“THE DIFFERENCE IN ATTITUDES BETWEEN GENERAL PRACTITIONERS AND PHARMACISTS TOWARDS THE USE OF GENERIC MEDICINES”

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This report is not confidential and may be used freely by the Graduate School of Business.

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We certify that, except as noted above, the report is my own work and all references used are accurately reported in footnotes:

Signed:

Jacques Badenhorst

Gavin Jones
ABSTRACT

Healthcare funders in South Africa are under increasing pressure to curb spiraling costs, particularly those of medicines, which account for 28% of expenses incurred by private medical aids. Current legislation under consideration by parliament, namely the Medicines and Related Substances Control Act (Act 90 of 1997) aims to address this problem by, amongst other changes, making it compulsory to offer the substitution of ‘ethical’ drugs with less expensive generic drugs. However, many doctors are not in favour with the proposed regulations.

This study will examine whether there is a differing of opinions between pharmacists and doctors towards generic medications in general. It will also examine the attitudes of these two professions towards the practice of generic substitution as indicated by the proposed changes to legislation. The study will further examine the possible influences on the prescribing or dispensing habits of pharmacists and doctors, as well as evaluating the latter’s knowledge of drug prices.

GLOSSARY
**Bioequivalence:** the active ingredient of the generic drug is absorbed at the same rate and to the same extent as for the innovator drug. A generic drug is considered to be bioequivalent to its branded counterpart if the rate and extent of its adsorption is between 80 and 125% of the branded product.

**Pharmaceutical equivalence:** drugs with identical amounts of the same active ingredient in the same dosage and route of administration, which meet the standards of strength, quality, purity and identity.

**Ethical / Innovator / Branded drug:** the first drug of its kind, discovered by scientific research, and protected by a patent.

**Generic / Multisource drug:** copy of an original patented drug, containing the same active ingredients and therefore comparable in quality, strength and therapeutic effectiveness to an original drug.

**Food and Drug Administration (FDA):** one of USA’s oldest consumer protection agencies whose mission is to promote and protect the public health by helping safe and effective products reach the market in a timely way, and monitoring products for continued safety after they are in use.

**Over the counter (OTC) medication:** medicine one can buy at a pharmacy / drug store without a doctor’s prescription.

**Medicine Control Council (MCC):** an independent and impartial statutory council that exercises its powers in terms of the Medicines and Related Substances Control Act (101 of 1965). The MCC approves all medicines based on quality, efficacy and safety, and the control thereof.

**Physicians / Doctors / Medical Practitioners:** for the purpose of the report, are all equivalent to a General Practitioner (GP).
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1 INTRODUCTION

1.1 BACKGROUND TO RESEARCH

Health care worldwide is facing a crisis. Medicine costs are spiraling out of control and both governments and the private sectors are finding it impossible to curb these costs. Not only are privately insured patients reeling from the increases in insurance premiums, but governments responsible for health care provision are also finding it difficult to deliver affordable services. Due to the political nature of health care, which is seen by many as a basic human right, participants in the health care industry are under mounting pressure from consumers to address the affordability problems in the industry.

There are several causes for the rising medicine bills that insurers and governments face. Breakthroughs in pharmaceutical research have brought numerous new treatments to the market. The high cost of pharmaceutical research has forced pharmaceutical companies to recoup their investments in the form of high prices for new drugs. Also, consumers are increasingly literate concerning issues relating to their health and this has further driven the demand for the new treatments. The global demographic shift that has seen populations grow older, has also been a driver in the spiraling cost of medicine.

One way in which role players are seeking a solution to the problem is by forcing patients and their doctors to make use of generic rather than ‘ethical’ medicines. Generic medicines are seen to be equivalent in quality to, but far cheaper than, their original counterparts. The assumption is made that the rational prescribers will make use of the cost-effective alternatives that exists to expensive ‘ethical’ medicines. However, despite the availability of generic equivalents for more than a decade in South Africa, less than 20 % (by volume) of all drugs sold in the private sector are generic. This compares with 60 % in the United States, a country that faces far fewer constraints on its resources than South Africa.

Several reasons can be given for the low level of generic use. Firstly, unlike the United States and many other countries in the world, South African pharmacists are not allowed to substitute an ‘ethical’ drug with a generic drug without the
permission of the prescribing physician. Although anecdotal evidence suggests that pharmacists sometimes do substitute ethical with generic drugs, they are not legally sanctioned to voluntarily provide customers with cheaper generics.

Secondly, due to the heavy marketing efforts of the ‘ethical’ or branded drug companies that specifically target the prescribing community, doctors have persisted in prescribing these drugs despite the availability of more affordable alternatives. Doctors are often also not conscious of the cost implications that their prescribing habits hold for their patients.

Thirdly, generics are perceived by some members of the health care fraternity to be of inferior quality when compared with the original branded drugs. Anecdotal evidence exists that pharmacists as a group, view generic medicines and the practice of generic substitution in a more positive light, whereas doctors are more likely to trust the ‘ethical’ brands of drugs, and oppose substitution.

1.2 Problems Addressed & Purposes of Dissertation

This study will investigate whether there is a difference in the views that pharmacists and doctors have towards generic medicines. It will attempt to further understand aspects of the decision making process relating to, on the one hand, the writing of prescriptions by doctors and, on the other, the dispensing of medicines by pharmacists.

The study also attempts to evaluate the views that pharmacists and doctors have towards the proposed new legislation that will make generic substitution mandatory.

Aspects of the study will investigate the marketing efforts of the ‘ethical’ drug companies aimed at doctors and what the effect of these have on the prescribing habits of these health care professionals.
1.3 CONSTRAINTS AND LIMITATIONS PLACED ON RESEARCH

We wanted to obtain large samples of doctors and pharmacists (more than 150 from each group) and were hoping to solicit their responses at meetings of local societies. However, there was reluctance on the part of the various committees to allow us to distribute our questionnaires at these meetings and we had the onerous process of personal delivery, which was both costly and time consuming.

The limitations of the study were largely related to the poor number of responses obtained and extra effort was expended in trying to obtain responses. There may also be a bias in the fact that a number of doctors surveyed were known to the researchers and thus fell into the younger age group which had not practiced for as long as some of the older doctors and may be more predisposed to the use of generic medicines.

Only doctors and pharmacists in essentially higher LSM areas were surveyed and their views may be different to those practicing in lower socio-economic areas.

1.4 LAYOUT OF THE REPORT

The report first introduces the background to the area of the research and why the researchers chose to investigate this topic. This is followed by a detailed literature review which compares the South African context to that of the USA.

The methodology discusses the questionnaires in some detail, as well as giving a brief summary of the various statistical tests used.

The next section analyses the data derived from the questionnaires and reconciles the extra insight gained from the focus interviews with the results of the analyses.

The final section gives an overall summary of the findings from the research. This is followed by the appendices and references.
2 THE PROBLEM IN MORE DETAIL

A generic drug is a copy of an original patented drug, containing the same active ingredients and therefore comparable in quality, strength and therapeutic effectiveness to an original drug. A generic copy of an original drug can be sold only after the patent on the brand-name drug has expired. Because generic drug companies don’t incur any research and development costs, generic drugs cost much less than the innovator drugs of which they are copies.

In the USA, the Approved Drug Products with Therapeutic Equivalence Evaluations, known as the “Orange Book”, indicates which multisource drug products are therapeutically equivalent and identifies generic alternatives for use in patient care. The FDA (Food and Drug Administration) classifies drug products as therapeutically equivalent if they are pharmaceutically equivalent and bioequivalent. A two-letter coding system is used to evaluate drug products for therapeutic equivalence and to provide additional product information:
1st letter: either “A” or “B” denotes therapeutic equivalence
2nd letter: denotes additional information based on the FDA’s evaluation

More detailed information on the coding system can be found in appendix 1 (Vasquez, C and Vasquez, R, 2000).

Despite the fact that generic medicines have been widely available in South Africa for more than a decade, less than 20 % of prescriptions written in the private sector are for generic medicines. For a developing country that faces greater health care cost constraints than the U.S., this seems to be paradoxical. It appears as though doctors have been reluctant to prescribe cheaper but equally effective generic drugs. This reluctance could be due to the successful marketing of branded drugs by large pharmaceutical companies, quality concerns about generic medicines and also a general cost-insensitivity by doctors. On the other hand, pharmacists have been perceived to be more positively disposed towards generic medicines with anecdotal evidence pointing towards frequent generic substitution by a pharmacist on the grounds of greater cost-efficiency.
The Medicines and Related Substances Control Act (Act 90 of 1997) currently under consideration aims to address the problem of low generic medicine use, by allowing pharmacists to provide for the substitution of expensive branded drugs with cheaper generic copies where available. With these changes to the law and the anticipated resultant increase in the use of generic medicines, it is hoped that patients will be able to save on their drug bills.
3 LITERATURE REVIEW

3.1 OVERVIEW OF THE PHARMACEUTICAL INDUSTRY IN THE USA

Global pharmaceutical sales are predominantly in industrialised regions (see table 1) and for the purpose of this research report, we will be comparing South Africa with the American pharmaceutical industry (Gray, A & Matsebula, T, SAHR summary, 2000).

**Table 1:** Breakdown of global pharmaceutical sales by region

<table>
<thead>
<tr>
<th>REGION</th>
<th>SALES</th>
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<tbody>
<tr>
<td>North America</td>
<td>46.7%</td>
</tr>
<tr>
<td>Europe</td>
<td>24.8%</td>
</tr>
<tr>
<td>Japan</td>
<td>11.3%</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>1.3%</td>
</tr>
<tr>
<td>Indian sub-continent</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

Over the last 100 years, the issue of drug product purity has been a focal point of American pharmacy and in 1955 and 1956 resolutions were passed condemning pharmacist substitution of one brand of drug for another. These antisubstitution laws required pharmacists to dispense the exact drug product prescribed – indicated with either a brandname or a generic name plus specified manufacturer – unless only a generic name was provided. Not only did these laws limit the distribution of poor quality drug products, but they also capped the production of generic medicines, thus preserving the brandname product’s market share well beyond its 17-year patent and thereby allowing a monopoly to develop (Ascione et al, 2001)

The resulting grossly inflated pricing was not sustainable, and in 1975 Drug Antisubstitution Laws were repealed and replaced by drug-product substitution laws which allowed pharmacists to dispense a generic drug, even when the prescription called for a brandname drug. There was a gradual increase in generic substitution, from 5.5% in 1980 to 9.5% in 1984, resulting in an estimated savings to the public of $200 million.
In 1984 further legislation was passed that ushered in the beginning of the generic drug era. The Drug Price Competition and Patent Term Restoration Act, or Hatch-Waxman Act as it was known, was an attempt by Congress to balance the interests of the generic drug industry with those of manufacturers of innovator drugs. The Act contained 2 sets of changes:

i. First, it eliminated the duplicative tests that had been required for a generic drug to obtain approval from the Food and Drug Administration (FDA). Before 1984, manufacturers of generic drugs were required to independently prove the safety and efficacy of their products. The Hatch-Waxman Act streamlined the process for approving generic drugs by requiring that manufacturers of generic drugs only demonstrate “bioequivalence” rather than the more costly testing for safety and efficacy, if they could show that their generic drug was identical or so similar to the innovator drug.

ii. Second, it established patent-term extensions for innovator drugs, because part of their time under patent is spent in the clinical trials necessary for FDA approval. The patent extensions were intended to offset part of the patent term used up during the approval process.

