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**Prescription Drug Communication Strategies: A Comparative Analysis of  
Physician Attitudes in Europe, the Middle East and the Far East**

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# **Prescription Drug Communication Strategies: A Comparative Analysis of Physician Attitudes in Europe, the Middle East and the Far East**

## **ABSTRACT**

*Research into direct-to-consumer (DTC) advertising of prescription drugs is extensive in individualistic cultures. In contrast, using Hofstede's classification to select representative collectivist countries in high potential regions and conducting surveys of 308 physicians in Greece, the United Arab Emirates and Taiwan, this research investigates physician attitudes towards the value of drug manufacturers' physician- and consumer-targeted communication strategies. The analysis reveals that physicians are satisfied with physician-targeted communication strategies and greatly value two-way interactive approaches, though they have significantly differing attitudes across cultures towards the likely impacts of DTC advertising, with Greek physicians the most opposed. They generally support unbranded disease awareness campaigns though. The research findings thus suggest that planned value creation for manufacturers and consumers through DTC advertising conflicts with the value delivery for the intermediary physician, which delays the expansion of this advertising policy.*

**Keywords:** Direct-to-consumer advertising, Drug marketing, International, Value creation, Value delivery, Advertising ethics.

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This research considers several features of value creation and value delivery (Lindgreen and Wynstra 2005) in the healthcare marketplace, with an emphasis on the complexity of creating and delivering value in a multiple stakeholder environment that includes both profit-oriented and not-for-profit motives. The drug market comprises the manufacture of products designed to treat consumers (profit motive) but also involves a key intermediary, namely, the physician (generally not-for-profit, with regard to pharmaceuticals). The relationships that constitute this marketplace include those between drug manufacturers and physicians, between physicians and consumers and, with the advent of direct-to-consumer (DTC) advertising of prescription drugs, between manufacturers and consumers.

Drug manufacturers, in their efforts to increase sales (and provide value to shareholders), attempt to create and deliver value to consumers by advertising directly to them. Manufacturers assert that such advertising increases consumers' healthcare knowledge, encourages dialogue with physicians and enhances the recognition and treatment of undiagnosed illnesses (Bonaccorso and Sturchio 2002; Mitka 2003). This policy seems to garner support from end-user groups, at least in the United States and United Kingdom (Kucharsky 2005; Lowery 2003; Reast, Palihawadana and Shabbir 2008). However, the approach has proven less popular among an important intermediary: physicians. Prior research that surveys physicians in New Zealand, the United States and United Kingdom indicates their general opposition to DTC advertising. If anything, physicians perceive that DTC advertising destroys rather than creates value (Mitka 2003; Thomaselli 2003; Yuan and Duckwitz 2002). This study acknowledges these responses, as well as the ongoing calls for more research into how different value chain actors create and deliver value for customers (Lindgreen

and Wystra, 2005), and therefore provides a comparative investigation of DTC advertising across diverse cultures located in mainland Europe, the Middle East and Asia (Reast and Carson 2000; Reast, Palihawadana and Spickett-Jones 2004).

In many countries, DTC advertising of prescription drugs is banned (Watson 2002). The initiation of such advertising in the United States in the early 1980s and in New Zealand in the 1990s prompted sustained ethical debates (Hensley and Vranica 2004; Lee, Salmon and Paek 2007), as well as vast communications budgets. Drug brand owners were responsible for advertising expenditures of approximately \$9.4 billion between 1996 and 2001 (IMS Health, 2002), and DTC advertising has contributed significantly to the struggling U.S. media market (Thomaselli 2006). However, even in the U.S. market, calls for significant regulatory restrictions have followed the market withdrawals of high-profile DTC advertising power brands, such as Vioxx (Merck) and Bextra (Pfizer), due to alarming safety concerns (Edwards 2005). The perceptions of overly aggressive DTC advertising strategies and the potential damage to corporate reputations (Wielondek 2005) have led some manufacturers to signal their intention to reduce their above-the-line expenditures (Arnold 2005). Yet despite these issues and criticisms, consumer support for DTC advertising appears resilient (Dolliver 2005; Kucharsky 2005), with 70 percent of U.S. consumers claiming that they support a manufacturer's right to advertise directly to consumers.

Several variables may influence the likely international expansion of DTC advertising, such as increased calls for more drug information available to consumers, virtually unlimited international access to drug manufacturers' U.S.-targeted Web sites, increasing e-retailing of prescription drugs and lobbying by manufacturers

(Rendon 2003). Therefore, the introduction of DTC advertising is being actively considered in Canada (Kucharsky 2005) and Australia (Smith 2007), and despite opposition to full DTC advertising in Europe (Watson 2002), unbranded drug advertising is increasing in this market.

As an issue of major economic and ethical significance, DTC advertising has prompted extensive research, especially in U.S. and New Zealand markets. This research investigates both consumers' (Alperstein and Peyrot 1993; Pines 1998) and physicians' (Petroshius, Titus and Hatch 1995; Yuan and Duckwitz 2002) attitudes regarding the ethics (Hensley and Vranica 2004; Lee et al. 2007), benefits (Desselle and Aparasu 2000) and issues (Mintzes et al. 2002; Prince 2003) associated with DTC practices. However, other than a few studies in Australia (Miller and Waller 2004) and the United Kingdom (Lowery 2003; Reast and Carson 2000; Reast et al. 2008; U.K. Consumers Association 2002), little research notes responses by consumers or physicians to DTC advertising in the substantial drug markets of mainland Europe (which accounts for more than one-third of worldwide drug sales), the Middle East or the Far East.

The global healthcare market outside of the United States, New Zealand and the United Kingdom is vast, worth some US\$167 billion in Europe, over US\$7 billion in the Middle East and more than US\$50 billion in South and East Asia (IMS, 2005). Furthermore, the three markets that have garnered existing research attention all are individualistic cultures (Hofstede 1991), with relatively similar cultural profiles (see Appendix D). Considering the powerful influence of culture in many product and service domains (Yeniyurt and Townsend, 2003), responses to DTC advertising seem

likely to differ in countries whose cultural profile differs. Therefore, and considering possible bridgehead markets for the expansion of DTC advertising, we select three markets for further research. All three markets can be classified as collectivist cultures, with low individualism scores and broadly similar cultural profiles (see Appendix D). However, DTC advertising is not currently permitted in these three markets.

As one of the selected countries, Greece provides a representation of Hofstede's European Country profile and the cultural profile of Southern European countries, which also include Spain and Portugal (Hofstede 1991). It contains one of the fastest growing healthcare markets in Europe and is the eighth largest of the 27 EU members. We also select the United Arab Emirates as a representative of the Arab Countries noted by Hofstede (together with Egypt, Iraq, Kuwait, Lebanon, Libya and Saudi Arabia), because it reflects the cultural profiles within this region. The healthcare market growth rate in the United Arab Emirates is almost 8 percent, well above the regional average. Finally, the collectivist Taiwanese culture is highly representative of Hofstede's Asian Countries profile, broadly similar to mainland China and highly representative of other Asian countries such as Indonesia, South Korea and Thailand. Therefore, all three countries are collectivist cultures, with similar Hofstedian profiles, and representative of their local regions. In turn, they provide useful and relevant areas for research and potential bridgeheads for DTC advertising into Southern Europe (Greece), the Middle East (United Arab Emirates) and the Far East (Taiwan). The profiles for these three selected markets seem very similar, but of course, they are not identical on all measures. For example Greece records a very high uncertainty avoidance score (112) relative to the United Arab Emirates (68) and Taiwan (69).

