Chapter 6

Conclusions and Discussions

6.1 Discussion on findings

This research thesis includes a review and critical synthesis of literature relevant to the buying behavioural pattern for ethical or prescription medicines. Through an empirical investigation of the impact of generic drugs on the buying behavioural pattern and brand sustainability of ethical drugs in Western India, this research contributes to the overall knowledge of understanding the buying behaviour of ethical or generic drugs and the factors that contribute to the buying behaviour pattern of ethical drugs in Indian context. In addition, this research presents insight into the impact of generic drugs on buying behaviour of ethical drugs, is worthy of consideration by academics, industry professionals and other key stakeholders.

Major conclusions drawn on the hypothesis were:

H1: ***Relative influence of brand image of ethical drugs is more than the generic drugs on the prescription behaviour of medical practitioners.***

The result of investigation shows that there is no difference in relative influence of generic and ethical drugs on the prescription behaviour of medical practitioners. Thus the *first null hypothesis* is rejected.

There are factors, proposed in various studies, having an impact over prescription behaviour of the doctor. These include knowledge of drugs, drug costs and sources of information (Forster, 1991, Coleman, 2000 and Ryan, 1990), level of postgraduate medical education (Becker, 1972), number of doctors in the practice (Carrin, 1987), and attitudes towards generic and branded products (Carrin, 1987 and Zwanenberg, 1987).

This study supports the previous findings and suggests that the doctors normally prescribe a combination of both ethical and generic drugs with the same efficacy for a specific disease. This is based on the evidence that the Factor Analysis conducted on the doctors belief constructs provided *factor* **'brand decision criteria'** has relatively high coefficients for construct variables 'when I prescribe, I compare the costs of different medicine brands which have the same efficacy' (.467), 'I sometimes follow consultation from my known physicians in deciding the drug options for specific disease of my patients' (.528) and 'gifts, samples, promotional schemes and frequent visits by medical representative, helps me to decide my final choice of medicine brands for specific disease' (.769).

6.1.1 Doctor beliefs on prescription of medicines

They are generally rational and cautious while prescribing a medicine brand for a specific disease. They usually refer multiple sources of information to check the efficacy of the medicine brand. Sometimes, they refer to the other medical practitioners to consult about the medicine brand for a specific disease. They believe that relationship with the medical

representatives and pharmacists not only helps them in deciding a preference set of medicine brands but also assure them about the efficacy of drugs.

6.1.2 Medical Representatives beliefs on doctor's prescription

Medical representatives, who provide genuine information about their medicine brands and possess adequate knowledge, are more likely to receive doctor's prescription for their set of medicine brands for a specific disease. Doctors, apart from the efficacy of the drug also look at their cost, while prescribing the medicine brands for a specific disease. Promotions, gifts, samples and other obligations offered by the drug company does influence the doctors in their prescription behaviour. Frequency of visits of medical representative help in gaining trust of the doctor which, in turn, sets the final choice of medicine brands for prescription for a specific disease.

H2: ***Relative impact of brand image of ethical drugs is more than the generic drugs on the social benefits offered to the customers.***

The result of investigation shows that there is no difference in relative influence of generic and ethical drugs on the social benefits offered to the customers. Thus the *second null hypothesis* is rejected.

Patients normally prefer those physicians who demonstrate additional responsiveness and empathy by considering the patients' financial situation and the specifics of their health

insurance plan when choosing among drugs of similar efficacy for a patient's medical condition (Gönül, et al. 2001).

This study proposed that the patients do look for both ethical and generic medicines with the same efficacy for the treatment of a specific disease, to manage the cost of treatment. This is based on the evidence that the Factor Analysis conducted on the patients belief constructs provided *factor* **'rational and knowledge based'** containing construct variables 'Illness may take few days but will not aggravate due to the prescribed medicine' (.762), 'When the physician is prescribing you medicines, you are mostly not aware about its effectiveness' (.763), 'Prescription fee is worth paying because of the location and ambience' (.870), 'Prescription fee is worth paying because there is no other equally qualified and effective physician near-by' (.660), 'Prescription cost is because he/ she is located at posh area' (.865), 'Prescription cost is because of the ambience where the doctor sits' (.862), and 'I sometimes do ask for substitute medicines, in case the prescribed medicine in not available with the chemist near to my vicinity'(.536).