The immediate impact of the Hatch-Waxman Act was seen with a resultant increase in sales of more than $2 billion in generic products during the first year after the law was signed. The generic drug industry’s prescription drug market share increased from 8% in 1984 to 33% in 1989. By 1996, 43% of all drugs sold in the United States as measured in total countable units, were generic. The latest figures show that 60% are generic.

Unfortunately for the generic drug industry, a scandal developed in 1987, whereby a number of generic drug manufacturers were found to be involved in unscrupulous activities such as bribing FDA officials and even submitting the innovator manufacturer’s product for testing instead of their own generic drug. Public and professional confidence was affected and a survey in 1989, compared with a similar one in 1984, showed that 15% fewer physicians approved of generic drug use, resulting in a sharp decline in the sales of generic drugs.
However, over the last 10 years, the rising cost of health care, the increasing demand for prescription drugs (indicative of an ageing population), and the emergence of managed care, have gradually offset remaining concerns about the generic drug scandal. Generic drug revenues have increased as sales have risen, and the size and power of the industry has grown.

While the primary source of conflict over the use of generic drugs is economic, another source is professional. The pharmacy profession was one of the first groups to promote generic drug use because it offered pharmacists the opportunity to exercise their professional judgement during the medication dispensing process. This was initially opposed by the medical profession because of concerns about interference with the physician’s judgement and relationships with patients (Ascione et al, 2001).

Bernard, M and Santell, J (2001) found that spending on prescription drugs was estimated to be over $112 billion in 1999 and accounted for more than 8% of total national health expenditure. It is anticipated that by 2008, drug expenditure will increase to $243 billion and will consume 12.6% of total health care spending in the USA. Spending on prescription drugs has been increasing at a rate of 12% per year and is predicted to continue increasing at an annual rate of 10% for the next eight years. IMS Health, a healthcare consumer research organization, has projected an average global sales growth of 8.1% per year to 2004, expanding the global market to $506 billion.

There have been many proposed methods to control the cost of drugs. Some examples are to reduce R&D spending, use of only generic drugs when available, restricting of company advertising and detailing (the pharmaceutical industry spent $13.9 billion to market drugs in 1999, 50% more than 1996), imposing price controls, pricing drugs on the basis of ability to pay, and equalizing drug costs throughout the world(Bernard et al, 2001). However, none of them are ideal.
The bottom line is that manufacturers of innovator drugs invest heavily in research and development costs (R&D), hoping to recoup that investment in profits from future sales while a drug is still under patent protection. Generic pharmaceutical companies on the other hand, only copy already discovered molecules and therefore don’t carry the same heavy research or ‘discovery’ costs. The Congressional Budget Office estimated that by substituting generic for brand-name drugs, purchasers saved roughly $8 billion to $10 billion in 1994. The use of generic drugs has therefore helped to limit national spending on prescription drugs in the United States.

3.2 **OVERVIEW OF THE PHARMACEUTICAL INDUSTRY IN SOUTH AFRICA**

The cost of drugs in South Africa is a contested issue. (Gray et al, 2000). The South African pharmaceutical industry is very competitive with a total annual turnover of pharmaceutical companies being approx R10,4 billion. Over much of the past decade, the pharmaceutical industry achieved double-digit annual growth. In recent years, however, growth has been affected by increased competition from overseas manufacturers of generic drugs, the introduction of the Essential Drugs List in the public sector, and introduction of restrictive lists and formularies by some stakeholders. In 1999, the private sector saw an increase of 15% in value (-2% in volume), with the public sector growing 20% in value and 3% in volume (Wesgro, 2000).

Public health care accounts for most of the demand (84% of the population) but only a small percentage of the pharmaceutical sector's value (approx 24% of pharmaceutical sales). Private health care accounts for most of the pharmaceutical sales (approximately 76%), is funded privately and by medical insurance schemes. The per capita expenditure on prescription drugs in the private sector is approx R800-00 compared with R60-00 per person in the public sector. This excludes over-the-counter (OTC) medicines sales, which may constitute only 6% of the total value (South Africa Business Guidebook 2001 / 2002).
Dispensing doctors are responsible for 15% of drug sales and the alternative medicines market is growing at 15% per annum. It is anticipated that the government's primary health care strategy will impact positively on the industry, and because the government's health plan focuses on self-medication and a health lifestyle, OTC medication will play an important role.

Table 2: Estimated turnover in 1999 (Wesgro, Cape Sector Factsheet, 2000)

<table>
<thead>
<tr>
<th>PRIVATE SECTOR</th>
<th>Prescription drugs</th>
<th>R6.5 billion</th>
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<tbody>
<tr>
<td></td>
<td>Original ethical drugs 80%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Generics 20%</td>
<td></td>
</tr>
<tr>
<td>Self-medication (OTCs)</td>
<td>Sub-total</td>
<td>R3.9 billion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R10.4 billion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PUBLIC SECTOR</th>
<th>Prescription drugs</th>
<th>R2.4 billion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original research drugs 50%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Generics 50%</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>R12.8 billion</td>
</tr>
</tbody>
</table>

South African pharmaceutical companies, which make up 43.1% of the local industry, operate alongside local branches of most major international pharmaceutical companies. The largest local players are Adcock Ingram (21.2% market share) and Aspen (13.3% market share). A consequence of the need for innovative new products has led to a number of mergers among the multinational pharmaceutical companies. Aventis has merged with Adcock Ingram, while Glaxo Welcome has merged with SmithKline Beecham. Another trend amongst the multinationals has been to reduce the scale of their manufacturing plants in SA. Many multinational companies in this sector prefer to operate 'centers of excellence' that export the product to the rest of the world. Other large multinational pharmaceutical companies present in SA are Warner Lambert, Roche, MSD, Novartis and Janssen-Cilag (South Africa Business Guidebook 2001 / 2002).
Medicines are distributed from manufacturers via wholesalers to community pharmacies, although some products go directly from the manufacturer to the dispensaries of hospitals, clinics and some commercial pharmacies. The figure below shows a traditional distribution chain for medicines, which results in an average 81% mark-up in price from the manufacturer to the patient. Note that the “retailer” is either a pharmacist in a retail pharmacy or private hospital, or a dispensing doctor (South Africa Business Guidebook 2001 / 2002).

![Distribution Chain Diagram]

All medicines that make claims to heal or treat diseases are registered through the Medicines Control Council (MCC). The registration of medicines is currently being modified to include medicines of natural origin (homeopathic), as well as traditional medicines. The use of homeopathic medicines is increasing, and traditional medicines are being recognized as playing an important role in medical treatment. The Health Department has compiled an Essential Drugs List, based on the World Health Organization's (WHO) requirements and complemented by SA's own requirements. A therapeutic formulary has also been launched by the SA Medical Association, which includes the WHO list. These lists form the basis of all medicines in state hospitals, reducing the choice of medicines, and will eventually influence prescription habits in private practice.

In South Africa, drug prices have been increasing by approximately 20% a year even before the depreciation of the Rand in December 2001. In the public sector, drug costs are second only to personnel costs and in the private sector, drugs are the second biggest cost driver. The pie chart below gives a breakdown of how costs are apportioned for Medscheme, South Africa’s largest medical scheme administrator.
The 28% of costs that are apportioned to medicines in private health care in SA compares with developed countries like the USA, UK, Australia and Germany that respectively spend 9%, 10.3%, 6.2% and 19.2% of their health care budgets on medicines (Business Times, 1999). In the light of these statistics it is therefore surprising that less than 20% of all prescriptions written in the private sector in South Africa are for generic drugs. By encouraging the use of generic medicines, health care funders can make large savings on their annual medicine bills. However, despite calls on doctors to replace the use of expensive medicines with cheaper generic alternatives, they have failed to do so.

3.2.1 Medicines & Related Substances Control Amendment Act 90
The price of drugs is a major contributing factor to the high cost of private health care and pharmaceuticals accounted for 45% (R16 billion) of medical aid payouts in 2000 (Bisseker, C, 2001). In the USA, 60% of pharmaceutical sales are generic products, compared with SA which currently uses about 20% of generic drugs. The generic drug market is however expected to grow significantly in the next few years. The Medicines & Related Substances Control Amendment Act, which has generally been supported by the pharmaceutical societies but rejected by the Medical Association of South Africa (MASA), will go a long way towards reducing drug prices.
The abstract from the actual act can be seen in appendix 3, but the key points of the act which relate to this report are listed below.

The Act:

i. will provide for procedures that will expedite the registration of essential medicines, and for the re-evaluation of all medicines after five years

ii. will provide for measures for the supply of more affordable medicines in certain circumstances

iii. will prohibit bonusing and sampling of medicines

iv. will provide for generic substitution of medicines

v. will provide for the establishment of a pricing committee

vi. will regulate the purchase and sale of medicines by wholesalers

In summary, Act 90 means that pharmaceutical companies will no longer be allowed to offer kickbacks and that the MCC will be restructured in order to streamline the drug registration process. The Act places a legal obligation on pharmacists to inform customers about cheaper generic options and offer substitution of “ethical” drugs, unless expressly forbidden to do so by the prescribing doctor.

