

Review

Content analysis of persuasive techniques used by pharmaceutical company representatives during promotional visits to doctors

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Abstract

Contact between pharmaceutical company representatives (PCRs) and medical practitioners is viewed by drug companies as a vital part of their marketing strategy. Studies show that PCRs employ persuasion disguised as information. Because PCRs are keenly involved in competitive marketing, they are more likely to use persuasion than information during their promotional visits. Information increases customer awareness of a particular product without influencing the preferences. Persuasive marketing directly influences a consumer's brand preference. Positively influencing a prescriber's attitude towards a product is essential for effective marketing since there is an association between attitude, intention and behaviour. Numerous studies find that pharmaceutical promotional interactions have an impact on physician's perceptions and their prescribing practices. Yet, many of today's health professionals do not acknowledge their vulnerability to being misled by pharmaceutical marketing. This study demonstrate that Pharmaceutical promotion strategies do not differ greatly from those of other types of marketing, PCRs more likely to use persuasion to highlight the perceived difference of their particular brand. Persuasion often has a subtle influence that is not easy to detect and physicians should receive education regarding the drug promotion techniques used by pharmaceutical companies. Persuasion often has a subtle influence that is not easy to detect. Overconfidence is a major risk factor for being misled. This analysis highlights some critical aspects of persuasive communication by PCRs in promotional visits. It will help prescribers to interpret, evaluate and respond appropriately to manipulative behaviour by PCRs.

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Keywords: Attitude change, persuasion theories, pharmaceutical company representatives, Pharmacist, physician, social psychology.

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Positively influencing an individual's attitude towards a product is essential for effective marketing since there is an association between attitude, intention and behaviour [1, 2]. Pharmaceutical companies use advertising as one of the key elements of their marketing strategies [3] and they attempt to promote their products as effectively as possible by investing considerable financial resources in product promotion. The drug marketplace is characterized by a great number of medicines having similar therapeutic efficacy, safety, price and patient acceptance. Intense competition makes PCRs more likely to use persuasion to

highlight the perceived difference of their particular brand. That is why personal contact with medical practitioners is vital. PCRs are an expensive but extensively used promotional tool. Of the \$ 33.5 billion spent on promotion in 2004, \$ 20.4 billion was outlaid on drug detailing and 12 - 15 billion on free samples [4]. The number of promotional visits by PCRs rose from 120,000 in 1996 to 371,000 in 2004 [5]. Pharmaceutical companies increase the productivity of their representatives by using innovative marketing techniques. One company estimated that to recruit, train and support their PCRs, it spent about

\$ 150,000 annually on a new representative, and \$ 330,000 per PCR specialist [6]. Why are they willing to outlay these amounts on promotion? Obviously because they receive an effective return on their investment. Evidence [7] reported that 80 - 90% of physician worldwide are frequently visited by PCRs and the majority of medical practitioners usually meet with PCRs about four times a month [8].

PCRs employ verbal persuasion techniques while offering information [9] and provide other incentives such as educational and non-educational gifts, free drug samples and sponsored educational events, **Table 1**, [8] to raise awareness of company products and encourage a favourable attitude towards their company and product. In a review of 16 studies, Wazana associated interactions with PCRs and formulary addition requests for sponsored drugs that are not superior to existing formulary drugs, prescribing practices in favour of the promoted drug, rapid prescribing of new drugs, a decrease in the prescribing of generic drugs in favour of newer medications with no demonstrated advantages, and, not least, positive attitudes to PCRs themselves [8]. However, physicians tend to deny their vulnerability toward the influence of pharmaceutical promotion and believe they are adequately educated and remain immune to any inappropriate influence by PCRs promotional activities

[8]. This underestimation of the influence of pharmaceutical companies becomes far more significant when reporting about their own prescribing practices compared with those of their colleagues [10, 11]. This is consistent with research that indicates that individuals are prone to unintentionally optimistic biases in assessing themselves and attribute positive outcomes to themselves but negative outcomes to others [12]. The persistence of physicians' behaviour despite the literature that generally criticises this behaviour raises some questions. How and why are PCRs so influential and able to convince medical practitioners to prescribe their products? What techniques do they employ? Are physicians not fully aware of how persuasive marketing techniques work beneath our threshold of consciousness? Many theories of persuasion from social psychology explain the mechanism of interaction between attitude, cognition, and behaviour. However, there are no published studies that explain PCRs' influence on physicians' in these terms.