Finally, this study addresses a critical research gap and provides an independent, exploratory evaluation of physicians' attitudes to DTC advertising in mainland Europe (Greece), the Middle East (United Arab Emirates) and the Far East (Taiwan). Across these various representative international markets, this study pursues three main research objectives: to establish physician attitudes towards the value of physician-targeted versus consumer-targeted communications; to assess the level of acceptance, and perceived impacts, of DTC advertising amongst physicians; and to assess physician responses to unbranded disease campaigns.

## **LITERATURE REVIEW AND HYPOTHESES**

Our review of DTC advertising, though comprehensive in nature, is structured to reflect our three main research questions. Most prior research inevitably occurs in the only two branded DTC advertising markets in the world, the United States and New Zealand, though the literature base also has been supplemented by research from the United Kingdom. (We provide a summary of the key physician-based empirical studies of DTC advertising in Appendix II.) For this review, we consider physicians' prior attitudes towards physician-targeted and consumer-targeted communications, preferences for specific types of communications from drug manufacturers, attitudes regarding the ethics and impacts of DTC advertising and attitudes towards unbranded disease awareness campaigns.

### **Physician- versus consumer-targeted communications**

Petroshius et al. (1995), who measure the general attitudes of U.S. physicians towards physician- and consumer-targeted communications, find a preference, particularly

amongst general practitioners, for the former. Although U.S. medical opinion appeared supportive of the value of DTC advertising in the mid-1990s (Petroshius et al. 1995), it may have become more negative over time; by 1997, a survey of U.S. family physicians indicated 80 percent of respondents viewed DTC advertising as a poor idea (Kravitz 2000; Mitka 2003). An IMS Health survey of 2,300 physicians also showed a 52 percent disapproval rating (Yuan and Duckwitz 2002). On balance, it appears that in recent years, more U.S. physician surveys have come to oppose than support DTC advertising (Mitka 2003; Thomaselli 2003; Yuan and Duckwitz 2002).

The U.K.-based research also has shown a consistent preference for the ethics of physician-targeted rather than consumer-targeted communication (Lowery 2003; Reast and Carson 2000; Reast et al. 2004, 2008). These findings mirror the concerns about DTC advertising expressed by the British Medical Association (2001), the professional body that represents physicians in the United Kingdom.

In New Zealand, though the two professional bodies representing physicians have expressed cautious support for the continuation of DTC advertising, grass-roots physician polls (MacKiven 1999) and the top two medical schools (Scrip 2003) accept physician-targeted communication but have condemned the practice of consumer-targeted communication.

Research amongst physicians therefore leads us to hypothesise:

*H<sub>1</sub>: Physicians from Greece, the United Arab Emirates and Taiwan significantly prefer the ethics of physician-targeted rather than consumer-targeted communication for the advertising of prescription drugs*

Petroshius and colleagues (1995) also indicate that the preferred advertising, that is, directed at physicians rather than consumers, influences the prescribing decisions U.S. physicians make. Research in the United Kingdom (Reast et al. 2004) suggests that physicians prefer types of communication with drug companies that give them the opportunity for dialogue and discussion (Williams and Hensel 1991).

Previous research therefore implies that detailing or discussions with sales representatives (Soumerai and Avorn 1990), conversations during clinical meetings, specific drug-related or ailment-related conferences (Evans and Beltramini 1986) or even social events might be preferable to one-way communication with drug manufacturers (Williams and Hensel 1991). According to the limited amount of extant research available, physicians tend to attribute less value to impersonal information sources, such as physician-targeted advertising (Avorn, Chen and Hartley 1982), direct mail (Shearer, Gagnon and Eckel 1978) and email campaigns than they do to other forms of more personalised information (Williams and Hensel 1991). Such preferences for two-way over one-way communications appear to support the 'high-quality communications' label often applied to two-way communications (Grunig and Hunt 1984). As an exception, medical journal articles represent a one-way, impersonal information source, yet prior research (Roberts 1987) indicates that these non-commercial sources tend to be perceived as welcome and valued information sources by physicians.

Therefore, input from research amongst physicians suggests:

H<sub>2</sub>: *Physicians from Greece, the United Arab Emirates and Taiwan significantly prefer two-way rather than one-way (with the exception of journal articles) communications with drug companies.*

### **The impacts of DTC advertising: Value enhancing?**

Debates about the impacts of branded DTC advertising generally have centred on impacts on patient–physician relationships, patient behaviours and concerns about communication strategies. First, in terms of the impacts on consumer–physician relationships, Peyrot and colleagues (1998) suggest that consumer awareness of DTC advertising activity may be associated with greater drug knowledge and more discussion with physicians relating to treatment. A U.S. Food and Drug Administration (FDA) survey also shows that increased DTC advertising prompts dialogue between physicians and consumers (Mitka 2003), which leads to stronger relationships between physicians and consumers (Bonaccorso and Sturchio 2002). Yet persons who are highly aware of advertising may not request specific drugs, due to concerns that this would annoy their physician (Peyrot et al. 1998). In contrast, Mechanic (1996), building on prior research by Perri and Nelson (1987), argues that an increased sense of consumerism in the physician–patient interaction might undermine their relationship. Potential conflicts might emerge in the relationship between physician and consumer, resulting from pressures to prescribe advertised drugs (Foley and Gross 2000; Mintzes et al. 2002; Prince 2003) or patients who may consider switching physicians who deny their drug requests (Kravitz 2000).

Second, researchers note the impact of DTC advertising on the numbers of consumer requests for medication and visits to the physician (e.g., Reast and Carson 2000). Are

additional visits beneficial for consumers seeking advice from their physicians (Aikin, Swasy and Braman 2004)? Are ‘new illnesses’ (Desselle and Aparasu 2000) being recognised and treated as a result of consumers’ contact with DTC advertising (Bonaccorso and Sturchio, 2002)? Conversely, DTC advertising might be creating superfluous visits and drug requests, both of which have negative time and cost implications for physicians, patients and the economy in general (Prince 2003). Although some research implies that DTC advertising is educational and informative for consumers (Alperstein and Perrot 1993; Perri and Nelson 1987; Yamey 2001), other work indicates that it can result in patient confusion (Foley and Gross 2000).