In the future, the government will set drug prices (factory exit price) and pharmacists, no longer allowed to add a percentage mark up, will be able to charge a set fee per item dispensed (excluding medicines in schedules 0, 1 and 2 – see appendix 2 for details on scheduled drugs in SA). The Act also bans doctors from dispensing and unless the need to dispense can be proven, doctors will only be allowed to dispense under certain conditions with special permission.
3.3  PHARMACEUTICAL MARKETING

3.3.1  Advertising Spend

The pharmaceutical manufacturing industry is a highly profitable one. On average, profits are about 16% of sales, which makes it one of the most lucrative industries worldwide (Pappas 1992). Between 1988 and 1992 the earnings per share of the ten largest US based drug companies grew at an average of 18% compared to the S&P 500’s 7% (Tully, 1993). However, despite these high profits, the industry remains competitive and risky. The pharmaceutical industry spends the highest share of sales of all industries on research and developing costs, namely 16.8%. Drug companies depend on expanding their product sales to ensure that their investments in developing new drugs are recouped. Because of the competitive nature of the industry and the increasing threat that generic drugs pose, the marketing spend of the ethical pharmaceutical companies has been rising continually. The proportion of sales spent on marketing doubled from 12% in 1980 to 24% in 1990 (The Economist, 1990). By 1997, it was estimated that pharmaceutical companies in the USA were spending approximately 35% of their sales revenues on marketing (Devlin, 1997). This amounted to more than $11 billion in 1997, of which $5 billion went directly to pay sales representatives. It is because of their heavy marketing that ethical drug companies have been able to protect their brands against the alternatives offered by their generic competitors. The ethical drug companies have been spurned on to advertise by the obvious efficacy of their marketing methods.

3.3.2  Marketing Efficacy

Prescribing differs from typical marketplace encounters in that an agent (the prescriber), who does not experience the economic consequences of the purchase, chooses the product. The promotional activities of drug companies are therefore mainly aimed at the prescribing agents, name the physicians. The extent to which the interactions between drug companies and physicians influence the latter’s prescribing habits have been well established. Wazana (2000) found that the relationship between physicians and the pharmaceutical industry and its representatives impacts on the knowledge, attitudes and behavior of physicians.
The interactions between pharmaceutical companies and physicians can be divided into several categories with the effect of each established by studies. These are:

i. Visits by pharmaceutical representatives
ii. Gifts, including: samples, industry-paid meals
iii. Funding for travel or lodging to attend symposia
iv. Continuing Medical Education (CME) sponsorships
v. Honoraria and Funding Research

3.3.2.1 Interactions with Representatives

Drug companies often interact with physicians in the form of visits by their sales representatives. One of the purposes of these visits is to make it more pleasant and effortless for the physician to obtain information from the drug company than to obtain this information from other sources. Representatives of drug companies dispense promotional brochures, medical literature and verbal information about their products, as well as free samples. The sales representatives thus form a crucial link in the information chain between clinicians and drug companies. In the US alone there are more than thirty thousand pharmaceutical company representatives – one for every 15 doctors (McKinney, 1990). Of the 35 % of sales that ethical drug companies spend on sales and marketing, nearly 20 % is spent on the sales force alone (Devlin, 1997).

Doctors are often dependent on sales representatives for information about the drugs that they prescribe. Studies showed that GP’s are especially dependent on visits by sales representatives – more so than specialists. The majority listed sales representatives as an important source of information (Talbot-Montgomery, 1997). Drug companies, and to a lesser extent medical journals and colleagues, are a doctor’s main source of information about a new drug.
Despite physician’s beliefs to the contrary, interaction with pharmaceutical representatives has a profound effect on their attitudes to drugs. For example, Chren (1994) found that there is a strong association between a physician behavior, namely the request that a drug be added to a hospital formulary, and the doctor’s interaction with drug company representatives. Most of the requested drugs presented little or no therapeutic advantage over existing formulary drugs even though the merit of the requests was not related, by the requesting physicians, to interactions with the pharmaceutical industry. Furthermore, interactions with pharmaceutical representatives were found to impact on the prescribing habits of physicians in terms of prescribing cost, non-rational prescribing and awareness and preference of new drugs (Wazana, 2000). More importantly, it was found that physicians who relied most on drug company representatives for information on drugs were the least likely to prescribe or recognize the names of generic drugs (Bower, 1987).

3.3.2.2 Gifts

Gifts to physicians have for many years been the cornerstone of pharmaceutical marketing. The most common gifts given by pharmaceutical companies are undoubtedly the so-called ‘reminder’ items. These are normally items of minimal value, such as pens, pads of paper and toys and all of which prominently display the name of the drug or company. These gifts are often offered to physicians in exchange for their time and for giving attention to promotional material presented by a pharmaceutical representative.

Although it is uncommon for the dispensing of gifts to be directly linked to the prescribing practices of physicians, it has occurred in a number of cases in. For example, Wyeth-Ayerst Pharmaceuticals established a program in 1986 in which doctors were awarded ‘frequent flyer miles’ for writing prescriptions for one of the company’s hypertension drugs – every fifty prescriptions written earned the physicians one round-trip ticket anywhere in the US. Only after legal pressure was put on the company was the program discontinued in 1987 (Tanouye, 1994). Due to a lack of previous research the extent to which local pharmaceutical companies in South Africa have made use of such direct perks linked to prescriptions are unknown. However, anecdotal evidence exists that this does occur however. For example, a
company that no longer operates, Garric Pharma, was found to be giving shares in the company to the wives of doctors, in exchange for writing prescriptions.

Although most doctors deny that gifts could influence their prescribing habits and are equivocal about the ethics of such a practice, Caudill (1996) found that they admitted that without such gifts, their interactions with pharmaceutical representatives would be reduced.

Apart from the ‘reminder’ items, physicians often receive samples of the new drugs that pharmaceutical companies are launching onto the market. Studies have shown that receiving such free drug samples was associated with an awareness, preference and rapid prescription of the new drug and a positive attitude toward the pharmaceutical representative (Peay, 1988).

Gifts are also often bestowed on physicians in the form of industry-paid meals. These are often offered in larger hospitals and clinics and mostly take the form of snacks or sandwiches that are provided to medical students and physicians, who enjoy the meal as they listen to a sales presentation from a pharmaceutical company representative. Chren et al (1994) found that physicians benefiting from sponsored meals were more likely to request formulary additions of the sponsoring company’s drugs.

### 3.3.2.3 Funding for travel or lodging to attend symposia

Drug companies frequently sponsor physicians to attend either ‘dinner meetings’ or symposia. These conferences or symposia are often held at attractive locations and sometimes the physicians are flown in with their spouses for a weekend of presentations, recreation and some entertainment, all at the sponsoring company’s expense (Gorski, 1990). Chren (1994) found that accepting funding to attend a symposium also influenced doctors’ prescribing habits in the form increased hospital formulary addition requests for the sponsor’s drug. This interaction was also found to impact hospital prescribing practices several years later.
3.3.2.4 Continuing Medical Education Sponsorships

Continuing medical education (CME) is one area of medical communication that is massively subsidized by the drug industry. Regulations were established in the early 1970’s in the US and more recently in the late 1990’s in South Africa, which required that all doctors obtain a minimum amount of accredited training each year. This was necessary in order to maintain their professional registration with the respective professional registration bodies in those two countries. CME conferences, of which several thousand per year are held worldwide, grew out of these requirements. In exchange for their financial support of CME meetings, drug companies are often given the privilege of selecting speakers and sending representatives to the meetings to promote their products (Goldfinger, 1987). While direct influence by drug companies over the content of any speaker’s statements are highly unlikely, the sponsors often do engage in selecting expert speakers with predictably favorable views on their products (Bowman, 1986). Bowman et al (1988) found that not only was the content of presentations influenced at such sponsored events, but also that the prescribing practices of attendees of such events were changed in favor of the sponsor’s drug.

3.3.2.5 Honoraria and Funding Research

Pharmaceutical companies often sponsor physician research at both academic and practice levels. For example, a company may enroll a physician to assist with so-called ‘Phase IV’ clinical trails. Phase IV trails are conducted with large numbers of patients, after a drug is brought to market, ostensibly for the purpose of detecting rare side effects which might have been overlooked in smaller pre-marketing studies. However, these simple studies are often used to directly increase product sales by involving large numbers of prescribing physicians who increase their prescribing as a result of participating in the study (Rose, 1997).

Receiving honoraria or research funding is not only associated with changes in the prescribing habits of participating physicians, but there is also some evidence that drug company funding influences the outcome of clinical research. Davidson (1986) found that drug company-supported clinical studies were more likely to favor the sponsor’s drugs than the studies supported by other sources.
3.3.3 Physicians’ attitudes toward the interaction with Representatives

Physicians believe that their extensive training and access to numerous commercial and academic sources of information about drugs make them well equipped to make objective treatment decisions, regardless of the promotional material they have been exposed to. A study by Gibbons (1998) found that most physicians surveyed denied that gifts could influence their behavior and were equivocal about the ethics of such practices. However, despite physicians’ belief that their prescribing habits are independent from their exposure to promotional material, many studies, including Avorn (1982), found that heavy promotion of drugs, even if contradictory to published data, could influence physicians’ beliefs about drugs.

Furthermore, physicians believe that drug companies provide accurate information about their drugs and are equivocal in their beliefs that company representatives could provide accurate information on established or alternative drugs (Caudill, 1994). However, a study found that up to 62% of drug advertisements in major medical journals in the USA contained information that was incorrect and would require major revision (Wilkes, Doblin and Shapiro, 1992).

While physicians believe that sales representatives provide accurate information about their drugs, this is often not the case. Ziegler et al (1995) found that most presentations of sales representatives contained inaccurate information. 13% of all statements made by sales representatives were inaccurate and all of these were favorable regarding the drug promoted. Roughead (1996) found that sales representatives consistently failed to mention side effects, contra-indications and interactions in about 75% of their visits. They also extended or changed the indication for the use of their promotional drug about 25% of the time.
3.4 Cost Insensitivity

Another reason why physicians don’t prescribe generic medicines as frequently as would otherwise be the case, could be the fact that they are often unaware of the costs of the drugs that they prescribe. The cost benefits of generic medicines can be quite substantial and patients can save about 20 - 50 % of the price of a prescription. Since many generic medicines are identical to their branded counterparts, it would be more logical for price sensitive consumers to make use of the less expensive generic medicines. Compliance with medical therapy is often compromised because patients can’t afford to pay for medications. Inadequate physician knowledge of drug costs may unwittingly contribute to this problem. While physicians are inundated with information about the availability and efficacy of drugs, they receive little information about actual drug costs in medical school, in residency training, or in their practices.

Glickman (1994) found that substantial knowledge deficits exist in physicians’ understanding of the economic implications of the prescriptions they write, with a marked trend toward a underestimation of the prices of more expensive drugs and overestimation of the prices of less costly drugs. Reichert (2000) however, found that physicians were predisposed to being cost conscious in their prescribing habits, but lacked the accurate knowledge about the actual costs and insurance coverage of drugs.