To understand the dynamics of persuasive techniques used by, we examine the literature on behaviour change, using theories and concepts from mainstream social psychology to reveal certain aspects of interactions with PCRs. This essay uncovers some of the basic principles of PCR manipulation. In addition, it explains how prescribers may resist persuasive techniques. It is not a comprehensive study of all persuasion theories.

Table 1: Marketing tools of PCRs

| Persuasion techniques (verbal persuasions) |
|--|
| <ul style="list-style-type: none"> • Reciprocation. • Authority • Social validation • Commitment. • Testimony • Magic words. • Appeal to sympathy |
| Learning tools |
| <ul style="list-style-type: none"> • Presentations, round-table discussions, one-to-one encounter • Social networks (Opinion leaders and Colleagues). • Free samples • Repetitive communication. • Manipulative behaviour • Educational material <ul style="list-style-type: none"> ➢ Printed material: Brochures, pamphlets, articles, magazines. Textbooks ➢ Audio-visual promotional material, medical equipment ➢ Branded stationery ➢ Invitations to symposiums, and conferences, and ➢ Subsidies for continuing medical education (CME). |

The Elaboration Likelihood Model

The Elaboration Likelihood Model (ELM) describes how the attitude is influenced by persuasive messages. Propounded by Petty and Cacioppo [13], ELM says that there are two routes through which persuasive messages are processed: the central route and the peripheral route. The central route is depicted by the 'thoughtful consideration and evaluation of the central arguments in the message'. This is a simple and straightforward route (though not necessarily unbiased) wherein the individual carefully analyses and evaluates the arguments and relates the same to information with which they are already familiar. If a physician believes that PCRs present low-quality information or that it is inaccurate, they will reject the promotional message and form a negative attitude about the brand. This is especially likely when the practitioners are specialists in their field and have significant knowledge about the content of the message. Unlike the central route, the peripheral route involves the use of associations or 'heuristic' means, such as catchy tunes, colours, and celebrity endorsements, to guide decision-making, and is less dependent on the cognitive ability of the individual. In fact, the recipient may be unable to fully process all the information received. They may accept the persuader's message simply because it was presented during a pleasurable lunch or because the source is an expert [14]. Cialdini reviewed six principles of persuasion methods used in marketing strategies. Recently, the qualitative study conducted in Ethiopia reported that more than a half of doctors acknowledge the effect of marketing mix strategies of pharmaceutical companies on their prescribing behaviour whether they worked in a public or a private sector [15]. They are, reciprocity, friendship and liking, commitment and consistency, social validation, authority and scarcity [16]. They underpin the peripheral route of persuasion and they can be implemented in promotional visits of PCRs. Roughead *et al.* [17] examined use of these techniques by pharmaceutical representatives when detailing medicines to general practitioners. They found that reciprocation was the most commonly observed method of influence use (in all sixteen visits), social validation claims were used in 41% of the cases and commitment acts were applied in 39% of details. They found that Individual professors or medical specialists, specialist groups and specialist hospitals were cited by pharmaceutical representatives in 14% of promotional visits [17]. If the audience was not convinced through either the central route or the peripheral, then the original attitude will be retained. Central route processing demonstrates the involvement of the recipients in a long-term change in their attitude towards a particular drug, whereas the

peripheral route processing reveals lower levels of involvement and demonstrates that the recipient is disengaged from deeper thought processes [14]. It is important to stress that success in long term change requires that two factors are met: the audience must be highly motivated to process information being given and the recipient must be able to process the message. When physicians have limited time to spare for PCRs and are not interested, the PCR may try use the peripheral means to induce distract the physician's attention. Although the latter route has short term influence on physician's attitudes, reminders and repeated visits create a more lasting change in attitude. The ELM considers that biased processing can occur even when no judgment is made because ability factors can also determine bias. For example, when medical practitioners must evaluate the PCR's information with inadequate skills of appraisal, their ability to process this argument objectively can be compromised. They may fail to appreciate the scientific merits if any, of what they hear. In summary, based on ELM, PCRs use this model to identify the most appropriate route of persuasion to be adopted during their one-on-one promotional visits to medical practitioners.