Third, U.S. research highlights problems associated with biased, incomplete or misleading advertising (Koerner 1999). An FDA survey reveals that 65 percent of physicians believe their patients confuse the relative risks and benefits of drugs that appear in DTC advertising (Aikin et al. 2004). Also, the U.K. Consumers Association (2002) reveals that consumers express scepticism about the motives of drug manufacturers and their commitment to providing unbiased, reliable information about drugs or their side effects in their advertisements.

Therefore, we hypothesise overall:

*H<sub>3</sub>: Physicians from Greece, the United Arab Emirates and Taiwan are negatively predisposed in their perceived impacts of branded DTC advertising.*

### **Attitudes towards unbranded disease awareness campaigns**

Because most U.S. research regarding DTC advertising concentrates on branded communication activity, little work pertains to unbranded disease awareness

campaigns. However, among U.K. physicians, Lowery (2003) finds an increasing majority who are supportive of unbranded approaches to consumer advertising; the campaigns also appear to have a mildly positive effect on patient traffic. A relatively small core of physicians remains hostile to such communications activities, as represented by recent European physician boycott actions of treatments promoted in unbranded disease awareness campaigns (Sheldon 2002). Similarly, Reast and colleagues (2004) find that though physicians are still mildly negative, they appear significantly more positive about unbranded disease awareness campaigns than about branded DTC advertising campaigns.

On the basis of literature pertaining to unbranded DTC advertising campaigns, we hypothesise:

H<sub>4</sub>: *Physicians from Greece, the United Arab Emirates and Taiwan are positively disposed towards unbranded disease awareness campaigns.*

## **METHODOLOGY**

### **Physician attitude study**

This study employs scales from existing, comprehensive survey instruments used in prior DTC advertising research (Reast and Carson 2000; Reast et al. 2004, 2008). These instruments reflect key variables identified by drug communication studies (e.g., Alperstein and Peyrot 1993; Avorn et al. 1982; Petroschius et al. 1995; Shearer et al. 1978; Soumerai and Avorn 1990). The English-language instrument remains the same for the Greek respondents and is subject to forward- and back-translations for the United Arab Emirates and Taiwan samples, to ensure equivalence. The questionnaire consists mainly of a series of Likert-scaled items (1 = Strongly agree, 7

= Strongly disagree); we pre-tested it with 10 physicians from each region prior to the full sample collection. The scales used for the physician questionnaire instrument appear in Appendix III. The respondents provide demographic information, as well as their attitudes towards the relative value of physician-targeted communication approaches, ethics of physician-targeted versus consumer-targeted communication, likely impact of DTC advertising and unbranded disease awareness campaigns.

Physicians attending symposia in Greece, the United Arab Emirates and Taiwan constitute the subject pools. The Greek sample was collected in Thessalonika (second-largest Greek city), that for the United Arab Emirates was gathered in Dubai (largest United Arab Emirates state) and the Taiwanese sample came from a meeting in Taipei (capital city). To complete the self-administered questionnaire, physicians attending two-day regional or national (Taiwan) physician meeting were asked to spend 10–15 minutes and return the questionnaire to the researcher prior to leaving the meeting. The initial sample was gathered on the first day of each symposium, with a follow-up sample collected from non-responders on the second day. We find no significant differences between responses and thus assert that non-response bias is not a significant concern for this study (Armstrong and Overton 1977).

A total of 308 physicians (100 in Greece, 105 in the United Arab Emirates and 103 in Taiwan) participated, with an overall response rate of 52 percent across the three markets (see Table 1). The samples gathered for each market are comparable to those obtained in U.S. and U.K. physician surveys (Petroshius et al. 1995; Reast and Carson 2000; Reast et al. 2004). Physicians often are accustomed to receiving incentives for taking part in commercial research, but the academic nature of this study generally

prevented requests for such incentives, nor were any provided. The level of physician interest in the subject matter appears to have been a motivator for engaging in the research.

**...Place Table 1 about here...**

## **RESULTS AND DISCUSSION**

The sample collected, representative of the physician populations for the respective country, reveals the demographic characteristics outlined in Table 2.

**...Place Table 2 about here...**

According to H<sub>1</sub>, physicians from the three countries prefer physician-targeted to patient-targeted marketing communications for prescription drugs. The results in Table 3 confirm that physicians from all regions have a significant preference for physician-targeted relative to consumer-targeted communications ( $p = .000$  for all regions), in support of H<sub>1</sub>.

**...Place Table 3 about here...**

Although they consistently prefer the ethics of physician-targeted communications, the physicians display a large and significant difference in attitudes regarding the ethics of consumer-targeted advertising. Greek physicians in particular believe very strongly ( $\bar{x} = 5.80$ ,  $SD = 1.770$ ) that such an approach is unethical, whereas physicians from the United Arab Emirates mildly accept these ethics ( $\bar{x} = 3.50$ ,  $SD = 1.974$ ). These significantly different perspectives may reflect the existing negative response to DTC advertising expressed within the EU Parliament (Watson 2002) and drug manufacturer boycotts by mainland European physicians (Sheldon 2002), which likely have greater effects on the Greek respondents. Their negative response also may reflect the relatively high uncertainty avoidance score of Greece (Hofstede 1991), which suggests Greek people try to avoid change because it causes them

disquiet. The mean score of 5.80 (SD = 1.770) for Greek physicians is consistent with findings from prior research amongst U.K. physicians, who record a mean of 5.69 on the same scale (Reast et al. 2004). No other published European evidence is available for comparison.

The mildly positive response to DTC advertising by United Arab Emirates physicians may reflect their close affiliations with the U.S. physician community. Many United Arab Emirates health professionals benefit from U.S. university training (UAE Embassy, 2009). For example, Harvard Medical School has a campus in Dubai, and John Hopkins University's medical school and hospital maintains contracts within the United Arab Emirates' hospital system.

In H<sub>2</sub>, we posited that physicians from the three countries would prefer interactive, two-way communications rather than one-way communication methods (cf. published research articles in journals) from drug companies. The results in Table 4 confirm, at an aggregate level, that physicians from all regions significantly prefer two-way interactive communications over one-way communications ( $p = .000$  for all regions).

**...Place Table 4 about here...**

In addition to this general support for H<sub>2</sub>, physicians from all three countries consistently value the opportunity for two-way communication (Grunig and Hunt 1984), whether with the sales representative, at clinical study meetings or at manufacturer-sponsored conferences. Fairly universally, and in rank order, clinical study meetings ( $\bar{x} = 2.49$ , SD = 1.384) appear as most valuable, followed by sales representative visits and sponsored conferences, which earn similar ratings ( $\bar{x} = 2.63$ , SD = 1.344;  $\bar{x} = 2.83$ , SD = 1.519, respectively). The only exception to the positive

ratings for two-way communications methods refers to social events (overall  $\bar{x} = 4.01$ ,  $SD = 1.720$ ), which appear less valuable than the more formalised two-way communication. One-way, non-interactive communications, such as adverts, direct mail or emails, provoke less favourable responses, though none is highly negative. With regard to detailed responses to one-way communications, research results published in journals ( $\bar{x} = 2.48$ ,  $SD = 1.415$ ) are listed as most valuable by all respondents (mean response is similar to that for the two-way clinical study meetings), followed by adverts in magazines ( $\bar{x} = 3.82$ ,  $SD = 1.677$ ), mail shots ( $\bar{x} = 4.02$ ,  $SD = 1.839$ ) and then emails ( $\bar{x} = 4.22$ ,  $SD = 1.976$ ) as less favourably rated methods.

