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CONSUMPTION OF OVER-THE-COUNTER DRUGS AND ATTITUDES TOWARD OVER-THE-COUNTER DRUG ADVERTISING: A COMPARISON BETWEEN THE UNITED STATES AND HONG KONG

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Abstract

A survey of 547 adults from the United States and Hong Kong was conducted to compare their perceptions about functions and consequences of OTC drug advertising and medical decisions when encountering health problems. Results indicate that American and Hong Kong consumers were very similar in their overall perception of functions and consequences of OTC drug advertising, but they differ greatly in consumption of OTC drugs. A large majority of American consumers relied heavily on OTC drugs for all five types of selected health problems in this study. In contrast, Hong Kong consumers took OTC drugs only for specific illness.

Introduction

Over-the-counter drugs (OTC drugs) are one of the most controversial advertising product categories around the world (Shao and Hill 1994; Fahy et al. 1995). Although the concept of OTC drugs assumes consumers have the ability to self-diagnose correctly their own health conditions (Johnson 1986), researchers and policy-makers alike are very concern about the potential misuse or abuse of OTC drugs by consumers, especially among the children and the elderly (Butter et al. 1991; Hoy 1994). OTC drugs are the third most frequently regulated advertising product category in a recent study of 15 countries (Shao and Hill 1994), just behind cigarettes and alcohol. In the United States, the proliferation of OTC drugs by the switching of prescribed drugs (Rx) to OTC drugs increases the risks of drug abuse because consumers can take a "switched" medication by themselves without professional supervision.

Although there are many sources from which consumers can obtain information about over-the-counter drugs, Lumpkin and his colleagues (1991) identified three major information sources of elderly consumers. The physician's or pharmacist's recommendation, and friend's recommendation were cited as the most important and credible sources. But equally important is the brand name recognition. Because of the existence of self-immunity or third person effect in attitudinal research (O'Donohoe 1995; Reid and Soley 1982), although these consumers did not say explicitly that advertising is an important source, brand

name recognition is indeed an implicit recognition of the influence of advertising. The brand name recognition of OTC drugs can largely be attributed to advertising to which consumers can easily be exposed and passively learn about an OTC drug brand.

To consumers who seldom consult physicians either because of budget constraints or time constraints, OTC drug advertising can play a major role in influencing the brand choice and the perceived capability of the OTC drugs in relieving their symptoms. Consumers make little effort in extending information search about OTC drugs beyond advertising because of general low consumer involvement in OTC drug purchase (Gore et al. 1994). Advertising, as a readily available source of information, can meet the informational needs of low involvement consumers. Indeed, the experiment of Perri and Nelson (1987) on consumer response to direct-to-consumer prescribed drug advertisements found that consumers recognized OTC drugs much better than prescribed drugs.

Purpose of Study

This study attempts to uncover the relationship between attitudes toward OTC drug advertising and the consumption of OTC drugs from a cross-national perspective. The rapid international market expansion of pharmaceutical companies, such as Johnson & Johnson, calls for more studies of international markets for OTC drugs. The importance of OTC drugs as an advertising product category in many countries also mandates a systematic investigation of the consumers' attitudes toward OTC drug advertising and whether such attitudes influence their usage of OTC drugs. In the United States, OTC drugs are one of the top ten advertising categories. Their sales volume is expected to be \$17.6 billion in 1996. Increasing competition by the influx of switch drugs into the OTC market will further stimulate sales volume to \$19 billion by the year 2000 (*Advertising Age* 1990).

Despite the importance of OTC drugs as an advertising product category and the possible negative physical and social consequences, few have examined the actual consumers' usage of OTC drugs in specific applications. This study can provide empirical evidence of the extent of OTC drug usage across countries. If a positive relationship is found between attitudes toward OTC drug advertising

and OTC drug consumption, policy-makers and marketers have to take appropriate measures to guide consumers the proper use of OTC drugs. In this study, Hong Kong and the United States were chosen for comparison because of they differ in health care system and medical practice, but are similar in that both have an open market system and a similar level of economic development.

