass media content. However, there was a slightly higher proportion of respondents who perceived that pharmaceutical advertising facilitates healthy competition in the market.

Alpha coefficients indicating the internal validity of individual conceptual dimensions was compiled. The alpha coefficients for all concepts were found acceptable at over 0.4.

[TABLE 3 ABOUT HERE]

Correlation with overall attitude The Pearson correlation coefficients between the overall attitude toward pharmaceutical advertising and perceived functions and consequences of pharmaceutical advertising are shown in Table 4. All six correlation coefficients were significant at 0.0001 level. This indicated that Chinese consumers' overall attitude toward pharmaceutical advertising was strongly influenced by their perceptions on the functions and consequences of pharmaceutical advertising. Perceived buying confidence function and economic benefits were strongest positive correlates of overall attitude toward pharmaceutical advertising. Perceived manipulation and economic costs were strongest negative correlates.

[TABLE 4 ABOUT HERE]

Call for government regulation Respondents' opinions toward government regulation are summarized in Table 5. They objected to the proposition that pharmaceutical advertising content should be free from government control. Instead, they urged stronger control on the content of pharmaceutical advertising. Respondents also supported regulations to limit the number of times a pharmaceutical advertising was run on television.

[TABLE 5 ABOUT HERE]

OTC drug consumption when encountering health problems First-line medical decisions made when respondents encounter with health problems are summarized in Table 6. Results indicated self-medication was very common for Beijing consumers. At least thirty-five percent of the respondents always take OTC medicine when encountering when the five selected health problems. Taking an OTC drug was specific to the illness. Respondents were more likely to take OTC drugs when suffered from flu,

diarrhea and stomach ache. Consulting people with medical knowledge was not common as less than five percent of the respondents always talked to them first. The preference of western and traditional Chinese doctor was also illness specific. Western doctors were preferred for treatment of diarrhea and fever while traditional Chinese doctors were preferred for treatment of constipation. Respondents had no preference of western or Chinese doctors when they suffered from flu and stomach ache. Quite a high proportion of respondents always took no action when suffered from constipation. This indicates that consumers are less concern about chronic diseases.

[TABLE 6 ABOUT HERE]

Complaint channels Respondents were asked about their most possible action when they purchased some low quality medicine. The results were summarized in Table 7. Results indicating that fifty-three percent were most likely to bad-mouth the products. Complaining to consumer councils and organizations responsible for regulating advertising were not common. One sixth of the sample chose to take no action at all.

[TABLE 7 ABOUT HERE]

Discussions and conclusions

The study revealed that Chinese consumers held positive attitude toward advertising in general and pharmaceutical advertising. Results were very similar to that obtained for Hong Kong consumers (Chan and Ruidl, 1996). However, this is opposite to many research findings reported for the dislike of television advertising in the United States (Alwitt and Prabhaker, 1992; Mittal, 1994). Compared to the United States, advertising in China was relatively new to the consumers. This may indicate that for less developed retail markets, consumers are less critical toward advertising.

The market information function of pharmaceutical advertising was well received by Beijing consumers. However, pharmaceutical advertising was not very enjoyable nor trustworthy. This suggests that consumers are very rational and mature. They utilized pharmaceutical advertising to gain knowledge about new brands and features. However, they have developed a defensive mechanism toward advertising claims and they did not put more trust on advertised brands.

For the consequences of pharmaceutical advertising, the strongest criticism comes from economic considerations. Consumers strongly believed that advertising expenditure of pharmaceuticals increased the cost and was not worthy. The common criticism about advertising's manipulation of consumers was not strongly supported. As the consumers placed a healthy skepticism on the persuasive messages in the advertisements, they were not likely to perceive that pharmaceutical advertising was a powerful and influencing medium. The perceived economic benefits such as enhancement of competition and improvement of public health were marginally received by respondents. The economic contribution of pharmaceutical advertising to free media content was least endorsed. Consumers were more concerned about the economic costs of advertising to them. The results suggest that manipulation and persuasion are closely related. A weak criticism on manipulating power of pharmaceutical advertising is probably due to low perceived credibility and persuasiveness of these advertisements.

