“Rational and emotional appeals in advertising of prescription medicines: study of a slimming drug in Brazil”

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Rational and emotional appeals in advertising of prescription medicines: study of a slimming drug in Brazil

Abstract

The Direct-to-Consumer (DTC) advertising of medicines encourages people to ask physicians about medicines and treatments that require medical prescription. Advertising models recommend matching the appeals (rational and/or emotional) to the consumer's attitude toward the product (cognitive and/or affective). Such recommendation generates controversies in the DTC advertising context. Emotional appeals might always appear to be inadequate in this type of advertising. Adequate or not, medicine advertising exists and within the scope of this article our discussion will focus on the forms of persuasion of drug advertisements and consumer attitudes towards them. Because there is no empiric evidence about Brazilian consumer's perspective, a descriptive research was undertaken with a sample of women. The objective was to evaluate: i) components of attitude towards medicines; ii) attitude and behavioral intentions towards DTC ads (rational and emotional). The study measured five constructs: i) cognitive component of attitude towards slimming drugs; ii) affective component of attitude towards slimming drugs; iii) general attitude towards slimming drugs; iv) consumer attitude towards slimming drug ads (one with predominantly rational appeal and another with predominantly emotional appeal); and v) behavioral intention as a consequence of exposure to ads. A prescription weight-loss medicine was chosen. Results revealed an attitude predominantly cognitive toward the product and an attitude and a behavioral intention more favorable toward the rational ad. Negative cognition about the product was identified, restricting the persuasive power of emotional appeals.

Keywords: advertising, appeals, attitude, consumer.

Introduction

Pharmaceutical companies have been increasingly using Direct-to-Consumer (DTC) advertising to encourage consumers to ask doctors about certain prescription drugs in countries such as the United States and New Zealand – where there are no restrictions on medication advertising – and treatments in countries such as Brazil – where DTC advertising is not allowed to include the product's name. In the United States, the use of emotional appeals in DTC advertising is intense (Main et al., 2004) and is a cause for concern (Menon et al., 2004). In Brazil, DTC advertising is also loaded with emotional appeals (Huertas & Urdan, 2004).

In order to increase persuasiveness, some advertising models recommend matching appeals (rational and/or emotional) with consumers' attitudes toward the product (cognitive and/or affective). This recommendation is of disputable appropriateness in the case of potentially harmful products such as medicines. Messages intended to appeal to the consumers' feelings and emotions are indisputably valid for several product classes. But when it comes to medicinal drugs, some critics of DTC advertising understand that the use of emotional appeals is inappropriate, as they differ from other products and, therefore, should not be promoted in the same way (Findlay, 2001). Rather than make a well informed choice among the treatment options with the doctor, patients seem to be demanding and often getting brands of medicines which use emotional appeals (happiness, fun) in advertising (Mintzes, 2002). It seems more likely consumers may be influenced by emotions rather than rational appeals (information) (Main et al., 2004). For example, in the United States, the pharmaceutical company Pfizer emphasizes the emotional benefit (happiness) to launch its drug Viagra (Clow & Baack, 2002). Then, the excessive consumption of the drug without a doctor prescription led Pfizer to adopt a more informative approach. But without forgetting the emotional appeal. According to a more radical view about medicines advertising, some understand that any form of drug promotion is completely inappropriate (Nascimento, 2005). For example, in Brazil, beyond restrictions to prescription medicines advertising, promotion of erectile dysfunction drugs, like Viagra, is forbidden (Propaganda, 2003). Adequate or not, medicine advertising exists and within whether the scope of this article, our discussion will focus on the forms of persuasion of drug advertisements and consumer attitudes towards them.

1. Theoretical framework

In order to be persuasive, the advertiser must know if an advertisement's appeals (whether rational or emotional) should or should not coincide with the consumer's (whether cognitive or affective) attitudes towards the advertised product (Dubé et al., 2003). Rationally-appealing adverts motivate consumers by means of logical information and arguments (Woochang & Franke, 1999). Emotional appeals attempt to evoke effective responses (Main et al., 2004). On the other hand, attitude towards products consists in assessments that may derive

from qualitatively different types of information (Blackwell et al., 2005), forming the cognitive and affective components (Bagozzi et al., 2002). The cognitive element concerns knowledge and thinking, while the affective aspects concern emotions and feelings, in both cases toward the object of the attitude (Shimp, 2002).