Health Care Systems in the United States and Hong Kong

The United States is an exemplary example of a private health care system. Government only subsidizes the poor or the elderly through Medicaid and Medicare. Most people have to buy health insurance to pay for the high cost of health care. Hong Kong is an example of a dual system that offers both public and private health care services. In Hong Kong, every individual, regardless of age or income level, has the right to public health care facilities such as government hospitals and clinics. The 80 government and public out-patient clinics provide inexpensive medical consultation services to the general public. For example, treatment at a government clinic costs HK\$34 (equivalent to US\$4.50) a visit, which includes medicine as well as X-ray examinations, laboratory tests, etc. If a patient requires a specialist's opinion, he or she will be referred to a specialist for consultation, which costs him or her HK\$40 (equivalent to US\$5). Although there is no restriction on the use of the service, consumers using public health care services have to queue at the clinics for a few hours before they can receive the treatment. Patients have no choice on which doctor to consult and follow-up care is minimal. In 1994, the total number of attendance at government out-patient clinics were about 15.7 million (more than twice of Hong Kong's population). Charity organizations such as the Tung Wah Hospital Group also provide low-cost health care services. Private health care is an alternative for consumers who can afford better service and demand for choice.

The medical practice in the United States is predominantly the Western medicine in which physicians are required to have a medical college degree to practice medicine. In Hong Kong, Western medicine practice coexists with Chinese herbal medicine. Because of the Chinese cultural heritage, consumers in Hong Kong can choose between the two practices for treatment. Typically, older Chinese consumers in Hong Kong prefer Chinese herbal medicine because the cost is generally lower than western medicine and the patient's physical reaction to herbal medicine is usually much milder.

Under two different health care systems, the two markets also differ in the regulations of pharmaceutical advertising. In the United States, prescribed drug advertising is allowed and is regulated by the Food and Drug Administration. Over-the-counter drug advertising is regu-

lated by the Federal Trade Commission who also has jurisdiction of advertising for other commercial products. Currently, the major provisions in the regulations of OTC drugs in the U.S. are the labeling of the drugs and possible side effects. Under the Federal Food, Drug and Cosmetic Act, U.S. OTC drug advertisers are prohibited from making unsubstantiated claims (Reichertz 1995).

In Hong Kong, prescribed drugs are not allowed to advertise. All regulations on advertising (including OTC drug advertising) are enforced by the Broadcasting Authority. Under the Undesirable Medical Advertising Ordinance, no comparative advertising is allowed and OTC drug advertisements cannot mislead consumers by omitting essential facts (Broadcasting Authority 1993).

Literature Review

Research on Pharmaceutical Advertising

Research on pharmaceutical advertising has focused on three areas: 1) identifying the effect of OTC drug advertising on specific consumer segments such as the children and elderly consumers (Butter et al. 1991; Lumpkin et al. 1991), 2) the labeling of prescribed drugs and OTC drugs (Bachrach 1990; Hoy 1994; Johnson 1986), and 3) direct-to-consumer prescribed drug (Alperstein and Peyrot 1993; Hoy 1994; James and Hensel 1995; Perri and Nelson Jr. 1987). Very little recent research has been published on over-the-counter drug advertising.

Nevertheless, the paucity of such research should not undermine the importance of over-the-counter-drug advertising, especially when the category is still growing and the trend toward self-medication is increasing among consumers. The convenience in purchasing OTC drugs without professional consultation may create many undesirable consequences to consumers. Apart from drug abuse, reliance on OTC drugs may cause patients to underestimate the seriousness of their illness, lower their alertness to potential dangerous illness, delay necessary physician consultation, and overlook the side-effects of taking the OTC drugs. Researchers have not explored the relationship between attitudes toward over-the-counter drug advertising and the consumption of OTC drugs. As Hoy (1994) pointed out, more outcome studies are necessary to justify for further regulation of OTC drug advertising.