6.1.3 Patients belief on cost of treatment

Patients, after receiving the prescription from the doctor, sometimes inquire about the medicines from their known pharmacist to get their opinion about the prescribed drug efficacy. They normally stick to the medicines prescribed by the doctor. Sometimes they do ask for the substitute medicines having same efficacy and relatively more cost effective, in case the prescribed one is not available with the known pharmacist.

H3: ***Relative impact of ethical drug promotions to the medical practitioners is more than the generic drugs on the prescription process.***

The result of investigation shows that there is no difference in relative impact of promotion of ethical drugs and generic drugs on the prescription process of medical practitioners. Thus the *third null hypothesis* is rejected.

Past studies suggests that detailing may enable physicians to make careful trade-offs between costs and benefits for each patient, thus offering a more customized service and enhanced social welfare (Berndt, et al. 1994). There may be a threshold level of detailing and samples beyond which the effect becomes negative (Van Zandt, 1993). Physicians may show disinterest due to excessive detailing and samples and consequently unwilling to prescribe the drug. Detailing and samples have a mostly informative effect on the prescribers (Gönül, et al. 2001). Prescribing habits, today, tend to be more modern prescribing rather than old fashioned prescribing habits for cheap drugs (Carthy, et al. 2000). Switching physicians on the basis of an unsatisfactory experience related to drug costs is unlikely, but still the potential loss of patients' patronage could be a reasonable concern to physicians (Gönül, et al. 2001).

This study suggests that the doctors while prescribing medicine brand for a specific disease, consider the combination of ethical drug promotions from the medical representative, regular visits of the local pharmacists and inquiry from company's promotional ads and materials. This is based on the evidence that the Factor Analysis conducted on the doctor's belief constructs provided *factor* '**brand detailing**' comprises

of construct variables 'my decision on final choice of brands, is based on the regular visits from local retail pharmacists to request me for prescribing certain set of brands' (.604), 'I mostly prefer prescribing the medicine brands that are effectively promoted' (.638) and 'make detail enquiry about the medicine brands from company promotional ads & materials' (.552).

6.1.4 Prescription process of medical practitioners

They prefer medicine brand of the drug companies, which offers regular gifts, samples, and promotional schemes. The frequent visits by medical representatives and pharmacists help the medical practitioners to fix pre-determined set of medicine brands for a specific disease.

6.1.5 Influence of Pharmacists on prescription process

Pharmacists meet the doctors, who sits near-by their store, to fix a set of medicine brands for a specific disease.

6.1.6 Influence of Medical Practitioners on prescription process

Medical representatives, who provide genuine information about their medicine brands and possess adequate knowledge, are more likely to receive doctor prescriptions for their set of medicine brands for a specific disease. Doctors, apart from the efficacy of the drug also look at their cost, while prescribing the medicine brands for a specific disease. Promotions, gifts, samples and other obligations offered by the drug company does

influence the doctors in their prescription behaviour. Frequency of visits of medical representative help in gaining trust of the doctor which, in turn, sets the final choice of medicine brands for prescription for a specific disease.

H4: ***Relative impact of ethical drug promotions is more than the generic drugs on the pharmacist's preferences.***

The result of investigation shows that there is no difference in relative impact of promotion of ethical drugs and generic drugs on the preferences of the pharmacist. Thus the *fourth null hypothesis* is rejected.

Past studies proposed that the retailers with hefty margin push the products at the cost of customers and marketing professionals. Focus customers are retailers whose main concern is the margin. Margin fluctuates on fortnightly basis depending upon the availability of players and demand. These activities are purely a purchase function and are not related to marketing (Gonul, et al. 2001).

This study investigates that pharmacists while procuring the generic or ethical medicine normally consider the preferences of the doctor nearby their store, the frequency of the prescriptions that they receive and the kind of preferences of patients that they receive. This is based on the evidence that the Factor Analysis conducted on the pharmacist's belief constructs provided *factor* '**cost of treatment**' comprises of construct variables 'I visit doctors near-by my store to fix the set of medicine brands, their ranges and quantity' (0.452), 'patients normally look at the cheaper substitute of medicines for normal illness'

(0.891), 'patients normally do seek my advice for the cheaper substitute of medicines mentioned in the doctor's prescription slip' (0.839) and 'patients of middle or lower income class, who regularly visit my store, purchase the medicines of lower price for normal illness or based on the doctor's prescription' (0.754). Similarly, *factor* **'preferences in medicine brands'** comprises of construct variables 'selection of medicine brands is normally done based on the specialty and preferences of the doctor' (0.610), 'preferences of brands by the doctors practicing nearby my store is the major reason to keep specific set of medicine brands' (0.641) and 'I normally look at the frequency of prescription slips that comes and the medicines prescribed, to decide on the stock to procure' (0.740).