Some advertising models, such as the Elaboration Likelihood (Petty & Cacioppo, 1986), Foote, Cone & Belding (Vaughn, 1986), Rossiter-Percy (Rossiter, 1987; Rossiter et al., 1991), and Affect-Reason-Involvement (Buck et al., 2004) suggest matching appeals with attitude toward the product. That is, using advertising with rational appeals for products where the consumer's attitude is predominantly cognitive, and emotional appeals for products towards which attitude is predominantly affective.

From this perspective, knowing the consumer's attitude toward medicinal drugs is crucial to assessing the persuasiveness of rational and emotional appeals in DTC advertising. This leads to the first part of the empirical research objective: assessing the cognitive and affective components of consumers' attitudes towards medicinal drugs.

One of the arguments used by the critics of DTC advertising is that prescription drugs should only be prescribed when a doctor believes them to be the best way to reduce a patient's suffering (Findlay, 2001). Now, instead of making an informed choice among treatment options in consultation with their doctors, consumers appear to be demanding, and often receiving, prescription drug brands whose advertising is based on emotional appeals (Mintzes, 2002; Wolfe, 2002). Consumers may not understand the nature of DTC advertising, and are more likely to be misled or influenced by non-rational arguments (Main et al., 2004).

In Brazil, DTC drug advertising also tends to intensify (Sonego, 2005 Fev 21). It has been blamed for the potentially harmful consequences of self-prescription (won-volition consumption of prescription drugs) (Morais, 2003 Fev). For Morais, Brazil's fifth place in the world rank of medicinal drugs consumption, reflects serious problems that are a matter of debate in developed countries: the prescription drug abusive use as a public health threat and the billion-dollar interests of pharmaceutical industry.

The Brazilian government's concern can be perceived in steps such as the 2003 ban on erectile dysfunction drugs advertising and the constant oversight of legal compliance in promotional pieces on the part of the National Sanitary Inspection Agency ("*Agência Nacional de Vigilância Sanitária*" – ANVISA) (Jimenez, 2004 Abr 21). Another initiative that reflects a concern with excessive medical drugs consumption in Brazil is the presence of the Brazilian Medicinal Drug Information System ("*Sistema Brasileiro de Informação sobre Medicamentos*" – SISMED), coordinated by the Brazilian Center for Medicinal Drug Information ("*Centro Brasileiro de Informação sobre Medicamentos*" – CEBRIM) of the Federal Pharmacy Council ("*Conselho Federal de Farmácia*"). SISMED is made up of Medicinal Drug Information Centers where the general public and health professionals have access to information on the rational use of medicinal drugs.

Generally speaking, medicinal drug advertising is controversial, as illustrated by works such as Barros (Barros, 1995) and Pizzol (Pizzol et al., 1998), and articles published in the bulletins of the Brazilian Medicinal Drug Advertising Society ("*Sociedade Brasileira de Propaganda de Medicamentos*" – SOBRAVIME). On the specific topic of DTC drug advertising in Brazil, the works of Heineck (Heineck et al., 1998), Nascimento (Nascimento, 2005) and Huertas & Urdan (Huertas & Urdan, 2004) are particularly noteworthy. The latter provides evidence of increased use of emotional appeal in this kind of advertising.

Worldwide, the growing use of emotional appeal in DTC advertising is subject to constant criticism, which suggests its replacement with rational appeal (Main et al., 2004). Equipping consumers with information enables them to choose the best solution available for a health problem (Meek, 2001 Nov). Furthermore, increased consumer awareness may lead doctors to have richer discussions with patients, helping them to explain whether or not a certain treatment is considered necessary (Menon et al., 2004). In this sense, there are those in Brazil who understand that the fundamental issue is not whether or not consumers should be given information on alternative treatments, but whether the promotion of medicinal drugs – whose main purpose is to maintain and expand sales – is the appropriate means to convey the information consumers need (Barros, 2004). Some argue for a total ban on medicinal drug advertising as an instrument to protect society against asymmetric economic power (Nascimento, 2005). Whether it is appropriate or not, DTC medicinal drug advertising exists and the way in which consumers are influenced by its appeal is yet unclear.