Although research results published in medical journals are technically a one-way communication format, they prompt favourable responses because they represent more credible and thus valuable information sources (compared with advertising in journals). These articles have been subject to peer review, and they encourage dialogue of sorts through responses to the publishing journal. This result aligns closely with prior research findings pertaining to the usefulness of research articles in journals (Reast et al. 2004; Roberts 1987; Williams and Hensel 1991), as well as with  $H_2$ .

We also proposed that physicians from all three countries would be negatively disposed to the ethics and ethics-related impacts of DTC advertising. Consistent with the findings from Table 3, as well as their attitudes towards the ethics of DTC advertising, we find that physicians are not uniformly negatively disposed towards DTC advertising, so we cannot confirm  $H_3$ . Specifically, Greek physicians are

significantly more opposed to the introduction of DTC advertising ( $\bar{x} = 5.44$ ,  $SD = 2.007$ ) than are either Taiwanese ( $\bar{x} = 3.92$ ,  $SD = 1.509$ ) or United Arab Emirates ( $\bar{x} = 3.80$ ,  $SD = 1.555$ ) physicians, who instead hold largely neutral attitudes.

**...Place Table 5 about here...**

We also consider the ethics-related impacts of DTC advertising and here find largely consistent results; Greek physicians again tend to hold more negative attitudes towards DTC advertising, whereas physicians from the United Arab Emirates tend to be much more supportive. All our respondents agree that DTC advertising leads to an increase in unnecessary prescribing, yet Greek physicians ( $\bar{x} = 1.95$ ,  $SD = 1.684$ ) appear significantly more negative than their counterparts ( $p = .004$ ,  $p = .000$ ). Moreover, Greek physicians are significantly more likely to believe that DTC advertising undermines the role of the physician as a health specialist ( $\bar{x} = 2.52$ ,  $SD = 2.027$ ,  $p = .000$ ) and to disagree with the idea that DTC advertising improves health education ( $\bar{x} = 4.92$ ,  $SD = 2.160$ ,  $p = .000$  and  $.004$ ).

Greek physicians, along with Taiwanese physicians, hold significantly stronger attitudes than their United Arab Emirates counterparts about the pressure that DTC advertising places on physicians to defend their decisions. Greek physicians also feel significantly more strongly that DTC advertising is unlikely to enhance consumer–physician relationships ( $\bar{x} = 4.97$ ,  $SD = 2.042$ ,  $p = .000$  and  $.002$ ). Interestingly, and perhaps inconsistently, all physicians agreed, and some strongly, that DTC advertising increases unnecessary prescribing, but they also are broadly neutral toward the idea that DTC increases patient visits to the physicians themselves; only Taiwanese physicians ( $\bar{x} = 3.67$ ,  $SD = 1.560$ ) exhibit mild agreement with this statement.

Finally, consistent with the view of the Taiwanese physicians that DTC drives patients to them, these same physicians feel, significantly more strongly than either Greek or United Arab Emirates physicians ( $\bar{x} = 3.39$ ,  $SD = 1.388$ ,  $p = .017$  and  $.000$ ), that DTC advertising increases the workload for physicians.

The response of Greek physicians is significantly more negative about the likely impacts of DTC advertising than that of Taiwanese or UAE physicians, but it is largely in line with the views described among U.K. physicians (Reast et al. 2004). The only substantive differences relate to perceived increases in consumer traffic and physician workload, about which U.K. physicians are more negative. The results gained from physicians from the United Arab Emirates and Taiwan have no regional comparisons; we address them in greater depth in the conclusion.

Finally,  $H_4$  states that physicians from all three countries should have a positive attitude towards the perceived impacts of unbranded disease awareness campaigns. The results in Table 6 do not confirm this claim, so we cannot offer support for  $H_4$ .

**...Place Table 6 about here...**

At the aggregate level, with overall mean scores, the response to unbranded disease awareness campaigns can be described at best as neutral. Physicians perceive some mild, potentially positive impacts of the campaigns, including increases in patient visits ( $\bar{x} = 3.36$ ,  $SD = 1.610$ ), increases in patient requests for medication ( $\bar{x} = 3.72$ ,  $SD = 1.511$ ), improvements in patient knowledge ( $\bar{x} = 3.67$ ,  $SD = 1.677$ ) and increased numbers of prescriptions for promoted categories ( $\bar{x} = 3.72$ ,  $SD = 1.794$ ). However, when they respond in the context of other measures, they indicate that such campaigns likely generate unnecessary patient visits ( $\bar{x} = 3.62$ ,  $SD = 1.881$ ), and they

are neutral when it comes to whether these campaigns will result in patients' recognition of genuine ailments ( $\bar{x} = 3.99$ ,  $SD = 1.756$ ) or just more confusion ( $\bar{x} = 3.92$ ,  $SD = 1.820$ ). Overall, they do not believe these campaigns will increase their workload though ( $\bar{x} = 4.19$ ,  $SD = 1.785$ ).

The responses from the different groups of physicians reveals no absolutely consistent pattern of results, though broadly speaking, Taiwanese and, to a lesser extent, Greek physicians tend to acknowledge a greater impact (both positive and negative), whereas those from the United Arab Emirates tend to perceive little impact of unbranded disease awareness campaigns. The results broadly match those found for U.K. physicians, though this latter group tends to be slightly more negative in perceiving that unbranded disease awareness campaigns encourage a high level of patient traffic (some unnecessary), more drug requests and greater patient confusion (Lowery 2003; Reast et al. 2004).

Although we cannot confirm  $H_4$  for all groups of physicians, responses to the impacts of unbranded disease awareness campaigns appear marginally more positive than those to branded DTC advertising (Table 5), which again is consistent with previous research published in a U.K. setting (Lowery 2003; Reast et al. 2004).

## **RESEARCH IMPLICATIONS**

### **Europe, the Middle East and the Far East**

Several implications for researchers, practitioners and public policymakers derive from this study, many of which relate to conflicts over the value creation and delivery associated with drug communication strategies. First, physicians value two-way over

one-way physician-targeted communication approaches (Reast et al. 2004; Williams and Hensel 1991), yet such approaches tend to be more expensive (e.g., sales rep visits at \$250–300 per call), whereas many large drug firms are trying to cut back on their large sales forces. Some current relationship management initiatives also attempt to downgrade ‘lower value physicians’ and target them with less costly communication contacts or fewer customer touches. Cost reduction efforts tend to mean switching from expensive, face-to-face, two-way contacts to less expensive two-way contacts (e.g., telephony) or one-way contacts such as direct mail or email. Our research suggests many physicians will be unhappy about this decision, because they perceive the less expensive contacts as less valuable and poorer quality. There is thus a clear conflict of interests: Manufacturers derive more value from the exchange (profitability) by switching to cheaper communications formats, but physicians perceive a loss of (informational and relationship) value with this policy.