6.1.7 Preferences of Pharmacists

Pharmacists normally keep substitute medicines or generic version of the original formulation with the same efficacy. They do this to carry a range of medicines for a specific disease. These generic medicines fetch better margins and sales volume to the pharmacist. They prefer those medicine brands which offer gifts, promotional schemes, trade discounts and relatively better margins while deciding on the range of medicine brands for a specific disease.

Patients also, sometimes, do ask for a generic version of the prescribed medicine as these substitutes are relatively cheaper. Thus, pharmacists carry the regular prescribed medicines and their generic version. Pharmacists, while deciding on the purchase of the set of medicine brands for a specific disease consider the specialty of the doctor, the

preferences of doctor, the frequency of prescription slips that comes to their store counter and the medicines prescribed.

6.2 Implications of the study

The results of this study have clear implications for the Indian pharmaceutical manufacturers, consumer groups and the pharmacists. Furthermore, these findings have important implications for those interested in further understanding the impact of generic drugs on the buying behaviour pattern of ethical drugs.

6.3 Response of the doctors

6.3.1 The process of consultation

The findings of the study were that the medical practitioners normally read medical literatures besides looking at the drug advertisements to update with the latest drug developments. They are generally rational and cautious while prescribing a medicine brand for a specific disease. Before prescription, they normally prefer listening to the patient's personal belief about their illness besides referring the published finding regarding efficacy of the medicine brand.

6.3.2 Sources of information

The doctors usually refer multiple sources of information to check the efficacy of the medicine brand. Sometimes, they refer to the other medical practitioners to consult about the medicine brand for a specific disease. The study suggests that the doctors adopt

different approach for gathering information about the medicine brands for a specific disease due to different educational background

6.3.3 Relationship with the medical representatives and pharmacists

They believe that relationship with the medical representatives and pharmacists not only helps them in deciding a preference set of medicine brands but also assure them about the efficacy of drugs. The study suggests that the frequent visits by medical representatives and pharmacists help prescribers to fix pre-determined set of medicine brands for a specific disease.

6.3.4 Preference of medicine brands

The study suggests that the doctors sometimes compare the cost of medicine brands with same efficacy while prescribing medicines for a specific disease. They prefer medicine brand of the drug companies, which offers regular gifts, samples, and promotional schemes. These findings were further verified by probing the doctors regarding the preference factors for prescribing medicine brands. The factors like reputation of the drug manufacturer, efficacy of the drug, cost of drug and the economical brand were the major preference criteria for prescribing a specific set of medicine brands for a specific disease.

6.3.5 Implications

The doctors need to be rational and cautious while prescribing a set of medicine brands for a specific disease by referring to multiple sources of information including other

practitioners to check the efficacy of the medicine brand. Doctors should consider the impact of promotions on prescription decisions and its impact on the cost of patient treatment.

6.4 Response of the patients

6.4.1 Relationship with the medical practitioner

The study suggests that the patients always give priority to the doctor's advice over home treatment. One of the major reasons for visiting the doctor, suggested in the study, is the seasonal illness like fever, cold etc. Most patients normally inquire about the reputation and background of the doctor before visiting them (62.8 percent) and normally prefer their family doctor for the treatment. Patients normally seek information about the experience of the doctor, while visiting for the first time. The study finding regarding the major cause for dissatisfaction among the patients with the present doctor was that the prescribed medicines were not effective.

6.4.2 Perception about the prescription behaviour of the doctor

The doctor identifies type of prescription like the dosage strength and the set of drugs based on the age of the patient, as suggested by the study. This means that the prescription cost for the younger patient may relatively vary compared to the older patients. The study also suggests that the female patients have relatively more faith on the doctor's prescription and guidelines and have relatively less knowledge about the efficacy of the drug compare to the male patients. The patients with higher education

have a better understanding about the prescription behaviour of doctor. The doctors normally differ in their prescription approach and tend to stress more for a revisit by the younger patients than the older ones. The patients with relatively larger family size may be visiting doctor more regularly than the patients with smaller family size. As the patient with larger family size visit frequently to the doctor, there is relatively greater possibility to develop trust over the treatment and its price worthiness.