In Brazil, the claims of specialists against and in favor of DTC advertising and its rational and emotional appeals lack empirical evidence from the consumer perspective. Are people more favorable to prescription drug ads with rational (emotional) appeals and, therefore, more inclined to take action?

This question leads to the second part of the empirical research objective: to assess attitude and behavioral intention towards DTC ads, one with predominantly rational appeal and another with predominantly emotional appeal.

2. Empirical research method

The empirical research method consisted of a descriptive survey with individuals in the city of São Paulo in April 2006. Life-improving medicinal drugs that fight conditions from depression to obesity have helped the pharmaceutical industry grow their business. In particular, the abundance of slimming-drug advertisements led to the choice of this product type for the empirical study.

Sample – The target population included women over the age of 18 with residence in the city of São Paulo. The sampling frame was Ibirapuera Park. The sampling technique was intentional by judgment and quota. Women who had and had not ever taken slimming drugs were considered (50 percent each). Sample size was 320 individuals, defined based on the resources available. Two interviewers were trained to approach potential participants and help respondents fill out forms.

Measurement – The measurement process involved three constructs:

- Attitude towards slimming drugs – Measurement of the attitude towards slimming drugs focused on its cognitive and affective components (Bagozzi et al., 2002). We used as base the semantic differential scale provided by Crites (Crites et al., 1994), which includes three sub-scales: cognitive, affective and general. Items form bipolar continuums anchored in pairs of words represented by numbers from 7 (positive) to 1 (negative). Scale items were translated into Portuguese from English. New indicators were added in light of consumer's needs in pharmaceutical markets (Smith et al., 2002). This led to the final scale: i) Cognitive Component – Useful/Useless, Reliable/Doubtful, Beneficial/ Harmful, Healthy/Unhealthy, Necessary/Unnecessary, Excellent/Terrible, Convenient/Inconvenient, Effective/Ineffective; ii) Affective Component – Excited/Unexcited, Motivated/Unmotivated, Con-tented/Discontented, Confident/ Mistrustful, Hopeful/Hopeless, Acknowledged/Ignored; iii) General Attitude – Desirable/ Undesirable, Favorable/Unfavorable.
- Attitude towards ads – Measurement of the attitude toward ads focused on a summary judgment of the object (ads) on a dimension from positive to negative (Petty et al., 1997). The first step was selecting the ads. Among slimming drugs there is Xenical, an anti-obesity agent whose marketing communications are not restricted to physicians. In September 2004, Roche launched a campaign targeted at consumers across Latin America, with the motto: "What would you do with a few pounds less?" (Roche, 2004). The Xenical TV advertisement shows five beautiful women who want to lose weight asking themselves what they would do with a few pounds less. They provide answers such as "make amends with the mirror" and "do a lingerie catwalk". The piece concludes with the information that there is a way to eliminate 30 percent of the fat of ingested foods and recommends that people interested in losing weight should see a doctor. The purpose of the ad is to show how weight-loss boosts self-esteem, with a predominantly emotional appeal. To measure the attitudes of consumers towards predominantly emotional ads, one of the magazine advertisements of the campaign described above, was chosen. Additionally, we prepared the predominantly rational ad based on information from the Xenical Website for Brazil (www.xenicare.com.br). Following Brazilian legislation about advertising of prescription medicines, for both ads the product name did not appear.

  Measurement of the constructs of the attitude toward the advertisement was based on Henthorne & LaTour's attitude toward advertisement scale (Henthorne & LaTour, 1993), whose indicators are as follows: Good/Bad, Interesting/Uninteresting, Informative/Uninformative, Easily understood/ Hard to understand. Indicators identified in a pre-test with the advertisements under appraisal were added to this scale. The following indicators were included: Useful/Useless, Convincing/Unconvincing, Entertaining/Boring, Arouses curiosity/Does not arouse curiosity, Captivating/Dull, Easily remembered/ Hard to remember, Reliable/Unreliable, and Different/Ordinary.
- Behavioral intention – Studies of behavioral intention towards medicine advertisements have become frequent in recent years in the United States, New Zealand and Australia, but the items used are a poor reflection of Brazilian reality. In Brazil, prescription medicines could be bought without showing the physician's prescription. Because of this, behavioral intentions of Brazilian consumers couldn't be evaluated using exactly the same indicators employed in previous studies. Then, some indicators previous-