Second, with regard to DTC advertising and practitioners in the advertising industry, our research indicates the need to acknowledge the nature of the stakeholder environment within the global drug market, if manufacturers hope to work to change the communications policy framework. Following an approach that maximises manufacturer value (e.g., sales, profits, share price) and focuses on end-customer value (e.g., health education, dialogue with physicians, illness recognition), at the expense of the healthcare intermediary, may be short-sighted. Physicians represent an important and influential stakeholder group, and their prescribing decisions have important influences on drug company profits (Dimopoulou and Fill 2000). Greek physicians—and European physicians in general, it would appear—exhibit very negative attitudes towards both the concept and perceived value and impacts of DTC

advertising. European physicians remain highly sceptical about its overall merits. Yet physicians in Taiwan and the United Arab Emirates appear broadly neutral to the ethics of and mildly positive about any proposed introduction of DTC advertising. They also are positive about several perceived impacts of DTC advertising, which implies they may offer the least resistance to its extension. If Taiwan is generally representative of physician attitudes within Asia and the United Arab Emirates provides a good representative of wider physician opinion in the Middle East, our research might be considered a breakthrough insight for drug brand owners.

Third, drug brand owners have an opportunity to enhance the value of their current unbranded disease awareness campaigns worldwide and reassure stakeholders concerned about branded DTC advertising communications. Unbranded disease awareness campaigns, if well managed (ideally with physician and stakeholder input) can provide a positive showcase for how DTC advertising might work.

Working with, rather than against, physicians, should help ensure that the campaigns adopt precise and appropriate targeting, offer improvements in consumer health education and illness recognition and produce few complaints about biased or misleading advertising copy. Such an approach also may encourage physicians and public policymakers to look more favourably on the policy.

Fourth, physicians universally indicate their belief that DTC advertising will lead to an increase in unnecessary prescriptions; therefore, public policymakers should recognise the potential impacts on national drug budgets (Prince 2003). Regardless of whether DTC advertising drives beneficial visits to the physician or unnecessary

wastes of time, the outcome is likely to be increased costs for managing patients and the extra prescriptions generated. Policymakers should weigh the value of DTC advertising in terms of the increased awareness and treatment of genuine illness (particularly among men) against the costs of such as policy.

### **The U.S. direct-to-consumer advertising market**

The advertising industry, especially in the United States, can play a role in calming the fears of key stakeholder groups. Many major, global advertising agencies enjoy a strong position that enables them to recognise the wider geographic policy implications of aggressive advertising strategies in current DTC advertising markets. It is in the interest of these agencies to guide clients towards more responsible communication strategies, with the knowledge that this approach should lead to at least partial geographic extension of DTC advertising.

The research findings also suggest some specific guidance for the U.S. domestic market situation. For example, many drug companies have chosen a pull strategy and DTC advertising, yet the physician remains a critically important stakeholder for prescription sales (i.e., push strategy). In the end, it is the physician who decides to prescribe a particular drug. Because of the importance of this relationship, and given the widespread evidence of biased, incomplete or misleading U.S. advertising targeted at consumers, physician research panels should be integrated into the communication planning process for new campaigns. This approach could ensure that health educational value exists in the campaigns whilst simultaneously reducing any misleading or confusing advertising and concerns about the ‘medicalisation’ of trivial diseases. In addition, advertising practitioners should revisit consumer-based positioning and pre-test research that underpins their existing campaigns to confirm

they offer clarity and educational value, particularly for older consumers (Foley and Gross 2000), who are often heavy users of medication.

## **CONCLUSIONS**

Partially because of the conflicts regarding the value being created and delivered to stakeholders in drug markets worldwide, many objections still remain to DTC advertising. Manufacturers appear to have put their own self-interest (i.e., sales and profitability) ahead of delivering value to consumers (healthcare knowledge), at the expense of physicians' interests and value. Many physicians believe that DTC advertising is of dubious value to consumers who might be confused more than educated, to governments that must confront vastly increasing health budgets and to physicians whose relationships with manufacturers suffers and whose value and position gets undermined with consumers. If manufacturers want greater success from their DTC advertising expansion, they should work more closely with their partners (physicians) in the value delivery process they provide to consumers. If physicians feel undermined, pressured and threatened by DTC advertising, they are more likely to oppose its extension.

Physicians from Greece, the United Arab Emirates and Taiwan generally support the ethics of physician-targeted communications relative to consumer-targeted communications, and they exhibit a consistent preference for the value of a two-way interactive approach. Greek physicians are strongly opposed to the ethics, introduction and likely value of DTC advertising. In stark contrast, physicians in Taiwan are relatively neutral towards these aspects, and physicians in the United Arab Emirates are mildly positive about the ethics of such a policy, while physicians in both these countries are mildly in favour of its introduction.

Unlike their colleagues in the United Arab Emirates and Taiwan, Greek physicians tend to view DTC advertising as a potential detriment to the relationship between physician and patient, which might undermine the value of the physician within this relationship. The other key difference between Greek physicians and their colleagues from the United Arab Emirates and Taiwan is the perception of little educational value for consumers associated with DTC advertising. Relatively consistently across the three countries, physicians think that DTC advertising should increase unnecessary prescribing and add pressure on the physician to defend his or her prescribing decisions. Of course, the responses from the different countries are not entirely clear-cut, but the results do tell the story of a more positive outlook by Taiwanese and United Arab Emirates physicians and a strong negative perspective adopted by Greek physicians. Their strong opposition to DTC advertising suggests that the Southern European drug market may be an unlikely source of the catalyst for EU acceptance of the policy within the foreseeable future. However, regions such as the Middle East and Asia may offer more amenable opportunities for the development of branded DTC advertising.

Finally, unbranded DTC advertising provokes mildly positive or neutral responses in these three sample countries. Further extensions of these value-adding, unbranded disease awareness campaigns therefore seem possible, because all stakeholders—manufacturers, consumers and physicians—appear to find value in them.

### **Research limitations**

Greece, the United Arab Emirates and Taiwan, according to Hofstede's cultural classifications, are representative of their respective geographic regions, and the

samples collected are representative of physicians within each market. However, this research is limited in its ability to represent the views of all physicians in Southern Europe, the Middle East and the Far East. The survey conducted also cannot explain the underlying concerns and motivations that drive the respondents' attitudes towards drug communication strategies. Finally, this research does not address other major potential geographic markets, such as the Indian sub-continent.