Consumers' Attitudes toward Advertising

Studies on consumers' attitudes toward advertising found that these attitudes are product-specific. For example, Mittal (1994), in his study of 300 consumer panel members, found that consumers liked the advertising of some products such as anti-drunk driving and sale advertisements of supermarkets, but hated advertising for specific products such as political advertising, beer, feminine hygiene and cars. In another survey conducted by *Adver-*

tising Age (1991), cold remedies, one of the OTC drugs, were on the hated product list of the consumers.

In her review of attitudes toward advertising research in the United States and the United Kingdom, O'Donohoe (1995) found that most of them are descriptive in nature. The structure of consumers' attitudes toward advertising is proposed to consist of two levels: 1) personal experience of advertising, 2) beliefs about the social consequences of advertising. Personal experience refers to advertising's entertainment and information value to consumers. Such experience varies by products and media. For example, users of a product category are more likely to find the advertising relevant and more enjoyable. In essence, these two levels are very similar to the instrumental and institutional dimensions of attitudes toward advertising discussed by Sandage and Leckenby (1980).

Research Methodology

This study explores the United States and Hong Kong consumers' attitudes toward OTC drug advertising; and whether these attitudes are related to their medical decisions in encountering various health problems. The study was conducted using a structured questionnaire in English for the U.S. sample and in Chinese for the Hong Kong sample. The questionnaire was originally written in Chinese and translated to English by the second author. The questions were pre-tested to equivalent samples to ensure the appropriateness of wording.

In light of the exploratory nature of this study and the possible perceived privacy on health care problems, a non-random door-to-door sampling method was used. Seventy students at a public university in mid-western United States and twenty-nine students at a public university in Hong Kong volunteered to distribute the questionnaires to non-students over the age of 18. Quota was set on gender. They could either conduct personal interviews or deliver the questionnaire to the appropriate target for self-administration. Data were collected during the period November 11 to 25 1995 in Hong Kong; and November 23 to November 28 during the Thanksgiving holiday in the United States when students went back to their home towns to conduct the study.

The questionnaire started with four questions on overall attitudes toward television advertising and OTC drug advertising, followed by statements on functions and perceived consequences of OTC drug advertising to tap respondents' opinions on regulating OTC drug advertising. Most of these statements were used in Mittal's (1994) study. Respondents were asked to rate these statements on a 5-point Likert scale (5=strongly agree, 1=strongly disagree). Then they were asked to indicate their choice of action when encountering five common health problems: fever, diarrhea, flu, stomach ache and constipation. The actions taken ranged from no action, taking OTC drugs, to

consulting Western/traditional doctors or friends with medical knowledge. The questionnaire closed with usual demographics questions.

A total of 547 responses were collected, among which 212 were from the States and 335 were from Hong Kong. Although most of U.S. respondents resided in Ohio, residents from nine states were represented (Ohio, Michigan, Georgia, Illinois, Indiana, Massachusetts, New York, New Jersey, and Maryland). Most of them live in medium-size cities and suburbs, only 20 percent live in big cities such as Cleveland. The demographic profile of the sample is shown in Table 1. Close to forty percent of the U.S. sample were aged between 40 and 49, and over three quarters had college or above education. Nearly half of the sample considered themselves quite conservative. For the Hong Kong sample, forty-five percent were aged under 39 and nearly twenty percent had college or above education. Close to forty percent were full-time housewives or retired or unemployed. Fifty-one percent considered themselves liberal. The U.S. sample were older, more educated and contained a higher proportion of high income group than the Hong Kong sample.

Results

Overall Perceptions of Advertising and OTC Drug advertising

The current study found that both the U.S. and Hong Kong consumers had positive overall attitudes toward television advertising in general and OTC drug advertising (Table 2). All the mean scores of items in the attitude scales were between three and four on a five-point scale on liking and evaluation of these ads. Though consumers from the United States and Hong Kong were similar in their overall attitudes toward advertising in general, American respondents held a more favorable attitude toward OTC drug advertising than their Hong Kong counterparts. The overall perception of OTC drug advertising was less favorable than the overall perception of advertising in general for both samples.