Yale Attitude Change Approach

The Yale attitude approach [18] has been studied by social psychologists in order to examine the situations in which the recipients are most likely to change their attitudes in response to a persuasive appeal. The effectiveness of the persuasion process depends mainly on the dynamics of communication between the PCRs and the physicians and on the perceived quality of the information. McGuire [19] postulates that the attitude change process takes six steps which include, exposure to information, the attention of recipient, understanding the message, accept the message, repetition, reinforce the message frequently in order to make it memorable and lastly comply with the new attitude. The effectiveness of these steps depends on the credibility, relevance and source of the message, how the message is communicated to the recipient, how the individual reacts to the different messages and how easily the recipient can be persuaded.

Source of the message

Hovland and Weiss [20] found that greater positive attitude change was achieved with credible sources. Expertise, objectivity and trustworthiness characterize both corporate and individual credibility. Experts present information more valid, compelling, and accurate than do non-experts. Lagace *et al.* [21] indicated that physicians responded positively when PCRs behaved ethically and when they showed expert knowledge. Nevertheless, a crucial factor in persuasion is not whether the persuader

really is an expert or trustworthy but whether the audience believe that they are. People accept a message and think it accurate when they trust the source of information [17]. Frequent contacts with PCR's who bring gifts, particularly educational gifts, build relationships with medical practitioners, who come to believe that the PCR provides reliable product information and has relevant skills [22].

Recipient

As noted previously, attitude change may vary based on the recipients' mental effort toward persuasive messages and their individual skills in the way they think about the messages. Jones and associates [23] conducted a qualitative study found that consultants prescribed new drugs less than general practitioners. In parallel, while consultants heard about new drugs from various sources including PCR's, the important source of new drug information for general practitioners was found to be from PCR's. Physicians may have specific reaction to PCR because they have had different prior experience with them. Haayer [24] found that younger physicians were less reliant on commercial information sources and they used drug compendia for updating their information more often than older practitioners. Likewise, McCue and others [25] found that physicians who had been practicing for longer than 15 years were more likely to use PCR's as a source of drug information.

Message

The effectiveness of drug detailing is directly dependent on the quality of drug information provided and this will have a direct effect, positively or negatively, on rational drug prescribing. Beltrami and others [26] found that, in general, positive information about a product seems to be more believable than negative information. However, other studies have reported that negative product information has more potential to influence attitude and decision processes than purely positive information [27]. People assume that marketers will attempt to present the positive aspects and advantages of their products but will downplay the negative information. A study performed in the Sudan [28] found of 160 PCR's interviewed, about one third admitted they did not always mention contraindications, precautions or drug interactions and only 4.3% mentioned the side effects of their promoted products during drug detailing visits. A two-sided message is more persuasive because it appears to acknowledge any controversy and it increases the effectiveness of the communicator. Other studies also found that physicians believed that PCR's exaggerated their products' effectiveness [29, 30]. Recently, a qualitative study reported that the interviewed physicians' attitude towards pharmaceutical company promotion was very positive. The interaction with pharmaceutical

company representatives (PCR's) is highly desired in order to acquire scientific knowledge and free samples of medicines which proves this relationship is reciprocal [31]. Biased and incomplete information easily rouses skepticism toward the message. Repetition can induce favorable judgments without stimulating cognitive evaluation, simply by enhancing the perception of familiarity [32]. PCR's presenting the same message through different media, for example by repeated visits, phone calls, free samples, brochures, branded gifts and sponsored events, increase product awareness that can influence selection drug choice.

Social Cognitive Theory

Bandura [33] posits that behaviour follows a triadic model of reciprocal determinism. Behaviour itself, personal cognition and environmental events all interact multi-directionally. This reciprocity between them does not mean that they have equal strength of influence or their influence occurs simultaneously. In other hand, interventions aimed at changing behaviour should consider personality, the environment, and existing behaviour factors. Social cognitive theory stipulates a set of determinants such as outcome expectancy and perceived self-efficacy. It also determines the mechanism through which the behaviour change includes: direct experience, vicarious experience, verbal persuasion and physiological information.