The knowledge of the fact that physicians are often not cost conscious is important for several reasons. Firstly, the sub-optimal usage of generic medicines contributes to the inefficient use of health care resources and the rising pharmaceutical bill that insurers and governments have to foot. Secondly, because many patients must pay for the full cost of their medications, expensive prescriptions may go unfilled resulting in a compromised outcome for the patient.
3.5 Physicians’ Views on Generic Medicines

Prior to the adoption of the amended Medicines and Related Substances Control Act of 1997 that provides for voluntary generic substitution, deciding what medications will be prescribed and ultimately dispensed was generally the responsibility of the physician or other prescriber. Increasingly however, this decision has become a shared responsibility, with several groups exerting influence. Health insurers, managed-care companies, pharmacists and patients themselves have increasingly become involved in the drug selection process. However, until the provisions of the law are fully implemented, it will still largely be physicians’ views of drugs that will influence the outcome of the selection process.

Individual physicians have expressed strong opinions about generic medicines through the years. Banahan (1997) found that opinion regarding substitution could generally be divided into two subgroups namely those that were pro-substitution and those that were anti-substitution. Fewer than half (43%) of physicians were found to be pro-substitution. He also found that the strength of conviction differed between the two groups. Pro-substitution physicians were generally less committed to their convictions and expressed only ‘fairly’ high support for generic medicines. In contrast, those in the anti-substitution groups had very strong feelings against this practice. However, generic prescribing behavior among the anti-substitution group is also influenced by factors other than the prescriber’s personal beliefs about generic medications, as they were found to be willing to prescribe generic medications if there was a large price differential between a branded drug and its generic equivalent. An analysis of the opinions of physicians on generic medications should therefore include the fact that there could be a potential difference between the reported and actual behavior of physicians who are anti-substitution.
3.6 Physicians Knowledge of Generic Medicines

Physician’s knowledge of generic medicines can influence their prescription behavior. Incorrect, or even a lack of knowledge about generic medicines can lead to inaccurate perceptions about these drugs and form the basis of either a lack of, or support of, the use of generic alternatives. Increased knowledge about generic medicines has generally been found to correlate with their increased prescription by physicians (Bower, 1987).

In one study, Banahan (1997) found that 64 % of physicians had no knowledge of issues relating to the bioequivalence of generic medicines. Another finding was that many physicians were making decisions regarding generic products on the basis of inaccurate perceptions and beliefs that assumed more rigid standards for bioequivalence than what was required by the drug registration authorities.

Another good indicator of physicians’ knowledge of generic products is their ability to recognize products by name. Bower (1987) found that physicians generally could not identify all generic medication by name when given a list that contained the names of ten branded and ten generic drugs. Furthermore, it was established that there was a strong positive relationship between the recognition of names and the frequency of prescribing generic medicines in general, suggesting increased use with increased knowledge of generic medicines.
3.7 Pharmacists’ views on Generic Medicines

With the implementation of provisions of Act 90, pharmacists will increasingly be involved in the drug selection process. According to the new legislation, pharmacists will be legally obliged to inform patients where cheaper generic drugs exist to fill their scripts. In future, the views that pharmacists have of generic medicines will become more important to drug sellers, who will rely more and more on pharmacists to dispense their drugs. Drug manufacturers generally recognize that pharmacists already wield considerable influence over the drugs dispensed to patients, as well as the fact that pharmacists are the health care professionals that have the most knowledge about drugs (Cassel, 2001).

In terms of their attitudes towards generic substitution, Banahan (1997) found that pharmacists supported this practice to a greater extent than physicians. Where the attitude of physicians could be clearly divided into those who were pro substitution and those who were anti substitution, Banahan found that pharmacists could be classified into those that were definitely pro-generic, those that were cautious yet supportive, and those that were indifferent. Unlike doctors, no grouping could be found that were overtly anti-generic.

One component of pharmacists’ views on generic products is the pressure they feel from managed care organizations and medical funds, to increase the use of generic medications. Not only do pharmacists feel that they were pressurized by these organizations to increase the use of generic medications, but they also feel that they were sometimes forced by managed care organizations to dispense a generic product, when it was their professional opinion that substitution was not in the best interest of the patient (Banahan, 1995).

The important factors pharmacists use in selecting a product are quality, price and supplier consistency (Klink, 1996). Although price is important, since cost is often the reason a generic medicine is considered in the first place, when it comes to choosing a brand of generic, pharmacists often use quality as the most important criteria. To judge the quality of a generic medicine, pharmacists consider the manufacturer’s reputation, previous experience with the company and their own professional judgement to be the top criteria (Smith, 1991).
4 METHODOLOGY

4.1 PROCEDURE FOLLOWED IN GATHERING DATA

4.1.1 Questionnaire
Two separate questionnaires were generated, one for pharmacists and one for general practitioners, in order to:

i. determine their attitudes towards generic medicines, and

ii. gauge their responses to the proposed changes to Act 90

The questionnaires were essentially identical and divided into 4 sections. The only differences were the distinction between prescribing (doctors) and dispensing (pharmacists), and the inclusion of an extra section for doctors:

Section A:
This section determined personal details such as age, number of years in practice and university of qualification, as well as a question for doctors as to whether they are self dispensing.

Section B:
Question 5 uses a five point Likert-type scale to determine how important are each of the 13 different criteria listed, when prescribing / dispensing a drug. The Likert-type scale is a widely used technique for helping to eliminate questionable items from the scale, thus increasing the variation in the possible scores (Bailey, 1987), and is quoted as being short, valid and reliable (Goldsmith, 1992). Responses ranged from 1 = not important, to 5 = extremely important.

Question 6 asks respondents to rank the top 5 most important factors that they consider when prescribing / dispensing a drug. Due to the similarity to Q5, the responses to this question were not used in our analysis.
Section C:
Question 7 is made up of 11 statements concerning generic drugs and again using a 5 point Likert-type scale, asks respondents to provide one out of a range of 5 possible responses where 1 = strongly disagree with the statement, and 5 = strongly agree.

Questions 8, 9, and 10 tried to compare the knowledge of the South African with the American generic drug sales but the wording was unclear as to whether we meant market share as a %age of volume or dollar / rand sales. Many of the respondents also stated that they were not interested in what occurred in the USA.

Question 11 tried to determine which issues relating to drugs were the most commonly discussed between pharmacists and doctors.

Questions 12 and 13 asked respondents how many times they were visited by representatives from both the “ethical” and the generic drug companies. The aim of this question was to see whether the frequency of visits by representatives actually influenced prescribing habits. The categories were not correctly constructed and we could not use the responses in our analysis.

Section D:
This section deals with the proposed changes to the Medicines and Related substances Control Act.
Question 14 tried to determine to what extent the respondents were aware of the proposed changes ranging from 1 = know very little, to 5 = know everything.

Question 15 tried to elicit the views of these 2 groups with respect to the new legislation and the proposed practice of generic substitution. A 5 point Likert-type scale is again used with 1 = strongly disagree and 5 = strongly agree.

Question 16 asked who the respondents thought was best qualified to choose a specific branded / non branded drug, once the choice of therapy had been made.
Section E:
This section required doctors to estimate the price of “ethical” drugs and generic copies. 5 different classes of drugs were selected, and the respondents were asked to choose one of a choice of 5 possible prices.

Doctors:
Three hundred questionnaires were distributed to general practitioners working in suburban private practices located in Cape Town and Stellenbosch. The distribution was done with the help of an intermediary that delivered the questionnaires to the different practices. Practitioners were requested to return the questionnaires after completion either by mail or by fax.

Only private practices were targeted because it was felt that doctors working in the public sector would constitute a different population. The only drugs available in public health facilities are those from the Essential Drug List and therefore doctors practicing in this sector face limitations in their choices of drugs. Also, due to the nature of public health care such as the free provision of medicine, they are less exposed to the issues relating to the cost of medicines.

The response rate was only 9% (only 26 out of the 300 questionnaires were returned). This is slightly lower than the 12% response rate obtained a similar study in the USA (Banahan and Kolassa, 1997). A minimum of 50 responses was needed to perform any meaningful statistical analyses, and thus further responses were obtained from general practitioners known to the authors, in Durban in Kwa-Zulu Natal, and Port Elizabeth in the Eastern Cape. A further attempt was made to increase the number of questionnaires by randomly phoning general practitioners in the Western Cape, who’s telephone numbers were found in the Yellow Pages, and faxing or emailing the questionnaires to them. Due to time limitations, we did not include any more responses once a total of 51 was reached.
Pharmacists:
Two hundred questionnaires were distributed to various retail pharmacies in the Western Cape as well as Durban. The questionnaires were all hand delivered and pharmacists were requested to complete them within a week, after which they were collected in person.

Only retail pharmacies were targeted, and public clinic or hospital pharmacies were excluded. Because of the limited scope of medicines available in the public sector and the already high level of generic use at public clinics and hospitals, it was felt that the dispensing practices of pharmacists from this sector would be minimally influenced by the proposed new legislation.

The response rate for this group was 59% (117 out of the 200 questionnaires were completed), which is significantly higher than that of the physician return rate. The high response rate with this sample group can be accounted for by the fact that the questionnaire deliveries involved face to face contact with the respondents as well as telephonic follow-up prior to the pick-up.

4.1.2 Focus Interviews
4 pharmacists and 5 doctors were interviewed in person and 1 pharmacist interviewed telephonically. The purpose of these focus interviews was to gain further insight into their responses and clarify some of the findings from our statistical analyses. The responses were incorporated into the body of our findings.

4.2 Statistical Approaches used in Analysis
The initial demographic data was analysed using basic descriptive statistics. Most of the Likert-scale questions were analysed using the student-t test to determine whether there were any statistically significant differences between the 2 groups. The answers to question 11 were analysed using a categorized histogram.
5 FINDINGS, DISCUSSION AND ANALYSIS

5.1 DEMOGRAPHICS

Responses in this section were analysed using basic descriptive statistics.