OTC Drug Consumption When Encountering Health Problems

The medical decisions that consumers took when encountering health problems are summarized in Table 3. Results of chi-square tests indicated that American and Hong Kong consumers acted very differently. A large majority of American consumers relied heavily on OTC drugs. Over sixty percent of the respondents reported taking OTC drugs as their immediate action when faced with the five selected health problems. This tendency toward self-medication was independent of the type of health problem the respondent faced. In contrast, Hong Kong respondents took OTC drugs for some of the common health problems only. They were more likely to consult

doctors or people with medical knowledge when they suffered from fever, but would take OTC drugs when suffered from diarrhea, flu, and stomach ache. Most of them took no action when suffered from constipation.

Perceived Functions and Consequences of OTC Drug Advertising

The mean scores and standard deviations of consumers' perceived functions and consequences of OTC drug advertising are summarized in Table 4. Both American and Hong Kong consumers were well aware of advertising's basic function in offering market information about goods and services. A majority of the sample said OTC drug advertising keeps them update about new medicine as well as provides information about the function of individual brands. They also acknowledged that OTC drug advertising is an important source of information. Hong Kong respondents agreed slightly more than American respondents on the role of OTC drug advertising in providing information about function of specific brands ($t = 2.36, p < 0.05$).

Despite their acknowledgment of the knowledge function of OTC drug advertising, consumers are rather neutral about its function in increasing their buying confidence. American consumers were skeptical about the trustworthiness of OTC drug advertising. They were more likely to disagree to the statement that more frequently advertised brands are more trustworthy. A higher proportion of Hong Kong respondents agreed that OTC drug advertising helped them to get the best buy. There were roughly equal numbers of people who agreed and disagreed on whether consumers would have more difficulty making purchase decisions if there was no OTC drug advertising. The entertainment function of OTC drug advertising was more readily recognized by American respondents. More American respondents found some of the OTC drug commercials enjoyable and worth-remembering than Hong Kong respondents ($t = 6.70, p < 0.0001$).

Respondents from the States and Hong Kong were equally aware of the economic cost of OTC drug advertising on consumers. They generally believed that OTC drug advertising increased the cost of products and that some advertising money should be reserved for product improvements. Nevertheless, respondents did not favor the complete elimination of OTC drug advertising. American consumers opposed more strongly to the exclusion of all OTC drug advertising than Hong Kong consumers. A higher proportion of Hong Kong consumers favored the use of advertising budget for product improvement ($t = 3.51, p < 0.005$).

American and Hong Kong consumers held similar opinions on the economic contribution of OTC drug advertising. They both agreed that OTC drug advertising facilitates competition among brands. Nevertheless, American respondents were less likely to agree to the statement that

OTC drug advertising supports free programming and placed a stronger doubt on the statement that OTC drug advertising improves the standard of public health.

Respondents from both the States and Hong Kong disagreed that OTC drug advertising manipulated people's medical decision. American and Hong Kong consumers were equally likely to disagree that OTC drug advertising encourages people to buy what they do not need. More American consumers disagreed that OTC drug advertising encourages people to try new medicine ($t = 2.20, p < 0.05$). Both American and Hong Kong respondents strongly believed that most OTC drug advertising contains similar exaggerated claims that are confusing to consumers. However, American consumers were more confident in themselves in distinguishing which brands to trust than Hong Kong consumers ($t = 8.18, p < 0.0001$).

Prediction analysis

Demographic characteristics, value orientation, country of study, and overall attitudes toward advertising were predicted to influence respondents' overall attitude toward OTC drug advertising and actions taken for solving health problems. For the prediction of overall attitude toward OTC drug advertising, the R^2 value was 0.27. This indicates that 27% of the total variation of the overall attitude toward OTC drug advertising could be explained by the overall attitude toward advertising and value-orientation. Only two out of eight predictors were significant. The most significant predictor of a positive attitude toward OTC drug advertising is a favorable attitude toward advertising in general. Value orientation is the second strongest predictor. Conservative consumers held more favorable attitudes toward OTC drug advertising than liberal consumers in both places. All demographic variables were found insignificant in the regression analysis.