6.4.3 Relationship with the local retail pharmacists

The study finding suggests that most of the retail pharmacists do dispense substitute medicine brands in case the prescribed medicine is unavailable. Patients, after receiving the prescription slip from the doctor, sometimes inquire about the medicines from their known pharmacist to get their opinion about the prescribed drug efficacy.

6.4.4 Perception about the prescription cost of the doctor

Major finding of the study was that the patients are normally price conscious for the prescribed medicines. The patients, who are having relatively larger number of members in the family, are tend to be comparatively more cautious about the prescription cost of the doctor than the patients with smaller family size. The prescription cost for the younger patient may relatively vary compared to the older patients. Patients with older age have relatively more rational approach of thinking towards the prescription cost than the younger ones. The doctors are relatively more cautious about the cost of medicine brands prescribed to the patients with relatively less income for a specific illness. Doctors need to display relatively higher moral and professional obligation while treating the

patients with relatively less income. The study suggests that the patients believe that the treatment cost is mainly because of the location and ambience of the place where doctor sits.

6.4.5 Rationale for the prescription fees of the doctor

The study suggests that the patients with relatively higher level of education will be able to understand better about the complexities of the prescription approach of a doctor and tend to be more rational thinkers regarding the prescription fee of the doctor and the prescription cost to them. Patients pay the prescription fee, as asked by the doctor, with an expectation that the prescribed medicines are effective and there is no other equally qualified or effective doctor near-by.

6.4.6 Knowledge about the efficacy of medicines

The study suggests that the younger patients relatively relying more on the medicines for relief from the illness whereas older ones believe that illness will take its own time but medicines will restrict the aggravation of a disease. Patients with low income are relatively less exposed and are not aware about the efficacy of medicine brands as they rely less on medicine treatment than on homely treatments for normal illness.

6.4.7 Knowledge of the substitute medicine brands

With higher level of education of the patient, the possibility of substitution of medicine brand mentioned in the prescription is relatively higher as the study suggests. They

normally stick to the medicines prescribed by the doctor. Sometimes they do ask for the substitute medicines having same efficacy and relatively more cost effective, in case the prescribed one is not available with the known pharmacist.

6.4.8 Implications

The doctor identifies type of prescription like the dosage strength and the set of drugs based on the age of the patient. Patients are normally cautious while paying the prescription fee, as asked by the doctor, with an expectation that the prescribed medicines are effective and there is no other equally qualified or effective doctor near-by. Patients with higher education may seek substitution of prescribed medicine brands having same efficacy and cost effective.

6.5 Response of the pharmacists

6.5.1 Stock management at the stores

The study suggests that all the pharmacists carry the stock for vitamins and nutritional care products, and alternative medicines in their stores. Pharmacists keep higher quantity in their stores for alternative medicines. Among the product categories carried by the pharmacists, vitamins and nutritional care products contributes relatively higher proportion in the monthly income and alternative medicines are relatively fast moving products from the store counter of the pharmacist as suggested by the study. Most of the pharmacists procure stock on cash (49.8%). Pharmacists with relatively better education can more effectively track their stock of medicine brands based on the margins offered, fast and slow moving trends. Pharmacists with better education are more likely to look at

the shelf life of specific medicine brands while deciding on the stock levels. Pharmacists with higher experience are relatively more cautious in tracking the fast or slow moving trends of the medicine brands and tracking the shelf life of specific medicine brand while deciding the stock level.

6.5.2 Stock of medicine brands

The study suggests that the education level of the pharmacist had significant influence on the understanding of the specialty and preferences of the doctor, stock movement of the specific set of medicine brands, promotional schemes and trade discounts offered on the medicines, cost of treatment and the dynamics in keeping the generic version of the specific set of branded medicines. Higher the education better is the understanding of the pharmacist about the rationale of medicine brands prescribed by the doctor for a specific disease as suggested by the study. Pharmacists carry a range of medicines for a specific disease. These generic medicines fetch better margins and sales volume to the pharmacist. They prefer those medicine brands which offer gifts, promotional schemes, trade discounts and relatively better margins while deciding on the range of medicine brands for a specific disease.

6.5.3 Sources of information for keeping medicine brands

Pharmacists, who are having relatively more experience and higher education, regularly refer to the latest index of Chemist Association circulars for procuring the medicine brands.