The two samples had the following demographic make-up:

<table>
<thead>
<tr>
<th>AGE</th>
<th>% PHARMACISTS (number)</th>
<th>% DOCTORS (number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-30</td>
<td>28.6 % (32)</td>
<td>29.4 % (15)</td>
</tr>
<tr>
<td>31-40</td>
<td>34.8 % (39)</td>
<td>41.2 % (21)</td>
</tr>
<tr>
<td>41-50</td>
<td>16.1 % (18)</td>
<td>19.6 % (10)</td>
</tr>
<tr>
<td>51-60</td>
<td>10.7 % (12)</td>
<td>7.8 % (4)</td>
</tr>
<tr>
<td>61-70</td>
<td>5.4 % (6)</td>
<td>1.9 % (1)</td>
</tr>
<tr>
<td>70+</td>
<td>4.5 % (5)</td>
<td>0 % (0)</td>
</tr>
</tbody>
</table>

i. The majority of those health professionals sampled were aged younger than 40 years, with the cumulative percentages under that age for pharmacists being 63.4% and for GP’s 70.6%. This resulted in positively skewed distributions for both sample groups and could influence subsequent findings. Bower (1987) found that younger family physicians had higher levels of confidence in generic medicines and were more likely than their older counterparts to prescribe generic drugs. No comparable information on the age related attitudes of pharmacists was available.

ii. The number of years in practice corresponded with the age of the respondents. The marked positive skewness of the distribution of the years in practice reflects the fact that the overall sample bias was towards physicians and pharmacists younger than 40 years old.

iii. Of the general practitioners who responded to the questionnaire, 33 (64.7%) were self dispensing and 18 (35.3%) were not. A common theme in the interviews with the pharmacists was their displeasure with dispensing doctors. They felt that dispensing practices only stocked a limited range of drugs, and that this had the potential to
influence their clinical diagnoses made by doctors in such practices. They would give a
drug that they had in stock, even if it was not the most appropriate for that condition.
When the dispensing doctors were questioned on this, they denied that this was the case.

5.2 Influences on Prescribing / Dispensing Habits

The following ranking, in terms of importance for the pharmacists and doctors, was
generated from the Likert-scaled responses to the question on the importance of different
aspects on prescribing or dispensing habits. A score of 1 indicated an attribute to be of no
importance, while 5 indicated it to be of extreme importance.

<table>
<thead>
<tr>
<th></th>
<th>PHARMACISTS</th>
<th>DOCTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Quality (4.49)</td>
<td>Quality (4.63)</td>
</tr>
<tr>
<td>2</td>
<td>Patient’s Socio-Economic /</td>
<td>Patient’s Socio-Economic /</td>
</tr>
<tr>
<td></td>
<td>Financial status (4.33)</td>
<td>Financial status (4.12)</td>
</tr>
<tr>
<td>3</td>
<td>Previous experience (4.17)</td>
<td>Previous experience (4.22)</td>
</tr>
<tr>
<td>4</td>
<td>Patient’s request (3.97)</td>
<td>Price (3.98)</td>
</tr>
<tr>
<td>5</td>
<td>Reputation of company (3.97)</td>
<td>Reputation of company (3.61)</td>
</tr>
<tr>
<td>6</td>
<td>Doctor’s Recommendation (3.87)</td>
<td>Visits by representatives (3.22)</td>
</tr>
<tr>
<td>7</td>
<td>Price (3.79)</td>
<td>Habit prescribing (3.18)</td>
</tr>
<tr>
<td>8</td>
<td>Habit of dispensing (3.0)</td>
<td>Brand name and loyalty (2.88)</td>
</tr>
</tbody>
</table>

The influences related to the choice of drugs made in prescriptions by doctors and the choice
of drugs dispensed by pharmacists for non-prescriptive drugs (schedule I and II drugs).

i. In terms of the ranking, both pharmacists and doctors feel equally strong that product
quality, the patient’s socio-economic status and previous experience with a drug are the
three most important aspects than influence them in their choice of drugs. Using the
Student-t test, these three aspects showed no statistical significant differences between
the two groups, with p values of 0.26, 0.73 and 0.16 respectively for each of the factors.
ii. None of the other factors, apart from the following three highlighted below, showed any statistically significant differences between the two sample groups. When choosing to dispense or prescribe a certain drug, it is evident that both pharmacists and doctors feel equally strong about the influence that these different aspects have on them.

iii. The three influences on prescribing of which there was a significant difference of opinion between the two sample groups were:

<table>
<thead>
<tr>
<th>Influence</th>
<th>Pharmacists</th>
<th>Doctors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reputation of Company $(p = 0.018)$</td>
<td>3.97</td>
<td>3.61</td>
</tr>
<tr>
<td>Patient’s request $(p = 0.00)$</td>
<td>3.97</td>
<td>2.86</td>
</tr>
<tr>
<td>Recommendation by doctor / pharmacist $(p = 0.00)$</td>
<td>3.87</td>
<td>1.84</td>
</tr>
</tbody>
</table>

The fact that pharmacists rate company reputation of higher importance than doctors could be the result of their frequent commercial interaction with pharmaceutical companies. Because they are closer to the supply side of the drug supply chain, they interact with a far larger scope of drug companies than doctors do. During the course of their commercial interactions with the different drug companies, pharmacists get to know different aspects of the companies, like quality of service, support and products. During one interview, a pharmacist confirmed that due to the small size of the local pharmaceutical community, drug companies had specific reputations amongst pharmacists. He was also of the opinion that patients often complained to pharmacists when they experienced problems with their prescriptions, so that pharmacists probably had a higher level of awareness of the product quality of the different pharmaceutical companies. On the other hand, the doctors who were interviewed felt that they were the first to be notified by the patient if the drug had failed to relieve symptoms, and thus had better knowledge of the quality of the generic substitute.
Pharmacists rated the importance of ‘patient request’ on dispensing more highly than doctors did. This reflects the fact that their relationship to customers or patients is of a transactional nature. The interactions between patients and pharmacists are mostly sales related, and pharmacists will therefore appease consumer needs to a greater extent than would doctors, who have greater relational interactions with their ‘customers’.

The influence that each sample group has on the other differs markedly. Pharmacists consider doctors’ recommendations of high importance, placing it overall as the sixth most important influence on their dispensing habits. This is in stark contrast to the opinion they hold on doctors’ drug selection abilities.

When asked who they thought was best qualified to choose a specific branded or non-branded drug once the choice of therapy had been made, each group overwhelmingly endorsed itself, with less than 5% of each group believing that they are equally qualified to make the decision.

<table>
<thead>
<tr>
<th>WHO IS MORE QUALIFIED</th>
<th>PHARMACISTS</th>
<th>DOCTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors</td>
<td>7%</td>
<td>94%</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>88%</td>
<td>2%</td>
</tr>
<tr>
<td>Both</td>
<td>5%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Despite the fact that pharmacists acknowledged the influence that doctors have on their choice of dispensing drugs when advising patients on non-prescription drugs, they have higher regard for their own ability to choose the specific of generic or ethical brand for the patient.
iv. Both pharmacists and doctors rated the marketing efforts of drug companies in the form of representative visits, journal adverts, incentives and promotional materials as being of little importance. The Student-t test showed no significant differences between the two groups. Both sample groups rated these influences as the four least important out of a list of thirteen.

<table>
<thead>
<tr>
<th></th>
<th>PHARMACISTS</th>
<th>DOCTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visits by company Representatives</td>
<td>2.91</td>
<td>3.22</td>
</tr>
<tr>
<td>Brand name and loyalty</td>
<td>2.75</td>
<td>2.88</td>
</tr>
<tr>
<td>Journal advertisements</td>
<td>2.54</td>
<td>2.22</td>
</tr>
<tr>
<td>Drug company incentives</td>
<td>2.11</td>
<td>1.80</td>
</tr>
<tr>
<td>Promotional materials</td>
<td>1.53</td>
<td>1.59</td>
</tr>
</tbody>
</table>

This finding was especially important in the light of information highlighted in the literature survey earlier in the report. Gibbons (1998), Avorn (1982) and Chren (1994) found that despite the fact that promotional efforts from pharmaceutical companies have a profound impact on the prescribing habits of physicians, the latter did not acknowledge or believed this to be true. It is interesting to note that apart from one pharmacist, all the pharmacists and doctors interviewed stated how important the relationship with the drug representative was, and that ceteris paribus, they would buy from the representative that they had the best relationship with.
5.3 Views on Generic Medicines

When asked to respond to general statements related to generic medicines (Section C: Q7), the Student t-test indicated a statistically significant difference between the two sample groups. Rating was done on a Likert-scale with 1 indicating strong disagreement and 5 strong agreement with a statement. Pharmacists took a more positive view on generic medicines than doctors, and doctors in general were more likely to take a neutral to negative view.

i. The highest overall scores indicated by the pharmacists related to the issue of generic safety and quality. Asked to respond to statements relating to these two aspects of medicines, the following scores were obtained:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Pharmacists</th>
<th>Doctors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic drugs are as safe as original branded drugs ((p = 0.00))</td>
<td>3.91</td>
<td>3.29</td>
</tr>
<tr>
<td>I am confident in the overall quality of generic drugs ((p = 0.00))</td>
<td>3.91</td>
<td>2.25</td>
</tr>
</tbody>
</table>

The average Likert-values for doctors were closer to the neutral score of 3, indicating an overall more neutral view of the safety and quality of generic drugs. The Student-t test indicates a statistically significant difference between the 2 groups \((p = 0.00)\). This finding reinforces the findings of Kirking et al (2001) that indicated that physicians’ attitudes towards generic drugs were fairly neutral, although they had doubts about brand-generic equivalence. Also, more supportive views of the overall quality of generic medicines were found in this study compared to the findings of Sanborn (1993). In that study, pharmacists’ \((n = 312)\) response to an identically worded statement, rated a lower 2.67 on a five point Likert-scale, indicating a statistically significant lower confidence in generic medicines.
ii. With respect to statements phrased to test the attitudes of the two sample groups to general aspects of generic medicines, such as their confidence in therapeutic success and efficaciousness, both groups indicated neutral responses as indicated by scores close to 3. In each case, pharmacists indicated a slightly higher level of support for the statements, taking a more positive view towards generic medicines. The Student-t test demonstrated a significant difference between the 2 groups.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Pharmacists</th>
<th>Doctors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic drugs are equally as efficacious as original branded drugs ( (p = 0.001) )</td>
<td>3.55</td>
<td>3.07</td>
</tr>
<tr>
<td>Therapeutic failures are a serious problem with some generics ( (p = 0.02) )</td>
<td>2.78</td>
<td>3.22</td>
</tr>
<tr>
<td>Original innovator drugs are of a higher quality ( (p = 0.01) )</td>
<td>2.73</td>
<td>3.24</td>
</tr>
</tbody>
</table>

These findings support similar ones by Banahan (1995), who in a study of community and hospital pharmacists, found that pharmacists were uncertain about the equivalence of ethical and generic medications, as indicated by the neutral scores obtained on similar statements to the above. It is interesting to note that this contradicts pharmacists’ responses to some of the earlier questions in which they indicated a high level of confidence in the overall quality and safety of generic medicines as well as their positive feedback on generic medication in the focus groups.

iii. Statements examining possible reasons for particular attitudes towards generic medicines elicited the following responses:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Pharmacists</th>
<th>Doctors</th>
</tr>
</thead>
<tbody>
<tr>
<td>The reason branded drugs are more expensive is because they are of a higher quality ( (p = 0.00) )</td>
<td>1.89</td>
<td>2.70</td>
</tr>
<tr>
<td>The reason generic drugs are cheaper is because they are of lower quality ( (p = 0.003) )</td>
<td>1.92</td>
<td>2.47</td>
</tr>
<tr>
<td>Adequate clinical trails are performed on generic drugs before registration ( (p = 0.002) )</td>
<td>3.44</td>
<td>2.71</td>
</tr>
<tr>
<td>Generic drugs have inferior packaging ( (p = 0.81) )</td>
<td>2.56</td>
<td>2.61</td>
</tr>
</tbody>
</table>
Pharmacists strongly disagreed with statements trying to link the quality of medicines to price. Both statements, designed to test the attitudes of respondents toward the influence of price on quality, were strongly rejected by pharmacists. Doctors on the other hand, were far more neutral in their views on the possible influence that price can have to determine product quality. This suggests that they don’t altogether reject the notion of priced determined quality. Medicines are unlike other consumer products where price could well be an indicator of quality, because registration of a pharmaceutical product is backed by research proven efficacy.