The choice of medical decision when encountering the five selected health problems were averaged to form a three-point scale. A higher score means a higher tendency to consult medical profession personnel and a lower score means a higher tendency to take no treatment. The R^2 value of the regression model was 0.02. This indicates that only 2 percent of the total variation of the medical decision could be explained by overall attitude toward OTC drug advertising and demographics. Only one out of the eight predictive variables were significant at 0.05 level. Conservative respondents were more likely to take no action when encountering with health problems.

Conclusions

This study reveals the use of OTC drugs and attitudes toward OTC drug advertising in two different cultures and medical systems. Both American and Hong Kong consumers held positive attitudes toward advertising in general, and to a lesser extent, OTC drug advertising. This

contradicts to many research findings that consistently reported for the dislike of television advertising in the United States such as the surveys conducted by Mittal (1994). May be our broader operationalization of advertising attitudes and ordering the positive and negative items in jumble allow a more positive response to advertising in general.

Even though the demographic composition of the U.S. and Hong Kong sample is quite different from each other, it seems to have little effect on the findings of this study because none of the demographic variables can predict attitudes towards OTC drug advertising and OTC drug usage behavior. Both American and Hong Kong consumers were well aware of the knowledge function of OTC drug advertising. Yet OTC drug advertising in the States and in Hong Kong has not been very successful in enhancing buying confidence. American respondents were more likely to appreciate the entertainment value of OTC drug advertising, but they did not agree that advertising increases their buying confidence. Hong Kong respondents were neutral about the entertainment value and the buying confidence function of OTC drug advertising. This suggests that consumers in both samples are very rational and mature. On the one hand, they utilized OTC drug advertising to gain information about new brands and their features. On the other hand, they held a healthy skeptical attitude to the advertising claims and they did not put more trust on frequently advertised brands.

The consequences of OTC drug advertising, the perceived economic benefits, such as free television programming and enhancement of competition, were marginally

received by respondents. The major criticisms were its economic cost and perceived confusing messages. To our surprise, the common criticism about advertising's manipulation of consumers was not strongly supported. This indicates that respondents were rather pragmatic. Their concerns were about the economic costs of advertising to them. They realized the necessity of advertising in encouraging competition in a free market environment.

Overall speaking, American and Hong Kong consumers were quite similar in their overall perception of functions and consequences of OTC drug advertising. For sixteen out of nineteen statements, American and Hong Kong consumers were found in same direction. They only differed in their degree of agreement or disagreement to the selected statements, but they acted very differently when encountering health problems.

Self-medication was extremely popular in the United States. High tendency to take OTC drugs was found in a variety of health problems. This may be due to a lack of difference in their perceived seriousness among the five symptoms tested in this study. In Hong Kong, taking of OTC drugs was illness-specific. Some illnesses, such as fever, are considered as more serious and warrant professional attention or actions than others, such as constipation. When marketing overseas, OTC drug marketers should selectively market products that consumers would take OTC drugs as the immediate action in that country. For example, marketers should avoid selling OTC constipation remedies in Hong Kong because constipation is a health problem that people would ignore and take no action.

TABLE 1

Sample profile

Demographic	US (N=212)		HK (N=335)	
	No.	%	No.	%
Gender				
Males	94	44	163	49
Females	118	56	172	51
Age				
under 29	51	24	38	11
30-39	34	16	114	34
40-49	81	38	64	19
50-59	40	19	62	19
60+	6	3	57	17
Education				
Primary or below	1	1	90	27
Secondary or high School	49	23	186	56
College or university	161	76	59	18
Occupation				
Professionals and sub-professionals	31	15	44	13
Managers and executives	74	35	38	11
Clerical and service workers	59	28	100	30
Production and construction workers	11	5	24	7
Housewives/retired/unemployed	37	18	129	39
Annual personal income (HK/US)				
None	12	6	110	34
US\$9,200 or below/under US\$10,000	13	7	25	8
US\$9,200-12,999/US\$10,000-29,999	63	31	164	51
US\$13,000+/US\$30,000 or more	113	56	23	7
Value Orientation				
very liberal	25	12	16	5
quite liberal	70	33	153	46
quite conservative	102	48	147	44
very conservative	14	7	18	5