ly used were translated and others were added. The items used were: to question a physician about the drug, to ask a physician to prescribe the drug, to inquire about the drug in a drugstore, to buy the drug in a drugstore, to browse the site indicated in the ad to obtain more information, and to call a toll free telephone number indicated in the ad to obtain more information. Utilizing this scale, respondents indicated the likelihood of performing these actions represented by numbers 7 (definitely yes) to 1 (definitely no), with intermediate degrees between the two extremes.

Having defined the scales, we compiled a three-part questionnaire. The first question was intended to distinguish between respondents who had and who had not taken slimming drugs. Next with slimming drug category in mind, respondents moved on to the first part of the questionnaire, which contained the batteries of affective component of attitude, cognitive component of attitude and general attitude sub-scale questions. In the first battery, concerned with the affective component sub-scale, respondents were asked to think of a slimming drug and mark the position that best described their feelings about this kind of drug. The chosen statement was: about slimming drugs, I feel... In the second battery, containing the cognitive component of attitude sub-scale, respondents were asked to mark the position that best described the attributes or characteristics of this kind of drug. The statement was: slimming drugs are... In the third battery, dedicated to the general attitude sub-scale, respondents were asked to mark their judgment of sliming drugs in general. The statement was: generally speaking, slimming drug is...

The second part of the questionnaire contained four batteries of questions. Respondents were asked to see both (rational and emotional) ads for a few minutes and then answer the questions, beginning with either one. The first battery concerned the attitude towards the first ad and the second battery concerned behavioral intention. The third and fourth batteries had the same content, but in connection with the second ad. Finally, respondents were asked about their relative weight, with the following alternatives: below ideal weight, at ideal weight, very little over ideal weight, a little over ideal weight, over ideal weight, far over ideal weight.

Analysis – The variables were measured on Likert scales, which, strictly speaking, are ordinal only. But some authors endorse treating such scales as interval scales (Malhotra, 2006). Prenovost brings up the importance of this issue, because Likert scales are prevalent in behavioral and social science research (Prenovost, 1999). He regrets that ordinal variables are so often used for the purposes of parametric analysis. Here, the data in the Likert scales are assumed to be of a purely ordinal nature. Scales such as these allow hypothesis-testing with non-parametric statistical tests, but these were not run because a non-probabilistic sample such as ours does not permit generalization.

Non-parametric statistics include association metrics in addition to tests. Association metrics include the Spearman's rank correlation coefficient (r_s) – a measure of association between two variables. The effectiveness of Spearman's coefficient reaches 91 percent compared with the most powerful parametric association test, Pearson's coefficient (r) (Siegel & Castellan, 1988). That is to say, using r_s to test for the presence of association in the population for which the assumptions required for Pearson's coefficient have been met, the efficiency of r_s reaches 91 percent of r in rejecting the null hypothesis.

3. Results

The study measured five constructs: i) cognitive component of attitude towards slimming drugs; ii) affective component of attitude towards slimming drugs; iii) general attitude towards slimming drugs; iv) consumer attitude toward slimming drug ads (one with predominantly rational appeal and another with predominantly emotional appeal); and v) behavioral intention as a consequence of exposure to ads. 320 questionnaires were applied, 315 of which were valid. Participants were concentrated in age groups: 21-30 (36%) and 31-40 (26%). Third came respondents in the 41-50 age group (15%). Age groups up to 20 (14%), 51-60 (7%) and over 61 (1%) followed. In terms of scholarly achievement, most respondents were high school graduates and had some higher learning (51%), followed by higher education degree (18%). The sample had rather similar shares of respondents who had (51%) and had not (48%) taken weight-loss drugs. Only 1 percent of respondents refused this question. Among respondents who had taken a slimming drug, 70 percent did so with prescription and 29 percent without. As for relative weight at the time of the survey, the vast majority of respondents indicated that they were over-weight (71%). Respondents at or below their ideal weight accounted for 29 percent of the sample.