Although pharmacists’ views are statistically significantly different from those of doctors (p = 0.002), both sample groups indicated neutral agreement with the statement relating to the amount of clinical trials performed prior to the registration of a generic drug. This could indicate the fact that both groups were less than convinced (doctors even less so than pharmacists) that generic medicines were adequately tested prior to registration with the authorities, and could contribute to both groups reluctance to endorse the quality and efficacy of these drugs.

No statistically significant difference was found between both groups’ attitudes toward generic packaging. Both doctors and pharmacists disagreed that generic packaging was inferior to that of innovator drugs. Although product packaging wasn’t tested as a specific influence on prescribing or dispensing habits, one doctor interviewed suggested that there are concerns about some of the packaging used for generics, especially in the public sector. This perception of compromised quality could contribute to the overall perceptions held on generic medicines. One pharmacist interviewed even claimed that some tablets from the same production line were packaged in blister packs and sold as the ‘ethical’ drug, and others placed in bottles and sold as the generic.
5.4 Issues Discussed Between Pharmacists and Doctors

Pharmacists and doctors were requested to indicate which issues were discussed between them and their counterparts (Section C: Q11). The purpose of this question was to ascertain whether, in the first place, there was any contact between the two health care professions, and secondly, what the nature of the interaction was. Three of the pharmacists interviewed suggested that pharmacists in general were more likely to contact doctors to discuss the possibility of generic substitution for a patient. They were also of the opinion that, despite the lack of legal sanction for such actions, pharmacists already practiced generic substitution.

![Graph showing issues discussed](image)

*Figure 2:* Issues discussed by pharmacists with doctors ($n=109$) and issues discussed by doctors with pharmacists ($n=51$)

From the categorized histograms it is clear that, according to pharmacists, the main issue discussed between them and doctors related to generic substitution. This finding reinforces the opinion that pharmacists already practice generic substitution to a certain degree. Prior to the promulgation of the amendments to Act 90 that will sanction voluntary generic substitution, pharmacists were not allowed to substitute without the explicit approval of the prescribing doctor.
Doctors also rated generic substitution as the issue most frequently discussed between them and pharmacists. However, while 31 percent rated this issue as the one most frequently discussed, 29 percent indicated that they rarely discussed anything related to their prescriptions with pharmacists. This finding indicates that some doctors practice their skills highly isolated from their pharmacist counterparts. This could be due to the fact that they perceive themselves to be in a better position to make decisions regarding the choice and brand of a specific therapy. This finding is supported by findings highlighted in section 5.2 (iii), in which 94 percent of doctors indicated that they felt themselves the most qualified to make decisions related to drug therapy.

5.5 ATTITUDES TOWARD GENERIC SUBSTITUTION

Doctors and pharmacists were asked to indicate how much they knew about the proposed changes to Act 90. The question was answered using the a 5 point Likert-scale with 1 = very little and 5 = everything. A Student-t test was performed to test for any significant difference between the two sample groups. With a mean of 3.4, pharmacists indicated a higher level of knowledge about the proposed changes than did doctors, who scored a mean of 2.53. There was a statistically significant difference between the two sample groups as indicated by the Student t- test’s p value of 0.

Respondents were then given a set of 5 statements that related to the topic of generic substitution as proposed by the changes to Act 90. They were asked to give a rated response to the statements, with 1 indicating strong disagreement and 5 indicating strong agreement. For all but one of the statements, the Student-t test indicated statistically significant differences between the two sample groups. In each case, pharmacists took a positive to neutral view on generic substitution, while doctors responded with negative to neutral views.
i. The biggest difference in opinion between the two groups related to the two statements below.

<table>
<thead>
<tr>
<th>Patients will ultimately benefit from being given the choice of generic substitution. ($p = 0.00$)</th>
<th>PHARMACISTS</th>
<th>DOCTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.02</td>
<td></td>
<td>2.84</td>
</tr>
</tbody>
</table>

| I am happy to replace scripts for ethical drugs without contacting the doctor / I am happy for pharmacists to replace scripts for ethical drugs without contacting me ($p = 0.00$) | 3.38 | 1.41 |

While pharmacists took a supportive view on the statement relating to the benefit that patients would get from generic substitution, doctors took a more neutral view. The stance taken by doctors is supported by their response to statements in section 5.4., in which respondents from this group indicated negative to neutral views on the quality and efficaciousness of generic medicines. It is evident that doctors are less convinced that patients will benefit from generic substitution because they are also unsure about the safety and efficacy of some generic medicines. On the other hand, pharmacists, who as a group take a more positive view on the safety and quality of generic medicines, hold the opinion that patients will ultimately benefit more from substitution. This finding was also supported in all the focused interviews conducted. Where doctors were more concerned about quality-related issues with generic drugs, pharmacists were more aware of the cost benefit for patients. Most pharmacists felt that due to the stringent registration requirements, generic medicines were equivalent to their ‘ethical’ counterparts.

On the second statement, doctors clearly indicated that they did not want pharmacists to replace their scripts without their consent. This response is also related to their negative perceptions of generic medicines, and the fact that they indicated their belief that generic substitution, as promoted by Act 90, would undermine their autonomy.
ii. Pharmacists took a more positive view, while doctors took a more neutral view when asked to respond to issues relating to their support of and the effect of generic substitution. Student-t test showed that the difference was statistically significant for all three of the responses below (p = 0.00)

<table>
<thead>
<tr>
<th></th>
<th>PHARMACISTS</th>
<th>DOCTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic substitution will lead to a lowering of the quality of health care in South Africa (p = 0.00)</td>
<td>2.31</td>
<td>3.31</td>
</tr>
<tr>
<td>I willingly support generic substitution for brand name prescription drugs (p = 0.00)</td>
<td>4.12</td>
<td>3.16</td>
</tr>
<tr>
<td>Generic substitution will undermine the autonomy of doctors (p = 0.00)</td>
<td>2.39</td>
<td>3.98</td>
</tr>
</tbody>
</table>

Pharmacists indicated strong support for generic substitution, while doctors took a more neutral view on the issue. This contrasted with the earlier finding that doctors were strongly opposed to generic substitution without their consent. Their neutral view on generic substitution as proposed by Act 90 suggests that doctors, although not entirely convinced about the benefits of this practice, would take a more positive view if they were involved in the drug selection process of substitution to a greater extent.

iii. Both pharmacists and doctors felt strongly that there was increasing pressure from medical funders and managed care companies to use generic medicines. Asked to comment on whether they were under increasing institutional pressure to increase generic use, pharmacists and doctors responded with Likert-scores of 4.80 and 4.59 respectively. There was no statistically significant difference between the two sample groups (p = 0.1). During interviews, pharmacists indicated that not only would the proposed changes to Act 90 promote generic use because it would allow generic substitution, but it would also do so because of the pricing mechanisms that would result from its implementation, viz. pharmacists would not be able to add a mark-up on their products and would only collect a dispensing fee. With these new measures, they would be able generate a higher profit from the dispensing of these drugs (previously low margins), therefore creating an added incentive to increase their use.
5.6 Price sensitivity

Respondents from the doctor sample group were asked to estimate the price of 5 different categories of drugs. In order to test the price awareness of doctors, the branded, as well as the generic name, was supplied for each drug. Pharmacists were excluded from this section because of their intimate knowledge of drug prices. A Student t-test was performed on each of the 10 listed drug names in order to establish whether there were any statistically significant differences between the true prices and the estimated prices.

i. Of the 10 estimated prices, only two showed p values that exceeded 10 percent, implying that for those two the average estimated price by the majority of the doctors was statistically equivalent to the real price. Both of these were generic medicines.

ii. On average, of each of the 10 prices estimated, only 22 % of doctors estimated each price correctly. Of each of the listed generic drugs, 26 % of doctors estimated the price correctly, while only 18 % percent of respondents correctly estimated the price of each of the banded drugs.

iii. Of the 8 drug estimates that significantly differed from the real prices, respondents overestimated the price of 4 of them and underestimated the other 4. Of the 5 ‘ethical’ drug names, respondents underestimated the price of 3 and overestimated the price of 2. Of the 3 generic drugs (the prices of 2 were correctly estimated), the prices of 2 were overestimated and 1 underestimated. Due to the small sample sizes of the two classes of drugs i.e. only 5 of each class was supplied, no statistical inferences could be made about the likelihood of over or underestimation of each of the two classes.

<table>
<thead>
<tr>
<th>Prices</th>
<th>Generics</th>
<th>Ethicals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correctly estimated</td>
<td>40 %</td>
<td>0 %</td>
</tr>
<tr>
<td>Underestimated</td>
<td>20 %</td>
<td>60 %</td>
</tr>
<tr>
<td>Overestimated</td>
<td>40 %</td>
<td>40 %</td>
</tr>
</tbody>
</table>
Reichert (2000) found that doctors are predisposed to being cost conscious but that they lack accurate knowledge of actual drug costs. This study concurs with that finding, in that doctors listed their patients’ socio-economic status and drugs prices as respectively the second and fourth most important influences on their prescribing habits (section 5.2). However, as highlighted in the above findings, despite this claim of cost-consciousness, doctors lacked accurate knowledge of drug prices. This can be another cause for the lack of generics to capture a larger market share, as doctors are not aware of the costs of drugs and therefore not able to prescribe cost effectively.