Despite of the confusion in message execution of many pharmaceutical advertisements, it is very surprise to find that the public showed an overall positive attitudes toward pharmaceutical advertising. This indicates that the perceived information value of pharmaceutical advertising outweighs the possible undesirable

consequences. As consumers generally had the feeling that they were in control, they did not favour a complete elimination of pharmaceutical advertising.

Consumers' perception about functions and consequences of advertising was closely related to their overall attitudes toward pharmaceutical advertising. Respondents who perceived that pharmaceutical advertising aided buying confidence and brought economic benefits to the society were more likely to held a favorable attitude.

Respondents who perceived that pharmaceutical advertising manipulated consumers and costing them was more likely to held an unfavorable attitude.

Consumers strongly supported for a tighter control of the content of pharmaceutical advertising. This indicates that the consumers were very dissatisfied with the confusion and overclaim of the existing advertisements.

Self-medication was very common in China. Taking of OTC drugs was reported in a variety of health problems. It was interesting to know that medical decision was highly illness-specific. Consumers held different perception on seriousness for different diseases. Some illnesses, such as constipation, are considered as less serious and attracted less medical treatment. Some illnesses, such as fever and stomach ache, are considered as more serious and warrant professional attention. The choice between western doctor and traditional Chinese doctor was different for different disease too. Neither the western nor the traditional Chinese medical treatment gained overall popularity among consumers for all diseases. This indicates that consumers have a complicated perception map about the need for consulting doctors and preferred type of treatment. Medical choice becomes a match of health problem encountered and an appropriate treatment.

The result that the overall attitudes toward pharmaceutical advertising were less favourable than attitude toward advertising in general is consistent with what predicted by Biel and Bridgwater (1990). Biel and Bridgwater (1990) reported that people like commercials for 'Approach' products such as food and beverages more than commercials for 'avoidance' products such as medicine and household products. It may reflect our human nature of hiding from problems.

Consumer right is not popular in China. Dissatisfied Chinese consumers seldom pursue to complain to authorities. They may feel uneasy to complain or they do not know how and where to complain. The time and effort to channel complaints and the delay in reply may hinder consumers' motivation to report to authorities. The Chinese traditional culture of maintaining harmony is also a hindrance to direct confronting actions. The consumer councils and relevant government departments should enhance their publicity activities if they want to encourage for public awareness of consumer rights. However, dissatisfied consumers were keen to use their personal influence by advising friends not to purchase the products. Although Chinese consumers share a wide personal network through family link and working units, the power of word-of-mouth is minute when compared with the huge potential audience size of the advertising messages. It is speculated that advertisers will simply ignore the responses of the dissatisfied consumers. Unless the consumer councils and the departments regulating the advertising step up their authorities, Chinese consumers' grievances can hardly be heard or be taken seriously.

As the Chinese consumer markets become more mature, it is speculated that consumers' positive attitude toward advertising in general will deteriorate. Chinese

consumers are likely to become more critical, more difficult to persuade, and more concerned about consumer rights.

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Table 1 Sample profile (N=500)

Demographic	No.	%
Gender		
Males	247	50
Females	247	50
Age		
20-29	123	25
30-39	150	30
40-49	91	18
50-59	78	16
60+	58	12
Education		
Secondary or below	122	25
Higher	166	33
College or university	211	42
Occupation		
Managers and executives	112	22
Teachers and medical staff	90	18
Office staff, sales and self-employed	137	28
Production workers	68	14
Students and others (Retired and unemployed)	93	18
Working Unit		
state corporation	377	82
foreign enterprise	17	4
joint venture enterprise	34	7
local entrepreneur	34	7
Monthly personal income		
below 500 yuan	151	31
501-1,000 yuan	244	49
1,001-2,000 yuan	101	21
Value Orientation		
liberal	260	59
conservative	188	41

Behavioral Orientation

westernized	220	49
Chinese	228	51

Table 2 Overall opinion on advertising in general and pharmaceutical advertising

Item	No.	%
Overall, is advertising in general a good thing or a bad thing?		
very good	100	20
quite good	216	43
neither bad nor good (no opinion)	149	30
quite bad	23	5
very bad	11	2
Overall, do you like or hate advertising in general ?		
like advertising very much	56	11
quite like advertising	192	39
neither like or hate advertising (no opinion)	187	38
quite hate advertising	56	11
hate advertising very much	7	1
Overall, is pharmaceutical advertising a good thing or a bad thing?		
very good	60	12
quite good	205	41
neither bad nor good (no opinion)	139	28
quite bad	63	13
very bad	31	6
Overall, do you like or hate pharmaceutical advertising?		
like advertising very much	32	6
quite like advertising	172	35
neither like or hate advertising (no opinion)	179	36
quite hate advertising	94	19
hate advertising very much	21	4