6.5.4 Stock preferences of medicine brands

The study suggests that the pharmacists decide on the range of both generic and branded versions of the same formulation with marginally the same efficacy for their store based on the understanding of the category of diseases handled by the doctor and the preference set of the doctor for a specific disease. But this decision is a function of income level of the pharmacist. Pharmacists with better education are more likely to carry an effect range of generic version of the formulation to offer medicine range, for a specific disease, to the patients. The pharmacists with relatively lesser experience in the profession, normally stock only those medicine brands which are most frequently being prescribed by the doctors nearby their store. Pharmacists with relatively more experience, keep larger range of drug and non drug items to increasing the frequency of visits of the patients to their stores. Pharmacists with relatively higher experience, keep comparatively larger range of generic version of the same formulation prescribed by the doctors as suggested by the study.

6.5.5 Impact of generic and the branded version on the cost of treatment of patient

The years of practice in the profession of dispensing and selling of the medicines helps in understanding the efficacy of generic version and implications, of using these as substitute for the branded medicines, on the cost of treatment for the patients as suggested by the study. Pharmacists with better education are more likely to get patients who may seek their advice for a generic version or cheaper substitute of medicine brands for normal illness. Pharmacists with higher experience are relatively more cautious in comparing the cost and efficacy of the medicine brands, while procuring the set of

medicines for a specific disease. The study finding was that the patients may seek advice for the cheaper substitutes from the pharmacists with relatively higher experience. Pharmacists with relatively lesser experience may find comparatively more patients of middle or lower income class, purchasing mostly cheaper medicines and for normal illness.

6.5.6 Implications

Pharmacists with relatively higher education and experience stock the medicine brands based on the margins offered and fast or slow moving trends. Pharmacists are more likely to look at the shelf life of specific medicine brands while deciding on the stock levels.

6.6 Response of the medical representatives

6.6.1 Opinion about doctor and medical representative relationship

The study suggests that doctors relatively prefer the medicine brands which are supported by authentic technical information provided by the medical representatives. The doctor inclined more towards the medical representative with better education and experience.

6.6.2 Perception on prescription behaviour

Medical representative with higher education develop an ability and knowledge which get acknowledged with doctors response in terms of prescribing their medicine brands as suggested by the study.

6.6.3 Reasons of visit of medical representatives to the market

The study suggests that the medical representative usually visit doctors to offer the promotional schemes of their company and regularly meet pharmacists to insist them to keep the stock of their medicine brands.

6.6.4 Implications

The doctors relatively prefer those medicine brands for prescription which are supported by authentic technical information and the professional background of medical representative as suggested by the study. Thus, the medical representatives need to maintain a healthy professional relationship with doctors and pharmacists.

6.7 Directions for the future research

This study attempted to analyze various factors that motivate the prescription behaviour of the medical practitioners and measure the impact of generic drugs on the buying behaviour pattern of ethical drugs; and the benefits offered by them to the society.

During the course of this study, some areas had been identified, which offer scope for the further meaningful research that may stress upon the complexities of brand positioning of ethical drugs and its impact on the prescription behaviour of medical practitioners.

1. An empirical study on the impact of generic versions over the brand positioning of ethical drugs in the Indian context.
2. A study segmenting the medical practitioners by their qualification can be designed to assess their prescription behaviour and then integrating the

information into a comprehensive and significant model to explain their collective and independent prescription behaviour.

3. A study segmenting the medical practitioners by their practicing years can be designed to assess their prescription behaviour and then integrating the information into a comprehensive and significant model to explain their prescription behaviour.
4. A study segmenting the patients by their years of age can be designed to assess their preferences and then integrating the information into a comprehensive and significant model to explain their prescription behaviour.
5. A study segmenting the patients by their gender can be designed to assess their preferences and then integrating the information into a comprehensive and significant model to explain their collective prescription behaviour.
6. A study segmenting the patients by their family size can be designed to assess their preferences and then integrating the information into a comprehensive and significant model to explain their collective prescription behaviour.
7. A cost analysis may be carried out comparing the conventional retail pharmacists with the new retail formats to assess their cost effectiveness in Indian context.
8. Segmenting the pharmacists on their store type, their comparative responses can be measured on various belief constructs to assess the differences in their preferences for medicine brands.
9. A study segmenting the medical representatives by their years of experience can be designed to measure their comparative responses on various belief constructs to assess the differences in professional approach.

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