Outcome expectancy

Outcome expectancies are defined as an individual's judgment about the likely consequences of specific behaviours. In general, Individuals will perform or accomplish intended behaviours when they desire an outcome [34]. The more positive the result is perceived to be the more likely it is that the person will involve in the behaviour. Physicians were more comfortable with accepting educational gifts (conferences, CME) than non-educational gifts (meals) [11]. Likewise, since a drug sample will ultimately be used by a patient, physicians who dispense free samples may believe they are helping patients. Morgan and associates [32] reported that most physicians explained that the main reason for dispensing drug samples was the patient's economic condition (93.5%).

Self-efficacy

Self-efficacy beliefs are the basis of individuals' thoughts, how they feel, how they make choices, and how they motivate themselves [35]. Bandura has suggested that self-efficacy expectation exerts a regulatory influence on outcome expectation. People who are high in self-efficacy are confident of high-expectation outcomes and they also develop deeper interest in activities and are high on

involvement. Bandura [36] outlined four sources of information that individuals employ to judge their efficacy. These include direct experience (performance accomplishments), vicarious learning, verbal persuasion and emotional responses [36].

Direct experience

Direct experience is the strongest determinant of self-efficacy because individuals almost always are confident with their experience and rarely derogate themselves as sources. One develops mastery experiences through engaging in tasks and activities, interpreting the results of their actions, using the interpretations to develop beliefs about their capability to engage in subsequent tasks or activities, and finally acting in accordance with the beliefs created [37]. A strong sense of self-efficacy is developed through repeated successes. The decision-making process can be influenced by retrieval of brand information from memory, and this knowledge can be acquired from sources in the external environment [38]. As part of detailing, PCRs offer physicians a variety of gifts to enable the prescribers a familiarity with particular brand company products. They widely distribute simple items such as pens, notepads, and bearing the trade names of particular drug products. Sigworth and others [39] conducted a surveyed of 164 primary care residents. They found that the majority of respondents (97%) of the respondents were carrying at least one item with a pharmaceutical sign on the chest pocket of their white coats. The goal of these various promotional efforts is to raise potential customers' awareness of the company's branded products and build favor toward these products and to provide prospects with a compelling reason to prescribing company drugs. Saito et al. reported that the extent of involvement in promotional activities was greater among physicians who prefer to ask PCRs for information about new products and who prefer to prescribe brand-name medications when generic options are available [40]. Providing prescription drug samples is one of the major marketing activities undertaken by PCRs [41]. Free drug samples provide direct experience of the required behaviour. Dispensing samples to the patient enables physicians to initiate therapy immediately, to assess the efficacy or tolerability of new treatments, and to use their interpretations of their prescribing outcome to develop beliefs about the product. It encourages cognitive processing which in turn influences further behaviour change. Warriar et al. [42] reviewed 40 studies and found that availability of drug samples influenced physicians' prescribing decisions, increased promoted brand products, decreased prescribing of generic and inexpensive medications and decreased adherence to prescribing practice guidelines. More recently, Ahmed et

al. [43] has used Structural equation modeling (SEM) which is based on behavioral and social theories. The study concluded that marketing tools such as brands of the company product, sales promotion, providing of drug information, efficacy of pharmaceutical company representatives, and characteristics of the patient and pharmacist, have a significant influence on the doctor's decision to prescribe a particular product

Vicarious experience (observational)