### **Further research**

Given the positive response to DTC advertising by physicians from the United Arab Emirates, the Middle East, with its total population of approximately 400 million (approaching EU population numbers) demands further investigation. Also, in response to the ideas about DTC advertising in Taiwan, further consumer and physician studies should be directed towards other Asian countries, with the goal of establishing the likelihood of acceptance of DTC advertising. China, whose population is projected to reach 1.44 billion by 2025, and India, with a projected population of 1.46 billion by 2025, may offer key prospects for DTC advertising expansion. Furthermore, the negative response to DTC advertising in the U.K. and Greek samples suggests that qualitative research with European physicians should attempt to understand their motivations and objections in more depth, as well as how these concerns might be addressed.

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## TABLES

**Table 1: Survey Distribution and Response Rate**

Physicians	Number of Surveys Distributed	Number of Surveys Completed	Response Rate (%)
Greek	205	100	49
UAE	200	105	53
Taiwanese	185	103	56
Total Sample	590	308	52

**Table 2: Demographic Profile of Physicians**

	Age Profile %		Gender Profile %		Experience Profile %	
	≤ 40 yrs	≥ 40	Male	Female	≤ 10 yrs	≥ 11 yrs
<b>Greece</b>	39	61	73	27	45	55
<b>United Arab Emirates</b>	47	53	79	21	52	48
<b>Taiwan</b>	65	35	92	8	59	41

**Table 3: Physician Targeted versus Patient Targeted Communications**

<b>Ethics of physician and consumer targeted communications:</b>	Overall Physician Mean (Std Dev)	Greek Physician Mean (Std Dev) n <sup>1</sup>	UAE Physician Mean (Std Dev) n <sup>3</sup>	Taiwan Physician Mean (Std Dev) n <sup>2</sup>	Sig. value for Levene Statistic	Sig.	Sig. Differences Between groups n <sup>1</sup> n <sup>2</sup> n <sup>3</sup>
Promotion of Rx Drugs to Physicians is ethical (a)	2.75 (1.565)	2.90 (1.856)	2.52 (1.447)	2.87 (1.353)	.003	.167	
Promotion of Rx Drugs to Patients is ethical (b)	4.48 (2.040)	5.80 (1.770)	3.50 (1.974)	4.17 (1.627)	.158	.000	n <sup>2</sup> & n <sup>1</sup> (.000) n <sup>2</sup> & n <sup>3</sup> (.023) n <sup>1</sup> & n <sup>3</sup> (.000)
t-value (a versus b)	-12.188	-11.542	-3.799	-7.600			
p-value (a versus b)	.000	.000	.000	.000			

Notes: 1 = Agree, 7 = Disagree.

**Table 4: Physician Attitudes to One- and Two-Way Communications**

<b>Current Communications Methods Are ‘Extremely Useful’</b>	Overall Physician Mean (Std Dev)	Greek Physician Mean (Std Dev) n <sup>1</sup>	UAE Physician Mean (Std Dev) n <sup>3</sup>	Taiwan Physician Mean (Std Dev) n <sup>2</sup>	Sig. value for Levene Statistic	Sig.	Sig. Differences Between groups n <sup>1</sup> n <sup>2</sup> n <sup>3</sup>
Medical sales representative visit (Two-way)	2.63 (1.344)	2.60 (1.463)	2.40 (1.187)	2.88 (1.343)	.184	.039	n <sup>2</sup> & n <sup>3</sup> (.030)
Clinical study meetings (Two-way)	2.49 (1.384)	2.19 (1.475)	2.90 (1.369)	2.35 (1.208)	.417	.000	n <sup>2</sup> & n <sup>3</sup> (.011) n <sup>1</sup> & n <sup>3</sup> (.001)
Conferences sponsored by drug company (Two-way)	2.83 (1.519)	2.55 (1.654)	3.17 (1.665)	2.75 (1.121)	.000	.011	n <sup>1</sup> & n <sup>3</sup> (.009)
Social events (Two-way)	4.01 (1.720)	3.88 (1.976)	3.88 (1.826)	4.25 (1.272)	.000	.202	
<b>Mean: All two-way communications (A)</b>	<b>2.98 (1.015)</b>	<b>2.80 (1.123)</b>	<b>3.08 (1.030)</b>	<b>3.06 (.861)</b>	<b>.016</b>	<b>.090</b>	
Research results in journals (one-way)	2.48 (1.415)	2.27 (1.550)	2.93 (1.346)	2.22 (1.232)	.095	.000	n <sup>2</sup> & n <sup>3</sup> (.001) n <sup>1</sup> & n <sup>3</sup> (.002)
Prescription drug advertisements in journals (one-way)	3.82 (1.677)	4.13 (1.900)	3.39 (1.653)	3.92 (1.369)	.000	.006	n <sup>1</sup> & n <sup>3</sup> (.005)
Mail-shots (one-way)	4.02 (1.839)	3.52 (1.956)	3.77 (1.849)	4.75 (1.460)	.001	.000	n <sup>2</sup> & n <sup>3</sup> (.000) n <sup>2</sup> & n <sup>1</sup> (.000)
Email information from companies (one-way)	4.22 (1.976)	4.24 (2.234)	3.90 (2.052)	4.53 (1.546)	.000	.069	
<b>Mean: All one-way communications (B)</b>	<b>3.62 (1.094)</b>	<b>3.54 (1.250)</b>	<b>3.49 (1.009)</b>	<b>3.85 (.983)</b>	<b>.077</b>	<b>.038</b>	<b>n<sup>2</sup> &amp; n<sup>3</sup> (.048)</b>
t-value (A versus B)	-11.139	-6.399	-4.285	-9.379			
p-value (A versus B)	.000	.000	.000	.000			

Notes: 1 = Strongly agree, 7 = Strongly disagree.

**Table 5: Perceived Impact of DTC Advertising**

<b>Approval and Perceived Impact of DTC Advertising</b>	Overall Physician Mean (Std Dev)	Greek Physician Mean (Std Dev) n <sup>1</sup>	UAE Physician Mean (Std Dev) n <sup>3</sup>	Taiwan Physician Mean (Std Dev) n <sup>2</sup>	Sig. value for Levene Statistic	Sig.	Sig. Differences Between groups n <sup>1</sup> n <sup>2</sup> n <sup>3</sup>
DTC advertising introduction should be approved	4.38 (1.855)	5.44 (2.007)	3.80 (1.555)	3.92 (1.509)	.000	.000	n <sup>2</sup> & n <sup>1</sup> (.000) n <sup>1</sup> & n <sup>3</sup> (.000)
<b>Consumer Impacts:</b>							
Improve health education	4.04 (1.820)	4.92 (2.160)	4.17 (1.478)	3.05 (1.289)	.000	.000	n <sup>2</sup> & n <sup>1</sup> (.000) n <sup>2</sup> & n <sup>3</sup> (.000) n <sup>1</sup> & n <sup>3</sup> (.004)
Increase patients visits to physicians	4.04 (1.822)	4.17 (2.165)	4.29 (1.654)	3.67 (1.560)	.000	.038	n <sup>2</sup> & n <sup>3</sup> (.042)
<b>Physician Impacts:</b>							
Increase unnecessary prescribing	2.76 (1.856)	1.95 (1.684)	3.59 (2.083)	2.72 (1.366)	.000	.000	n <sup>2</sup> & n <sup>1</sup> (.004) n <sup>2</sup> & n <sup>3</sup> (.001) n <sup>1</sup> & n <sup>3</sup> (.000)
Increase physicians' workload	3.96 (1.828)	4.09 (2.127)	4.40 (1.812)	3.39 (1.388)	.000	.000	n <sup>2</sup> & n <sup>1</sup> (.017) n <sup>2</sup> & n <sup>3</sup> (.000)
Increase pressure on	3.20	2.82	3.97	2.80	.000	.000	n <sup>2</sup> & n <sup>3</sup> (.000)