To analyze the components of consumer attitude toward slimming drugs, we analyzed the association between constructs: i) cognitive component of attitude and general attitude; ii) affective component of attitude and general attitude. For each construct, item-by-item, the frequency in each position on the scale was counted, creating three new variables corresponding to the constructs. The frequency count for the cognitive component construct can be seen in Table 1; the same procedure was used for the affective component and general attitude constructs. Spearman's correlation was

then applied to these constructs. Spearman's correlation was stronger between the cognitive component of attitude and general attitude (0.857) than between the affective component of attitude and general attitude (0.750), and only the former was significant (S.L. 0.05). This indicates a predominantly cognitive attitude of consumers, more closely related with the functional characteristics of the product than with its emotional benefits.

Table 1. Frequency count for the cognitive component of attitude construct

Position of the scale	Items frequency count						
	R07: Healthy / Unhealthy	R08: Reliable / Doubtful	R09: Beneficial / Harmful	R10: Necessary / Unnecessary	R11: Convenient / Inconvenient	R12: Effective / Ineffective	Cognitive component of attitude construct
7	23	30	31	78	43	66	271
6	33	36	42	35	43	40	229
5	44	66	70	79	72	67	398
4	57	38	56	46	58	54	309
3	30	28	27	19	14	17	135
2	18	29	22	12	16	20	117
1	110	88	66	46	69	51	430

We also checked for differences in components of attitude towards slimming drugs between individuals of different relative weights. Two categories were formed: i) individuals at or below ideal weight; and ii) individuals above ideal weight. For the group of respondents at or below ideal weight, the association was stronger between the cognitive component and general attitude (0.800) than between the affective component and general attitude (0.557), both of which were significant (S.L. 0.01). For the group of respondents that claimed to be above their ideal weight, association was also stronger between the cognitive component and general attitude (0.656) than between the affective component and general attitude (0.297), both of which were significant (S.L. 0.01).

In addition, we checked for differences in components of attitude towards slimming drugs between individuals who had and those who had not taken such drugs. In both cases, association was stronger between the cognitive component and general attitude (0.502 and 0.712, respectively) than between the affective component and general attitude (0.212 and 0.347, respectively), all of which were significant (S.L. 0.01).

To analyze the attitude of consumers toward slimming drug ads with predominantly rational and predominantly emotional appeals, as well as their behavioral intention, item-by-item, the frequency at each position on the scale was counted, creating four new variables for the constructs: i) attitude towards rational/emotional ads; ii) behavioral intention from rational/emotional ad. The frequency counts and frequency ratios at the low, medium and high ranges of the scale for each construct can be seen in Table 2. The rational ad surpassed the emotional one on the medium and high ranges (22.18% vs. 21.24% and 58.82% vs. 57.94%, respectively). Results were somewhat similar as concerns behavioral intention, with the rational ad besting the emotional one in the mid and high ranges of the scale (18.78% vs. 18.55% and 41.41% vs. 38.50%, respectively). Direct questioning respondents about their favorite ad confirm their more favorable attitude towards the rational one. 42% of the respondents liked it better, while 32% preferred the emotional one. The remaining 26% of respondents preferred neither. We also checked for differences in attitudes and behavioral intentions between consumers of different relative weights and previous experience with the product class. No differences were found between the groups.

Table 2. Frequency counts and frequency ratios at the low, medium and high ranges of attitude towards ads and behavioral intention constructs

Construct	Frequency of answers						
	1	2	3	4	5	6	7
	Low range			Medium range	High range		
Attitude towards rational ad	371	116	235	838	816	486	917
	19,11%			22,18%	58,72%		
Attitude towards emotional ad	332	803	299	22,18%	677	503	1010
	20,82%			21,24%	57,94%		
Behavioral intention from rational ad	550	414	171	21,24%	327	284	302
	39,82%			18,78%	41,41%		
Behavioral intention from emotional ad	560	409	215	18,78%	304	258	287
	42,95%			18,55%	38,50%		

4. Discussion of results

Consumer attitudes towards slimming drugs were found to be predominantly cognitive. But given that the drug is related to people's lifestyles (appearance) and quality of living, we expected the affective component to have greater influence over attitude. Cognitively, weight-loss drugs were considered unhealthy, doubtful and harmful, although necessary, convenient and effective. Their emotional benefits were given a positive evaluation, causing women to feel excited, reliant, motivated, hopeful and acknowledged. Still, the general attitude towards slimming drugs is predominantly negative.