Self-efficacy beliefs of an individual are influenced by observations of the behavior of others and the outcome of those behaviors. Opinion leaders and experts are models for an individual's behaviour and learning. The observer will emulate the model's characteristics that they find attractive. Models provide information on behavioural rules which one is expected to imitate. The outcome of learning from these information sources depends on the extent of the attention paid by the observer to the information. Once it is retained, it can transform into the development of new skills. The observer may learn behaviour without performing it immediately. Opinion leaders influence customers' decisions through social communication skills [44]. Vicarious sources of efficacy information are thought to be generally weaker than performance accomplishments; however, their influence on self-efficacy can be enhanced by this fact: the less experience people have had with performance situations, the more they will rely on others in judging their own capabilities. Specialists in a practice also contribute to prescribers' awareness of new drugs through referral and social interactions [45]. Medical practitioners who are sceptical about pharmaceutical industry information may be influenced indirectly by specialist 'opinion leaders' [46, 47]. Ching et al. [48] underlined the fact that opinion leaders played an important role in spreading the most current drug information pertinent to pharmaceutical companies. The marketing efforts of pharmaceutical companies focused upon opinion leaders therefore have a multiplier effect. Thus, indirect learning through imitation is important for pharmaceutical companies in that it enables general practitioners to form patterns of prescribing behaviour quickly at low cost to the company [31]. Pharmaceutical promotions to opinion leaders (specialists) are customarily managed by direct contact through senior PCRs. The 15 largest pharmaceutical companies spend 32% of their total advertising expenses on opinion leaders [49, 48]. Medical peers are also considered to be an important factor in influencing the physician's prescription habits. Goodwin [50] suggests that an individual has the desire to be closely identified by the group and adopt the behavioural norms of the group, irrespective of the level of importance of the decision to

the individual. Prescribing practices of physicians who are working as part of a team become consistent with each other since models of practice are adopted rapidly by colleagues [49]. For example: physicians practicing in groups tend to adopt new drugs more rapidly than do those in solo practice. Kisa's study in Turkey [51] revealed that 75% of physicians were in agreement that the prescribing habits of physicians working in hospitals are affected by the opinions of their department heads and colleagues.

Verbal persuasion

Verbal and social praises and motivations can lead an audience to act as desired. The visits made by PCRs to the medical practitioner's clinics or workplaces are regarded as the most and effective method to convey product information [44, 52]. Intrinsic efforts and persistent persuasion by PCRs can convince physicians and motivate them to act and adopt intended behaviour. Verbal persuasion alone is generally not enough to establish the adoptive behaviour which may be need encouragement. Thus, using marketing influence techniques and persistent persuasion by PCRs can convince physicians and motivated them to act. As noted previously, PCRs employ [15]. Each one subtly reduces independence and objective thinking.

Physicians must understand not only how attitudes are manipulated but also how such persuasive appeals can be resisted. ELM theory suggests that, besides the message variables (strong vs. weak), the response to the persuasive message depends on the involvement of the audience with the issue [14]. Countering persuasive messages involves adequate knowledge, scrutiny of the new information and retrieving or generating contradictory information to disprove it. CDT suggests that people aim to resist attitude change when such change will produce incongruent, or conflicting cognitions [52]. Forewarnings motivate individuals to think of counterarguments prior to exposure to the message. McGuire and Papageorgis [53] suggested that forewarning an audience produced resistance to persuasion by motivating defensive counterarguments to the impending message.

Rational scepticism protects health professional from misleading information that PCRs provide during their promotional visits. Physicians may feel sceptical of PCRs since they provide incomplete or biased information. When prescribers are sceptical they will hold less positive attitudes to the promoted product. However, low scepticism consumers are more prone to be persuaded by peripheral than central approaches as ELM predicts. Burashnikova *et al.* [54] surveyed residents' physicians before and after an anti-promotional teaching course. They found that post-survey revealed a two-fold increase in the number of participants who considered

pharmaceutical promotion to have a major influence on their colleagues' prescribing practice. The number who accepted gifts from PCRs decreased by two thirds and respondents who disapproved of inducements rose from 63.6% to 86.4%. Similarly, Hopper and others [55] have found that after publicity about guideline on gifts, people were more likely to view pharmaceutical gifts as inappropriate.

All these theories have their own starting points and restrictions. Each in its own way provides important information about medical practitioners' behaviours and their interactions with PCRs. Effective health education promotes rational drug prescribing by short-circuiting the marketing techniques of pharmaceutical companies. Guidelines that outline acceptable interactions decrease the influence of promotion on prescriber behaviour.

Conclusion

Pharmaceutical promotion strategies do not differ from those of other types of marketing. Academic theories uncover and explain a number of social variables concerning PCRs' interaction with physicians. Persuasive techniques play an essential role in creating and influencing a positive physician's attitude towards a pharmaceutical product. To minimize harm to patients, understanding the tactics of persuasion is essential.

Author's contribution

Both authors equally contributed.

Conflict of interest

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