TABLE 2

Attitudes toward Advertising in General and OTC drug advertising

Item	Mean of US ^a	Mean of HK ^a	t-value	Sign. level ^b
Overall, is advertising a good thing or a bad thing?	3.61	3.70	1.13	N.S.
Overall, do you like or hate advertising?	3.52	3.52	0.06	N.S.
Overall, is OTC drug advertising a good thing or a bad thing?	3.39	3.23	2.08	<0.05
Overall, do you like or hate OTC drug advertising?	3.21	3.11	1.52	N.S.

^a The greater the mean value, the more favorable attitude toward advertising

^b N.S.= not significant at 0.05 level

TABLE 3

Health Problems and Medical Decisions

Health problem		No action	Take OTC drug	Consult doctors/ friends with medical knowledge	chi-square value	Sign. Level
Fever	US(%)	5	65	30	31.1	<0.0001
	HK(%)	7	43	50		
Diarrhea	US(%)	13	70	17	13.6	<0.001
	HK(%)	13	57	30		
Flu	US(%)	9	61	29	3.3	N.S.
	HK(%)	11	53	36		
Stomach Ache	US(%)	18	65	17	5.6	N.S.
	HK(%)	19	56	25		
Constipation	US(%)	20	61	19	44.8	<0.0001
	HK(%)	40	32	28		

TABLE 4

Perceptions about OTC Drug Advertising^{a,c}

Functions and consequences	Mean of US	Mean of HK	t-test value	Sign. level ^b
Market information	(0.71)	(0.54)		
OTC drug advertising is an important source of information on medicine.	3.17	3.34	2.13	N.S.
OTC drug advertising makes me know which brand has the function I need.	3.36	3.55	2.36	<0.05
OTC drug advertising let me know what new OTC drugs are available in the market.	3.81	3.75	0.95	N.S.
Buying confidence	(0.50)	(0.60)		
Those OTC drugs that advertise frequently are more trustworthy than those that do not.	2.28	2.84	4.48	<0.0001
OTC drug advertising helps consumers to select the best brand.	2.92	3.11	2.15	<0.05
If there is no OTC drug advertising, to decide which one to buy will be difficult.	3.06	3.14	0.90	N.S.
Entertainment value	(0.46)	(0.62)		
Sometimes I'll retrospect on some of the OTC drug advertising.	2.98	2.77	2.56	<0.05
I appreciate some of the OTC drug advertising.	3.68	3.20	6.70	<0.0001
Economic costs	(0.32)	(0.36)		
OTC drug advertising increases the cost of the product	3.80	3.84	0.67	N.S.
If the spending on OTC drug advertising is spent on improving the product, the money spent will be much more worthwhile.	3.46	3.74	3.51	<0.005
It is more beneficial to consumers if there is no OTC drug advertising.	2.30	2.63	5.00	<0.0001

^a Figures in bracket indicate the Cronbach alpha coefficients of internal consistency.

^b N.S.= not significant at 0.05 level

^c Items were in jumbled order in the questionnaire.

Table 4 Difference in perceptions about OTC drug advertising (Con'd)

Functions and consequences	Mean of US	Mean of HK	t-value	Sign. level
Economic benefits	(0.53)	(0.49)		
OTC drug advertising improves the standard of public health.	2.88	2.70	2.19	<0.05
OTC drug advertising facilitates healthy competition between products, which brings more benefits to consumers.	3.39	3.27	1.56	N.S.
We need the advertising revenue from OTC drugs to subsidize the production cost of mass media content.	2.71	3.01	4.01	<0.0001
Manipulation	(0.72)	(0.40)		
OTC drug advertising encourages people to buy unnecessary medicine	2.98	2.83	1.73	N.S.
OTC drug advertising encourages people to recklessly try new medicine.	2.71	2.89	2.20	<0.05
Evaluation	(0.31)	(0.50)		
Most OTC drug advertising exaggerates the product's therapeutic functions.	3.48	3.75	3.54	<0.0005
Most OTC drug advertisements are very similar and people can easily get confused.	3.55	3.58	0.49	N.S.
OTC drug advertising makes me confused. I don't know which one to trust.	2.75	3.45	8.18	<0.0001

^a Figures in bracket indicate the Cronbach alpha coefficients of inter-item reliability.