There was a slight difference between respondents of different relative weights. For both respondent groups (at or below ideal weight and over ideal weight), the attitude towards slimming drugs was predominantly cognitive. But, in the former group, the cognitive and affective components of attitude were more closely associated with the general attitude. Among respondents at or below ideal weight, the cognitive component evaluations were predominantly negative. Affective component evaluations, in turn, were predominantly indifferent. Women at or below ideal weight regard slimming drugs as unhealthy, harmful, unnecessary and inconvenient, and show no emotion towards them.

Among respondents over ideal weight, cognitive component evaluations were split: one half of them were predominantly negative and another half – predominantly positive. Affective component evaluations were predominantly positive. General attitude evaluations were almost equally indifferent and negative. Women above ideal weight regard weight-loss drugs as unhealthy and harmful, but necessary, convenient and effective, and experience positive emotions and feelings towards them.

The results reinforce the perception that, as concerns medicinal drugs, the product's functional attributes are more closely associated with attitude (Vaughn, 1986). But we expected the affective component to have a greater influence on respondents over ideal weight. The probable cause of a different outcome is the negative cognition of slimming drugs among respondents, causing the product's emotional benefits to lose relevance in attitude formation. This is perhaps why the association between the affective component and the general attitude of respondents above ideal weight was so low. They acknowledge the drug's emotional benefits, but their general attitude is not very favorable.

Results indicate some differences between respondents who have and who have not taken slimming drugs, confirming the importance of consumer experience with a product in attitude formation. Attitude of respondents who had previously taken slimming drugs was predominantly cognitive. For respondents who had not ever taken such drugs, on the other hand, while attitude was also predominantly cognitive, both components were more strongly associated with the general attitude.

Among respondents who had previously taken slimming drugs, cognitive component evaluations were markedly negative. Affective component evaluations were positive in essence. General attitude, on the other hand, was predominantly negative. Therefore, respondents who have taken slimming drugs regard them as necessary, convenient, effective, unhealthy, unreliable and harmful, even though they generate excitement, hope and acknowledgment, making for a generally negative attitude.

Among respondents who had not ever taken slimming drugs, cognitive component evaluations were predominantly negative; affective component ones were generally indifferent; and general attitude evaluations were markedly negative. Respondents who had never taken weight-loss drugs consider them unhealthy, unreliable, harmful, unnecessary and ineffective, and experience no emotion towards them. They also sport a predominantly negative general attitude. This negative cognition of slimming drugs may be the reason why overweight individuals in this respondent group never used such drugs.

The second step towards achieving the planned research objective was to evaluate consumer attitudes towards predominantly rational and predominantly emotional ads. The results show more favorable behavioral attitudes and behavioral intention towards the former. This, together with the attitude component results for slimming drugs (predominantly cognitive), leads to a relevant finding. As suggested by advertising models (Elaboration Likelihood; Foote, Cone & Belding; Rossiter-Percy; Affect-Reason-Involvement), when consumer attitudes toward a product are predominantly cognitive, a rationally appealing advertisement should be more effective (more favorable attitude and behavioral intention towards the ad). Here, however, the difference in favorable attitude and behavioral intention between the rational and the emotional ads was not too expressive. A significant share of respondents was more favorable to the emotional piece.

The results show no difference between respondents of different relative weights as regards attitude and behavioral intention towards advertisements. The attitudes and intended behaviors of the two groups (at or below ideal weight and above ideal weight) were similar when faced with the rational and

emotional ads. This indicates that respondent weight, as a consumer characteristic, should not influence their attitude towards slimming drugs. Nor did we detect any difference in attitude and behavioral intention towards advertisements between respondents that have and have not experience with slimming drugs. As a result, attitude towards advertisement does not appear to be influenced by the consumer's experience with the product or lack thereof.