physician to defend prescribing decisions	(1.816)	(2.022)	(1.900)	(1.180)			n <sup>1</sup> & n <sup>3</sup> (.000)
<b>Relationship Impacts:</b>							
Undermine value of physician as health specialist	3.37 (1.910)	2.52 (2.027)	4.08 (1.983)	3.51 (1.334)	.000	.000	n <sup>2</sup> & n <sup>1</sup> (.000) n <sup>1</sup> & n <sup>3</sup> (.000)
Enhance patient-physician relationship by encouraging more communication	4.18 (1.907)	4.97 (2.042)	4.10 (1.830)	3.49 (1.545)	.000	.000	n <sup>2</sup> & n <sup>1</sup> (.000) n <sup>2</sup> & n <sup>3</sup> (.043) n <sup>1</sup> & n <sup>3</sup> (.002)

Notes: 1 = Strongly agree, 7 = Strongly disagree.

**Table 6: Impact of Unbranded Disease Awareness Advertising**

Impact of Unbranded Disease Awareness Advertising	Overall Physician Mean (Std Dev)	Greek Physician Mean (Std Dev) n <sup>1</sup>	UAE Physician Mean (Std Dev) n <sup>3</sup>	Taiwan Physician Mean (Std Dev) n <sup>2</sup>	Sig. value for Levene Statistic	Sig.	Sig. Differences Between groups n <sup>1</sup> n <sup>2</sup> n <sup>3</sup>
Lead to increases in patient visits	3.36 (1.610)	3.30 (1.998)	3.26 (1.443)	3.65 (1.271)	.001	.446	
Lead to increases in patient requests for medication	3.72 (1.511)	3.36 (1.495)	4.27 (1.502)	3.22 (1.229)	.246	.000	n <sup>2</sup> & n <sup>3</sup> (.001) n <sup>1</sup> & n <sup>3</sup> (.002)
Improve patients' knowledge	3.67 (1.677)	3.56 (1.922)	4.01 (1.657)	3.20 (1.181)	.005	.040	n <sup>2</sup> & n <sup>3</sup> (.036)
Improve the Physician-Patient Relationship	4.07 (1.746)	4.09 (2.057)	4.47 (1.689)	3.32 (1.022)	.000	.003	n <sup>2</sup> & n <sup>3</sup> (.002)
Lead to confusion amongst patients	3.92 (1.820)	3.94 (2.040)	4.00 (1.906)	3.76 (1.286)	.007	.815	
Increased physicians' workload	4.19 (1.785)	4.25 (1.897)	4.59 (1.820)	3.35 (1.224)	.012	.002	n <sup>2</sup> & n <sup>1</sup> (.038) n <sup>2</sup> & n <sup>3</sup> (.001)
Encourage unnecessary patient visits	3.62 (1.881)	2.80 (1.659)	4.49 (1.893)	3.17 (1.465)	.036	.000	n <sup>2</sup> & n <sup>3</sup> (.000) n <sup>1</sup> & n <sup>3</sup> (.000)
Result in increased Rx's for promoted categories	3.72 (1.794)	3.14 (1.445)	4.54 (1.936)	3.00 (1.300)	.000	.000	n <sup>2</sup> & n <sup>3</sup> (.000) n <sup>1</sup> & n <sup>3</sup> (.000)
Result in patient recognition of genuine ailments	3.99 (1.756)	4.05 (1.840)	4.24 (1.891)	3.42 (1.177)	.001	.059	n <sup>2</sup> & n <sup>3</sup> (.049)

Notes: 1 = Strongly agree, 7 = Strongly disagree.

## APPENDICES

### Appendix I: Hofstede's Cultural Profiles

Country	Power Distance	Individualism	Uncertainty avoidance	Masculinity
<b>Individualistic country profiles</b>				
USA	40	91	46	62
New Zealand	22	79	49	58
Great Britain	35	89	35	66
<b>Collectivist sample</b>				
Greece	60	35	112	57
Arab Countries	80	38	68	53
Taiwan	58	17	69	45
<b>Comparator countries</b>				
Spain	57	51	86	42
Iran	58	41	59	43
China, Mainland	80	20	35	50

Source: Hofstede (1991)

### Appendix II: IMS Data: World Drug Market Forecasts 2005–2010

Geographic Area	Project 2010 value US \$ billion	Assumed Growth Rate 2005-2010 %
Europe (EU) exc. U.K.	166.8	5.2
Greece	5.9	6.0
South East & East Asia	52.6	12.3
Taiwan	4.2	5.5
People's Republic of China (PRC)	27.0	18.4
Middle East	7.2	5.7
United Arab Emirates	.407	7.9
North America	365.4	6.5
United States	346.5	6.5
Latin America	38.8	5.9
Indian sub-continent	13.4	10.4
African continent	11.1	6.4
New Zealand	.802	0.9

Notes: Values based on ex-manufacturer prices using constant exchange rates.