What was interesting was that all 3 doctors interviewed who are self-dispensing, claimed to be more cost conscious because they bill for the medications themselves. 3 of the 5 pharmacists stated that they felt doctors generally had no idea of the price of drugs.
6 CONCLUSIONS and RECOMMENDATIONS

Based on anecdotal evidence, this study set out to prove the hypothesis that there would be a significant difference between the attitudes and views of pharmacists and doctors toward generic medicines. From the results of this study, it can be concluded that this is indeed the case. Pharmacists in general, have a more positive view on the quality and safety of generic medicines, whereas doctors view them in a more negative light.

This study did not attempt to identify the reasons for the difference in attitudes between the two health care professions, although it did review several causes as indicated by the literature. This could be an area for additional research in the future, as little previous inquiry about the potential influences of the marketing efforts by drug companies on the prescribing habits of doctors could be found in the South African literature.

This study also evaluated the potential influences on the dispensing or prescribing habits of pharmacists and doctors. It showed that despite indications in the literature to the opposite effect, respondents from both professions did not believe that pharmaceutical marketing had any significant influence on their prescribing or dispensing habits.

Results from this study indicated that there was a significant difference in the attitudes of doctors and pharmacists towards generic substitution. Pharmacists were more likely to support this practice, whereas doctors took a more negative view on it. Where pharmacists felt strongly that generic substitution would benefit patients, doctors were more neutral in their opinion, indicating the fact that they were not convinced of the benefits to patients.

While doctors professed that the price of a drug and the socio-economic status of a patient had a significant influence on their prescribing habits, this study indicated that they lacked accurate knowledge about the prices of medicines. Although not statistically significant, doctors were more likely to correctly estimate the price of a generic medicine than that of a branded drug. A future study could be undertaken to establish whether doctors have statistically significant more knowledge of the prices of generic drugs.
In conclusion, it can be stated that despite the obvious cost benefits that the increasing use of generic medicines holds for consumers and health insurers, doctors still need to be convinced of overall positive aspects of these drugs. Generic companies and insurers, whose aim it is to increase the use of generic drugs, should aim to address the negative perceptions of doctors. On the other hand, pharmacists hold more positive views toward these drugs and their endorsing attitudes should be cultivated and exploited by those who agitate for higher generic use.
7 APPENDICES

APPENDIX 1

Coding of Generic Drugs

“A” products: therapeutically equivalent to other pharmaceutically equivalent drugs.

<table>
<thead>
<tr>
<th>CODE</th>
<th>INTERPRETATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>Products in conventional dosage forms not presenting either actual or potential bioequivalence problems or drug quality or standards issues</td>
</tr>
<tr>
<td>AB</td>
<td>Products having the same dosage form, active ingredient, strength and route of administration where bioequivalence was demonstrated by a study</td>
</tr>
<tr>
<td>AN</td>
<td>Solutions and powders intended for aerolization</td>
</tr>
<tr>
<td>AO</td>
<td>Injectable oil solutions, where the active ingredient, its concentration and the type of oil used as a vehicle are all identical</td>
</tr>
<tr>
<td>AP</td>
<td>Injectable aqueous solutions and, in certain instances, intravenous non-aqueous solutions</td>
</tr>
<tr>
<td>AT</td>
<td>Topical dosage forms, including solutions, creams, ointments, gels, lotions, pastes, sprays, and suppositories</td>
</tr>
</tbody>
</table>

“B” products: not therapeutically equivalent

<table>
<thead>
<tr>
<th>CODE</th>
<th>INTERPRETATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC</td>
<td>Extended-release dosage forms (tablets, capsules, injectables)</td>
</tr>
<tr>
<td>BD</td>
<td>Active ingredients and dosage forms with documented bioequivalence problems</td>
</tr>
<tr>
<td>BE</td>
<td>Delayed-release oral dosage forms</td>
</tr>
<tr>
<td>BN</td>
<td>Products in aerosol-nebulizer drug delivery systems</td>
</tr>
<tr>
<td>BP</td>
<td>Active ingredients and dosage forms with potential bioequivalence problems</td>
</tr>
<tr>
<td>BR</td>
<td>Suppositories or enemas that deliver drugs for systemic absorption</td>
</tr>
<tr>
<td>BS</td>
<td>Products having drug-standard deficiencies</td>
</tr>
</tbody>
</table>
### APPENDIX 2

Scheduling of drugs in SA

<table>
<thead>
<tr>
<th>Scheduling Status</th>
<th>Prescription</th>
<th>Repeat</th>
<th>Duration of Prescription</th>
<th>Special Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>on oral instruction</td>
<td>yes</td>
<td>unlimited</td>
<td>none</td>
</tr>
<tr>
<td>2</td>
<td>on oral instruction</td>
<td>yes</td>
<td>unlimited</td>
<td>needs written record</td>
</tr>
<tr>
<td>3</td>
<td>on oral instruction</td>
<td>yes</td>
<td>unlimited</td>
<td>needs written record</td>
</tr>
<tr>
<td>4</td>
<td>prescription</td>
<td>yes, one year only</td>
<td>unlimited</td>
<td>needs written record</td>
</tr>
<tr>
<td>5</td>
<td>prescription</td>
<td>no</td>
<td>30 days</td>
<td>needs written record</td>
</tr>
<tr>
<td>6</td>
<td>prescription</td>
<td>no</td>
<td>30 days</td>
<td>register is needed</td>
</tr>
<tr>
<td>7</td>
<td>prescription</td>
<td>no</td>
<td>30 days</td>
<td>register needed</td>
</tr>
<tr>
<td>8</td>
<td>banned substances</td>
<td>-</td>
<td>needs permit</td>
<td>-</td>
</tr>
</tbody>
</table>
APPENDIX 3

No. 18505, GOVERNMENT GAZETTE, CAPE TOWN, 12 DECEMBER 1997

Act No.90 1997,
MEDICINES AND RELATED SUBSTANCES CONTROL AMENDMENT ACT. 1997

ACT

To amend the Medicines and Related Substances Control Act, 1965, in relation to the definitions: to provide that the council shall be a juristic person; to make other provision for the constitution of the council; to provide that a member of the council or a committee shall declare his or her commercial interest related to the pharmaceutical or health care industry; to provide that the appointment of members of the executive committee shall be subject to the approval of the Minister; to make further provision for the prohibition on the sale of medicines which are subject to registration and are not registered; to provide for procedures that will expedite the registration of essential medicines, and for the re-evaluation of all medicines after five years; to provide for measures for the supply of more affordable medicines in certain circumstances; to require labels to be approved by the council; to prohibit bonusing and sampling of medicines; to further regulate the control of medicines and Scheduled substances; to provide for the licensing of certain persons to compound, dispense or manufacture medicines; to provide for generic substitution of medicines; to provide for the establishment of a pricing committee; to regulate the purchase and sale of medicines by wholesalers; to make new provision for appeals against decisions of the Director-General or the council; to further regulate the powers of inspectors; to increase the jurisdiction of magistrates’ courts in respect of penalties in terms of this Act; to provide that the council may acquire and appropriate funds; to regulate anew the Minister’s power to make regulations; and to provide for the rationalisation of certain laws relating to medicines and related substances that have remained in force in various territories of the national territory of the Republic by virtue of section 229 of the Constitution of the Republic of South Africa, 1993; and to provide for matters connected therewith.
APPENDIX 4 (DOCTORS)
QUESTIONNAIRE ON ATTITUDES TOWARDS THE USE OF GENERIC DRUGS

SECTION A (Personal Details)

1. Age:
   - 21-30
   - 31-40
   - 41-50
   - 51-60
   - 61-70
   - 70+

2. Number of years in practice:
   - 0-10
   - 11-20
   - 21-30
   - 31-40
   - 41-50
   - 50+

3. University of qualification:
   - WITS
   - UCT
   - Stell'bosch
   - Pretoria
   - UOVS
   - Natal
   - Other

4. Self Dispensing?
   - YES
   - NO

SECTION B

5. When prescribing a drug, how important are each of the following?
   (Rate each attribute on a scale of 1 – 5, with 1 = not important and 5 = extremely important)

   5.1 Price
   - 1
   - 2
   - 3
   - 4
   - 5

   5.2 Quality as proven by scientific research
   - 1
   - 2
   - 3
   - 4
   - 5

   5.3 Brand name and loyalty
   - 1
   - 2
   - 3
   - 4
   - 5

   5.4 Habit prescribing certain drugs
   - 1
   - 2
   - 3
   - 4
   - 5

   5.5 Previous experience with the drug
   - 1
   - 2
   - 3
   - 4
   - 5

   5.6 Promotional material: pens, gimmicks etc
   - 1
   - 2
   - 3
   - 4
   - 5

   5.7 Incentives from drug companies
   - 1
   - 2
   - 3
   - 4
   - 5

   5.8 Visits by representatives from the drug companies
   - 1
   - 2
   - 3
   - 4
   - 5

   5.9 Reputation of the drug company itself
   - 1
   - 2
   - 3
   - 4
   - 5

   5.10 Advertisements in medical journals
   - 1
   - 2
   - 3
   - 4
   - 5

   5.11 Patient's request
   - 1
   - 2
   - 3
   - 4
   - 5

   5.12 Patient's socio-economic / financial status
   - 1
   - 2
   - 3
   - 4
   - 5

   5.13 Recommendation by pharmacists
   - 1
   - 2
   - 3
   - 4
   - 5
6. Please rank only the top 5 most important factors you consider when prescribing a drug. (with 1 being the most important and 5 being the least important)

6.1 Price
6.2 Quality as proven by scientific research
6.3 Brand name and loyalty
6.4 Habit prescribing certain drugs
6.5 Previous experience with the drug
6.6 Promotional material: pens, gimmicks etc
6.7 Incentives from drug companies
6.8 Visits by representatives from the drug companies
6.9 Reputation of the drug company itself
6.10 Advertisements in medical journals
6.11 Patient's request
6.12 Patient's socio-economic / financial status
6.13 Recommendation by pharmacists

SECTION C
7. Please provide one response for each of the general statements below (where 1 = strongly disagree and 5 = strongly agree)

7.1 Generic drugs are equally as efficacious as original branded drugs.
7.2 Generic drugs are as safe as original branded drugs.
7.3 The reason branded drugs are more expensive is because they are of a higher quality.
7.4 The reason generic drugs are cheaper is because they are of a lower quality.
7.5 Adequate clinical trials are performed on generic drugs before registration.
7.6 Generic drugs have inferior packaging.
7.7 Original innovator drugs are of a higher quality.
7.8 I am confident in the overall quality of generic drugs.
7.9 Therapeutic failures are a serious problem with some generic medicines.
7.10 I willingly support generic substitution for brand name prescription drugs.
7.11 There is increasing pressure from medical funds / managed care companies to use generic medicines.