^b N.S.= not significant at 0.05 level

^c Items were in jumbled order in the questionnaire.

References

1. *Advertising Age* (1990), "New OTC Drugs to Flood Market," July 9, 3, 41.
2. *Advertising Age* (1991), "TV Ads Gaining Favor Worldwide," November 25, 28.
3. Alperstein, Neil M. and Mark Peyrot (1993), "Consumer Awareness of Prescription Drug Advertising," *Journal of Advertising Research*, 33 (4), 50-56.
4. Bachrach, Eve E. (1990), "Current Developments in Commercial Free Speech and Government Regulation of Labeling and Advertising of Over-the-Counter Drugs," *Food Drug Cosmetic Law Journal*, 45, 224-234.
5. Broadcasting Authority (1993), *Television Code of Practice on Advertising Standards*. Hong Kong Broadcasting Authority.
6. Butter, E. J., K. B. Weikel, U. Otto and K. P. Wright (1991), "TV Advertising of OTC Medicine and Its Effects on Child Viewers," *Psychology and Marketing*, 8 (2), 117-128.
7. Fahy, John, Denise Smart, William Pride, and O. C. Ferrell (1995), "Advertising Sensitive Products," *International Journal of Advertising*, 14, 231-243.
8. Gore, Prasanna, Suresh Madhavan, Gordon McClung, and David Riley (1994), "Consumer Involvement in Non-Prescription Medicine Purchase Decisions," *Journal of Health Care Marketing*, 14(2), 16-23.
9. Hoy, Mariea Grubbs (1994), "Switch Drugs Vis-a-Vis Rx and OTC: Policy, Marketing, and Research Considerations," *Journal of Public Policy and Marketing* 13(1), 85-95.
10. James, William L. and Paul J. Hensel (1995), "Direct to Consumer Advertising of Prescription Drugs," *Journal of Health Care Marketing*, 15(1), 35-41.
11. Johnson, Daniel R. (1986), "Policy Development Affecting Over-the-Counter Drugs," *Food Drug Cosmetic Law Journal*, 41, 257-267.
12. Lumpkin, James R., Sheila J. Lowrey, H. David Strutton, and Christina L. Kouzi (1991), "Catalysts for OTC Drug Communication Strategies: Perception of Information Source Characteristics by the Elderly," *Health Marketing Quarterly*, 8(3/4), 155-179.
13. Mittal, Banwari (1994), "Public Assessment of TV Advertising: Faint Praise and Harsh Criticism," *Journal of Advertising Research*, (January/February), 35-53.
14. O'Donohoe, Stephanie (1995), "Attitudes to Advertising: A Review of British and American Research," *International Journal of Advertising*, 14, 245-261.
15. Perri, Matthew and Arthur A. Nelson, Jr. (1987), "An Exploratory Analysis of Consumer Recognition of Direct-to-Consumer Advertising of Prescription Medications," *Journal of Health Care Marketing*, 7 (1), 9-17.

16. Reichertz, Peter S. "Legal Restrictions on the Advertising and Promotion of Pharmaceutical and Biological Products on the Internet and Other Emerging Technologies," Speech delivered at the IBC Conference on Marketing Pharmaceutical and Biological Products on the Internet, December 8 1995, Washington D.C.
17. Sandage, Charles H. and John D. Leckenby (1980), "Student Attitudes toward Advertising: Institution vs. Instrument," *Journal of Advertising*, 9(2), 29-32.
18. Shao, Alan T. and John S. Hill (1994), "Global Television Advertising Restrictions: The Case of Socially Sensitive Products," *International Journal of Advertising*, 13, 347-366.