### Appendix III: DTC Advertising: Key Physician Research Studies

Authors	Objectives	Methodology	Major Findings
Petroshius et al. (1995)	Relationship between physician attitude to DTC advertising; physician targeted ads; attention to ads; Rx writing habits; and response to patient requests.	Self-administered questionnaire amongst a sample of 148 US physicians, and a questionnaire hand-delivered to 250 physicians' offices.	U.S. physicians are favourably disposed to the advertising of drug products to both consumers and physicians. Results suggest that physicians' attitudes to DTC advertising ads are good predictors of: attention to the ads, writing prescriptions for advertised products, and responsiveness to patient requests.
Reast and Carson (2000)	Attitudes of GPs & hospital physicians towards DTC advertising.	A total of 68 U.K. physicians: 35 GPs and 33 Hospital physicians.	While supportive of physician-targeted material, the sample opposed DTC advertising introduction, perceived that it would damage physician patient relationships, and perceived it to have many negatives.
Lowery (2003)	Attitudes of U.K. physicians towards DTC advertising, and physician and consumer attitudes towards current disease awareness campaigns.	U.K. Survey of 203 GPs and 1050 consumers.	GPs reported generally negative attitudes to DTC advertising, with 75% opposing DTC advertising. A majority were positive about 'disease awareness campaigns'.
Aikin et al. (2004)	To evaluate the effects of DTC advertising on the public health and on physician-patient interaction & behaviour.	U.S. Federal Drugs Administration (FDA) survey of 944 consumers.  FDA survey of 500 physicians in 2002	Results indicated high levels of DTC advertising awareness. DTC advertising prompted information search, and low levels of DTC advertising prompted surgery visits and drug requests.  Overall physicians were broadly divided regarding the impacts of DTC advertising, and whilst 86% of physicians reported that patients asked about a specific drug, almost 90% had the appropriate condition.
Eagle and Chamberlain (2004)	To investigate DTC advertising awareness, information search, surgery visits, drug requests and physician responses.	General Physicians (262), Pharmacists (259), and Practice Nurses (418) in N.Z. 1310 NZ consumers	Almost 73% of respondents recalled seeing or hearing a DTC advertising, but just 8-9% raised discussion with physician. Findings showed low levels of pressure being felt by physicians in their prescribing decisions.
Reast, Palihawadana and Spickett-Jones (2004)	Assessing the attitudes of U.K. physicians towards the concept and likely impact of DTC advertising, and attitudes towards unbranded DTC advertising campaigns	U.K. – 160 general practitioners and hospital physicians – questionnaire survey	U.K. physicians are opposed to the concept and likely overall impact of branded DTC advertising campaigns, and also towards unbranded DTC campaigns
Reast, Palihawadana and Shabbir (2008)	Assessing the attitudes of U.K. physicians and Consumers towards DTC advertising campaigns	U.K. – 168 physicians, 285 consumers – questionnaire survey	U.K. physicians are strongly opposed, and U.K. consumers are neutral towards the idea of DTC advertising of prescription drugs. Physicians were less negative toward unbranded campaigns, and consumers were mildly positive to these unbranded disease awareness campaigns.

### Appendix IV: Source of scales used in prior research

Scales utilised	Prior use of Scale
The promotion of prescription drugs to doctors is ethical	Reast and Carson, 2000; Reast, Palihawadana and Shabbir, 2008
Advertising prescription drugs directly to patients is ethical	Reast and Carson, 2000; Reast, Palihawadana and Shabbir, 2008
How do you rate the value to your work of the following types of communication conducted by drug companies?	Reast, Palihawadana, and Spickett-Jones, 2004
<ul style="list-style-type: none"> <li>Medical sales representative visit</li> </ul>	Reast, Palihawadana, and Spickett-Jones, 2004
<ul style="list-style-type: none"> <li>Clinical study meetings</li> </ul>	Reast, Palihawadana, and Spickett-Jones, 2004
<ul style="list-style-type: none"> <li>Conferences sponsored by drug company</li> </ul>	Reast, Palihawadana, and Spickett-Jones, 2004
<ul style="list-style-type: none"> <li>Social events</li> </ul>	Reast, Palihawadana, and Spickett-Jones, 2004
Research results in journals	Reast, Palihawadana, and Spickett-Jones, 2004
<ul style="list-style-type: none"> <li>Prescription drug advertisements in journals</li> </ul>	Reast, Palihawadana, and Spickett-Jones, 2004
<ul style="list-style-type: none"> <li>Mail-shots</li> </ul>	Reast, Palihawadana, and Spickett-Jones, 2004
<ul style="list-style-type: none"> <li>Email information from companies</li> </ul>	Reast, Palihawadana, and Spickett-Jones, 2004
To what extent do you approve of the introduction of prescription drug advertising to the general public?	Reast and Carson, 2000; Reast, Palihawadana and Shabbir, 2008
To what extent do you agree that the following effects will result from the advertising of prescription drugs to the general public?	Reast and Carson, 2000; Reast, Palihawadana and Shabbir, 2008
<ul style="list-style-type: none"> <li>Improve health education</li> </ul>	Reast and Carson, 2000; Reast, Palihawadana and Shabbir, 2008
<ul style="list-style-type: none"> <li>Increase patients visits to physicians</li> </ul>	Reast and Carson, 2000; Reast, Palihawadana and Shabbir, 2008
<ul style="list-style-type: none"> <li>Increase unnecessary prescribing</li> </ul>	Reast and Carson, 2000; Reast, Palihawadana and Shabbir, 2008
<ul style="list-style-type: none"> <li>Increase physicians' workload</li> </ul>	Reast, Palihawadana and Spickett-Jones, 2004
<ul style="list-style-type: none"> <li>Increase pressure on physician to defend prescribing decisions</li> </ul>	Reast and Carson, 2000

<ul style="list-style-type: none"> <li>Undermine value of physician as health specialist</li> </ul>	Reast and Carson, 2000; Reast, Palihawadana and Shabbir, 2008
<ul style="list-style-type: none"> <li>Enhance patient-physician relationship by encouraging more communication</li> </ul>	Reast and Carson, 2000; Reast, Palihawadana and Shabbir, 2008
<p>How would you rate the impact of unbranded 'see your doctor' advertising campaigns by drug manufacturers?</p> <ul style="list-style-type: none"> <li>They will lead to increases in patient visits</li> </ul>	Reast, Palihawadana and Spickett-Jones, 2004; Reast, Palihawadana and Shabbir, 2008 Reast, Palihawadana and Spickett-Jones, 2004; Reast, Palihawadana and Shabbir, 2008
<ul style="list-style-type: none"> <li>They will lead to increases in patient requests for medication</li> </ul>	Reast, Palihawadana and Spickett-Jones, 2004; Reast, Palihawadana and Shabbir, 2008
<ul style="list-style-type: none"> <li>They will lead to improved patients' knowledge</li> </ul>	Reast, Palihawadana and Spickett-Jones, 2004; Reast, Palihawadana and Shabbir, 2008
<ul style="list-style-type: none"> <li>They will improve the physician-patient relationship</li> </ul>	Reast, Palihawadana and Spickett-Jones, 2004; Reast, Palihawadana and Shabbir, 2008
<ul style="list-style-type: none"> <li>They will lead to confusion amongst patients</li> </ul>	Reast, Palihawadana and Spickett-Jones, 2004; Reast, Palihawadana and Shabbir, 2008
<ul style="list-style-type: none"> <li>They will increase physician workloads</li> </ul>	Reast, Palihawadana and Spickett-Jones, 2004; Reast, Palihawadana and Shabbir, 2008
<ul style="list-style-type: none"> <li>They will encourage unnecessary patient visits</li> </ul>	Reast, Palihawadana and Spickett-Jones, 2004; Reast, Palihawadana and Shabbir, 2008
<ul style="list-style-type: none"> <li>They will result in increased prescriptions for promoted categories</li> </ul>	Reast, Palihawadana and Spickett-Jones, 2004; Reast, Palihawadana and Shabbir, 2008
<ul style="list-style-type: none"> <li>They will result in patient recognition of genuine ailments</li> </ul>	Reast, Palihawadana and Spickett-Jones, 2004; Reast, Palihawadana and Shabbir, 2008