Table 3 Perceptions of the functions and consequences of pharmaceutical advertising

Function and consequence	Mean	Standard deviation
Market information (alpha=0.54)	3.35*	0.62
Pharmaceutical advertising let me know what new pharmaceuticals are available in the market.	3.73	0.74
Pharmaceutical advertising makes me know which brand has the function I need.	3.38	0.86
Pharmaceutical advertising is an important source of information on pharmaceutical.	2.93	0.98
Entertainment value (alpha=0.63)	2.98*	0.70
I appreciate some of the pharmaceutical advertising.	3.30	0.90
Sometimes I retrospect on some of the pharmaceutical advertising.	3.00	0.93
Some pharmaceutical advertising is more enjoyable than TV program.	2.64	0.93
Buying confidence (alpha=0.67)	2.94*	0.77
Pharmaceutical advertising helps consumers to select the best brand.	3.11	1.03
Those pharmaceuticals that advertise are more trustworthy than those that do not.	2.88	0.89
If there is no pharmaceutical advertising, to decide which one to buy will be difficult.	2.83	1.05
Economic costs (alpha=0.57)	3.42*	0.68
If the spending on pharmaceutical advertising is spent on improving the product, the money spent will be much more worthwhile.	3.75	0.95
Pharmaceutical advertising increases the cost of the product	3.69	0.93
It is more beneficial to consumers if there is no pharmaceutical advertising.	2.81	0.90
Manipulation (alpha=0.58)	2.85*	0.95
Pharmaceutical advertising encourages people to recklessly try new pharmaceutical.	3.05	1.13
Pharmaceutical advertising encourages people to buy unnecessary pharmaceutical.	2.66	1.14
Economic benefits (alpha=0.52)	2.81*	0.70
Pharmaceutical advertising facilitates healthy competition between products, which brings more benefits to consumers.	3.04	0.94
Pharmaceutical advertising improves the standard of public health.	2.74	1.02
We need the advertising revenue from pharmaceuticals to subsidize the production cost of mass media content.	2.66	0.96

*mean scores are obtained by taking the mean of the comprising statements

note: 5=strongly agree; 1=strongly disagree

Table 4 Pearson correlation of overall attitudes toward pharmaceutical advertising and perceived functions and consequence of advertising

Function and consequence	Overall attitude toward pharmaceutical advertising
Buying confidence	0.49
Economic benefits	0.48
Entertainment value	0.45
Market information	0.42
Economic costs	-0.41
Manipulation	-0.53

Note: All correlation coefficients are significant at 0.001 level

Table 5 Opinion on regulation of pharmaceutical advertising

Call for regulation (alpha=0.41)	Mean	Standard deviation
Government should strengthen the control of the content of pharmaceutical advertising.	4.28	0.75
Government should limit the advertising frequency on TV for each pharmaceutical advertising	3.67	0.94
Pharmaceutical advertising should not be under government's control. (R)	1.58	0.89

note: 5=strongly agree; 1=strongly disagree

(R) Scores for this item is reversed in the compilation of the alpha coefficient

Table 6 Medical decisions when encountering health problems

Health problem	No action (%)	Take over-the-counter drugs first (%)	Consult friends with medical knowledge first (%)	Consult western doctor first (%)	Consult traditional Chinese doctor first (%)
flu	13.5	50.7	3.0	16.3	16.5
diarrhea	6.8	46.1	3.0	33.0	11.1
stomach ache	8.1	40.9	3.9	24.4	22.8
fever	6.4	35.7	4.6	41.1	12.2
constipation	20.4	35.2	4.5	12.8	27.1

Table 7 Actions to be taken for dissatisfied consumers

Action	N	%
Advise friends and relatives not to purchase	255	53.0
complain to consumer councils	105	21.8
take no action	82	17.0
complain to organizations responsible for regulating advertising	39	8.1