31. Roughead L, *The pharmaceutical representative and medical practitioner encounter: implications for quality use of medicines*, M.Sc Thesis School of Pharmacy, 1996, University of South Australia


35. Tanouye, E, *Drug Marketers May Use Illegal Tactics to Sell*, Wall Street Journal, August 12, 1994

36. *The Doctor’s Dilemma* {No author listed}, The Economist, Jan 27 1990 p69


40. Wesgro, 2000, *Cape Sector Factsheet*,


8. What percentage of drugs sold in South Africa do you think are generic?

<table>
<thead>
<tr>
<th></th>
<th>0-15</th>
<th>16-30</th>
<th>31-45</th>
<th>46-60</th>
<th>61-75</th>
<th>76-90</th>
<th>&gt;90</th>
</tr>
</thead>
</table>

9. What percentage of drugs sold in the USA do you think are generic?

<table>
<thead>
<tr>
<th></th>
<th>0-15</th>
<th>16-30</th>
<th>31-45</th>
<th>46-60</th>
<th>61-75</th>
<th>76-90</th>
<th>&gt;90</th>
</tr>
</thead>
</table>

10. Assuming that more than double the percentage of generic drugs are sold in the USA compared with South Africa, how would this change your prescribing (dispensing) practices concerning generic drugs? I would prescribe generic drugs: (mark one)

- less
- no differently
- more frequently

11. Which issue relating to drugs do you discuss with pharmacists most frequently? (mark one)

a. cost
b. issues relating to safety and efficacy
c. substitution of a prescribed drug with another drug
d. I rarely discuss anything with pharmacists
e. Other

12. How many times per month are you visited by representatives promoting generic drugs?

<table>
<thead>
<tr>
<th></th>
<th>0-2</th>
<th>3-4</th>
<th>5-6</th>
<th>7-8</th>
<th>8-9</th>
<th>9-10</th>
<th>&gt;10, give no.</th>
</tr>
</thead>
</table>

13. How many times per month are you visited by representatives promoting branded drugs?

<table>
<thead>
<tr>
<th></th>
<th>0-2</th>
<th>3-4</th>
<th>5-6</th>
<th>7-8</th>
<th>8-9</th>
<th>9-10</th>
<th>&gt;10, give no.</th>
</tr>
</thead>
</table>

SECTION D

14. Are you aware of the provisions of and proposed revisions to Act 90?
(Answer on a scale of 1-5 with 1 = very little and 5 = everything)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

15. Given that one of the changes is the compulsory substitution of the more expensive branded drugs with a cheaper generic alternative (where available), please provide one response for each of the statements below: (with 1 = strongly disagree and 5 = strongly agree)

15.1 Patients will ultimately benefit from forced generic substitution.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

15.2 Forced generic substitution will lead to a lowering of the quality of health care in South Africa.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

15.3 I am happy for pharmacists to replace scripts for ethical drugs with generic drugs without first contacting me.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

15.4 Forced generic substitution will undermine the autonomy of doctors.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

15.5 Generic substitution will lead to a change in marketing strategy for drug companies. They will now target pharmacists more than doctors.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

16. Who do you think is best qualified to choose a specific branded / non branded drug once the choice of therapy has been made?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>

Doctors | Pharmacists

- 49 -
17. Without referring to a price guide, please would you tick one box which you think is the most accurate retail price of each of the following drugs (prices are in Rands):

<table>
<thead>
<tr>
<th>Drug Description</th>
<th>Prices (Rands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.1 Adalat 10mg (60)</td>
<td>343 376 403 433 466</td>
</tr>
<tr>
<td>17.2 Nifedipine Generic 10mg (60)</td>
<td>90 105 120 135 150</td>
</tr>
<tr>
<td>17.3 Prozac 20mg (30)</td>
<td>556 587 618 649 680</td>
</tr>
<tr>
<td>17.4 Fluoxetine Generic 20mg (30)</td>
<td>89 104 119 134 149</td>
</tr>
<tr>
<td>17.5 Lasix 40mg (30)</td>
<td>152 167 182 197 212</td>
</tr>
<tr>
<td>17.6 Furosemide Generic 40mg (30)</td>
<td>32 42 52 62 72</td>
</tr>
<tr>
<td>17.7 Zovirax cream (2g)</td>
<td>46 56 66 76 86</td>
</tr>
<tr>
<td>17.8 Acyclovir Generic cream (2g)</td>
<td>10 20 30 40 50</td>
</tr>
<tr>
<td>17.9 Tegretol 200mg (100)</td>
<td>285 305 325 345 365</td>
</tr>
<tr>
<td>17.10 Carbamazepine Generic 200mg (100)</td>
<td>111 131 151 171 191</td>
</tr>
</tbody>
</table>
APPENDIX 5  (PHARMACISTS)
QUESTIONNAIRE ON ATTITUDES TOWARDS THE USE OF GENERIC DRUGS

SECTION A (Personal Details)

1. Age:
   21-30 | 31-40 | 41-50 | 51-60 | 61-70 | 70+

2. Number of years in practice:
   0-10 | 11-20 | 21-30 | 31-40 | 41-50 | 50+

3. University of qualification:
   WITS | UCT | Stell'bosch | UnofNorth | UWC | UDW | UPE | Rhodes | Other

SECTION B

5. When deciding which drug to dispense, how important are each of the following?
   (Rate each attribute on a scale of 1 – 5, with 1 = not important and 5 = extremely important)

5.1 Price
   1 | 2 | 3 | 4 | 5

5.2 Quality as proven by scientific research
   1 | 2 | 3 | 4 | 5

5.3 Brand name and loyalty
   1 | 2 | 3 | 4 | 5

5.4 Habit prescribing certain drugs
   1 | 2 | 3 | 4 | 5

5.5 Previous experience with the drug
   1 | 2 | 3 | 4 | 5

5.6 Promotional material: pens, gimmicks etc
   1 | 2 | 3 | 4 | 5

5.7 Incentives from drug companies
   1 | 2 | 3 | 4 | 5

5.8 Visits by representatives from the drug companies
   1 | 2 | 3 | 4 | 5

5.9 Reputation of the drug company itself
5.1 Advertisments in medical journals
   1 | 2 | 3 | 4 | 5

5.11 Patient's request
   1 | 2 | 3 | 4 | 5

5.12 Patient's socio-economic / financial status
   1 | 2 | 3 | 4 | 5

5.13 Recommendation by doctors
   1 | 2 | 3 | 4 | 5
6. Please rank only the top 5 most important factors you consider when prescribing a drug. 
(with 1 being the most important and 5 being the least important)

6.1 Price
6.2 Quality as proven by scientific research
6.3 Brand name and loyalty
6.4 Habit prescribing certain drugs
6.5 Previous experience with the drug
6.6 Promotional material: pens, gimmicks etc
6.7 Incentives from drug companies
6.8 Visits by representatives from the drug companies
6.9 Reputation of the drug company itself
6.10 Advertisements in medical / pharmaceutical journals
6.11 Patient's request
6.12 Patient's socio-economic / financial status
6.13 Recommendation by doctors

SECTION C

7. Please provide one response for each of the general statements below 
(where 1 = strongly disagree and 5 = strongly agree)

7.1 Generic drugs are equally as efficacious as original branded drugs.
7.2 Generic drugs are as safe as original branded drugs.
7.3 The reason branded drugs are more expensive is because they are of a higher quality.
7.4 The reason generic drugs are cheaper is because they are of a lower quality.
7.5 Adequate clinical trials are performed on generic drugs before registration.
7.6 Generic drugs have inferior packaging.
7.7 Original innovator drugs are of a higher quality.
7.8 I am confident in the overall quality of generic drugs.
7.9 Therapeutic failures are a serious problem with some generic medicines.
7.10 I willingly support generic substitution for brand name prescription drugs.
7.11 There is increasing pressure from medical funds / managed care companies to use generic medicines.

8. What percentage of drugs sold in South Africa do you think are generic?
01 5
10 15
20 25
30 35
40 45
50 55
60 65
70 75
80 85
90 95
10. Assuming that more than double the percentage of generic drugs are sold in the USA compared with South Africa, how would this change your prescribing (dispensing) practices concerning generic drugs? I would prescribe generic drugs: (mark one)

- less
- no differently
- more frequently

11. Which issue relating to drugs do you discuss with doctors most frequently? (mark one)

- a. cost
- b. issues relating to safety and efficacy
- c. substitution of a prescribed drug with another drug
- d. I rarely discuss anything with doctors
- e. Other

12. How many times per month are you visited by representatives promoting generic drugs?

- 0-2
- 3-4
- 5-6
- 7-8
- 9-9
- 9-10
- >10, give no.

13. How many times per month are you visited by representatives promoting branded drugs?

- 0-2
- 3-4
- 5-6
- 7-8
- 9-9
- 9-10
- >10, give no.

SECTION D

14. How aware are you of the proposed changes to the Medicines and Related Substances Control Act which will make it compulsory to offer patients the choice of generic substitution? (Answer on a scale of 1-5 with 1 = very little, and 5 = everything)

- 1
- 2
- 3
- 4
- 5

15. Given that one of the changes will make it compulsory to offer the choice of generic substitution (where available) of the more expensive branded drugs, please provide one response for each of the statements below: (1 = strongly disagree, and 5 = strongly agree)

15.1 Patients will ultimately benefit from being given the choice of generic substitution.

- 1
- 2
- 3
- 4
- 5

15.2 This practice will lead to a lowering of the quality of health care in South Africa.

- 1
- 2
- 3
- 4
- 5

15.3 I am happy to replace scripts for ethical drugs without contacting or notifying the prescribing doctor.

- 1
- 2
- 3
- 4
- 5

15.4 This practice will undermine the autonomy of doctors.

- 1
- 2
- 3
- 4
- 5

15.5 This will lead to a change in marketing strategy for drug companies. They will now primarily target pharmacists rather than doctors.

- 1
- 2
- 3
- 4
- 5

16. Who do you think is best qualified to choose a specific branded / non branded drug once the choice of therapy has been made?

- Doctors
- Pharmacists
8 REFERENCES


15. Davidson, RA, *Source of Funding and Outcome of Clinical Trials*, Journal of General Internal Medicine, 1986, 1:115-8


http://faculty.washington.edu/momus/pharm.htm (20 May 2002)