From the consumers' viewpoint, the advertisement models' recommended matching of appeals with consumer attitude toward the product has been confirmed. Consumer attitude towards weight-loss drugs was predominantly cognitive, and attitude and behavioral intention were more favorable to the rational ad. Generally speaking, the results show that, when individuals are exposed to advertisements consistent with the predominant component of their attitudes (cognitive/affective), the advertisement is more effective (more favorable attitude and behavioral intention).

As a consequence, using emotional appeals in weight-loss drug advertisements would have no positive influence on consumer attitudes, as their negative cognition is primordial in attitude formation, even where interest exists in the product (individuals over ideal weight). The effectiveness of an advertisement's appeal, where consumer attitude towards the product is predominantly cognitive, depends on the degree to which they strike specific cognitions highly associated with the product or brand (Drolet & Aaker, 2002). But using advertising appeals that fail to strike the cognitions associated with the product might form or reinforce negative attitudes.

One possibility for marketers of slimming drugs is to change the negative cognition of the product by using predominantly rational advertisements. Only then emotional benefits could be exploited with possible positive effects. At the same time, authorities might educate the population on the risks and potential negative effects of weight-loss drugs, thereby neutralizing the effects of advertisements that attempt to persuade consumers with predominantly emotional arguments.

These managerial implications offer insights for more effective advertisements. On the other hand, they may help ANVISA in its goal of modernizing and updating medicinal drug-advertisement regulations, as well as in the implementation of population education and awareness policies concerned with the hazards of self-medication. In the reality of the United States, some critics of drug advertising prefer rational appeals when it comes to medicinal drugs. They argue that consumers should be given information, rather than simple attempts at persuasion with emotional appeals (Menon et al., 2004). The use of emotional appeals in medicinal drug advertising is deemed acceptable by some critics of this type of advertisement, and as the best means to control persuasion efforts on the part of drug manufacturers (Mehta & Purvis, 2003). But this study has determined that consumers are more favorable to rational appeals and, therefore, that these can be more persuasive in the case of medicinal drugs. This reinforces the relevance of the concerns of experts who fully oppose drug advertising of any kind, such as Nascimento (Nascimento, 2005), as the provision of information also poses risks. Consumers may get the impression that they have in-depth knowledge of a drug and exert pressure over doctors for prescription. They may also feel as knowledgeable as doctors and self-medicate. Therefore, the use of rational appeals is no assurance of control over the negative effects of DTC advertising. Once again, the best path appears to be educating the population. Consumers should be capable of understanding, interpreting and using information on medicinal drugs. This, however, is a difficult task.

Brazilian authorities seem to be concerned with medicinal drugs advertising. This can be perceived in actions like the prohibition advertising for erectile dysfunction drugs (Propaganda, 2003) and the constant supervision of ads by the ANVISA (Jimenez, 2004). More recently, all medical drug advertising was banned in drugstores. Symbols, logos, slogans, names of manufacturers and any other argument to advertising medicines couldn't be exposed anymore. Consumer can be influenced with excessive exposure to messages about drugs and ANVISA wants to avoid self-medication.

5. Limitations and suggestions for future research

The first limitation lies in the non-probabilistic sample size, which prevents generalizing results. Future research should address this issue, which will require more funds than this survey had. Another limitation consists in the accuracy of field-survey measurements. The psychometric properties of the scales used were not examined. Many factors may lead to measurement errors, causing the observed score to differ from the true scoring of the measured characteristic (Churchill, 1991). Therefore, checking the validity, reliability and dimensionality of the scales is crucial in future research; as is testing the instruments with other types of drugs. Building and validating a specific scale for attitude towards medicinal drugs would be even better.

Field-survey respondents may also have been under the effect of a social desirability bias (Erffmeyer et al., 1999). Such a response bias arises from responses based not on what the individuals truly believe and feel, but on what they perceive as socially appropriate. It is possible that such a bias may have had an effect on respondent attitudes towards weight-loss drugs and the rational advertisement.

Finally, attitude towards advertising in general is one antecedent of consumer attitude towards advertisements (Mackenzie & Lutz, 1989). But no information is available on consumer attitude towards medicinal drug advertising in Brazil. Research on this topic may provide important managerial implications.

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