HEALTH CARE CONSULTANTS "GYNECOLOGISTS" PRESCRIPTIONS PREFERANCES FOR MULTI-NATIONAL AND NATIONAL BRANDS IN PHARMA INDUSTRIES; A CASE STUDY OF PESHAWAR, KP*

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ABSTRACT

The objective of the study was to test the gynecologists prescriptions for multi-national and national brands in pharma industries. The study was conducted in the public sector hospitals in the city of Peshawar. Data is collected using pre-developed survey measure for the variables of price, product, promotion, place, and prescribing behavior. Our results shows that consultants mostly prescribe drugs which are not costly. Furthermore, promotion made by the pharmaceutical companies sales representatives influence gynecologist prescriptions preference. Additionally, medicine country of origin, social factors, and availability of resources also influence drugs prescription.

***Keywords**: Prescription, Pharmaceutical Industry, Pakistan.*

INTRODUCTION

Background of the study

The field of prescribing drug therapy is highly specialized in developed countries and the state has direct control over it but in countries like Pakistan mainly educated population dependent on the advice of a healthcare consultant (Azhar and Ibrahim, 2018). Though there is trend of self-medication yet due to awareness programs by the government and social media the general public in general and educated in particular depend on specialized health care consultant (Sayeed,1996) .

According to Rochon and Gurwitz (1998), healthcare consultant`s writing of a prescription is the most frequent medical intervention and that healthcare consultant has the authority to prescribe whatever medicines are needed. All these medicines are chemically poisons so great care is taken with caution while giving prescriptions. The healthcare consultants and pharmaceutical companies both equally contribute in the promotion of these drugs to the end user. Some of the major factors in this regard remain very influential for health care

consultants during setting their preferences for multinational and national/local pharmaceutical brands (Birn, Pilly and Holtz, 2017). These are prices of the medicinal brand, services accompanied with medicinal brand, availability of the medicinal brand in the market, regular follow up visits of the pharmaceutical representatives, government policies efficacy and safety of the medicinal brand.

Statement Problem

Literature so far suggest that pharmaceutical promotional mix predict how consultant prescribe drugs in the developing countries. Today the doctor's community is under the great criticism by the public, society, and press that their prescriptions are based on financial motives provided to the doctors by the pharmaceutical companies. To find out the respective association used in formulating pharmaceutical strategies for the achievement of their long term organizational objectives. In the light of the above mentioned statement of problem following are the research questions.

Objectives of the Study

- To find the healthcare consultant's price preferences (i.e. Price) while prescribing brands of either multinational or National companies.
- To study the role of drug quality in prescribing the formula.
- To check availability of drugs at market prescribed by consultants and its substitutes if there is a chance of non-availability of drugs
- To investigate Physicians prescription preferences of different drugs with different country of origins.

Significance of the Study

The study conducted may be mostly having significant importance for the pharmaceutical product producer, pharmaceutical product prescriber and pharmaceutical product payers. This study may also contribute in significant manner during policy making by the regulatory authorities.

The study results are unique because of the fact that specifically the health care consultant's preferences medical colleges teaching institutions of Peshawar remained ignored and no considerable attention has given, at the time of revision of regulatory health policies. This research has identified the association between health care consultant's preferences with

different options influential upon their preferences. Furthermore, which option may be of

more importance while achieving the organizations objectives by pharmaceutical companies? Based on conclusion of this study suggestion are given for the achievements of organizational objectives, and other related requirements.

REVIEW OF LITERATURE

Physician's Prescribing Behavior

In organizational context, autonomy is given for various reasons however, usually autonomy is assigned because of complicated nature of work and expanded size of tasks. Sometimes principal delegate authority to its agent but it can create conflict of interest as interest of principal and agent may clash for various reasons. A situation can arise where agent may adopt opportunistic behavior and may damage the wellbeing of the principal. So there are various problems related to the agency relationship between principal and agent. The relationship between hospital administration and doctor is of that of principal agent. Sheikh (1996) commented that without logic and low quality prescribing practices has been identified in Pakistan.

While Sayecd (1996) further explain that without logic means treatment irrelevant to diagnosis, less know how about the medication as per guidelines for the management of various diseases, inappropriate dosage and prescribing medicines for non-specified duration, have already been reported in different parts of Pakistan.

As Chetley A (1993) argued above that the information provided by the pharmaceutical companies in form of highlighting prices, services, availability of the drug, efficacy and safety of their brands, government interventions, and ensuring regular follow up through sales representatives to healthcare consultants are very often the primary sources of setting healthcare consultant preferences for prescribing any specific brand. The healthcare consultants and pharmaceutical industry interaction appears to affect prescribing behavior. Pharmaceutical companies sponsored academic events advocate the sponsor's drugs compared with other academic events. The increased prescriptions rates are directly related with attending such type of academic events. Similarly accepting cash in form of donations for travel or lodging for academic events like international or local level symposia is also related with the prescription preferences of the health care consultants.

According to Jones et al (1996) approximately 88% of the medications are prescribed by their brand names in Pakistan by the health care consultants.

Apart from the above mentioned factors influencing healthcare consultants prescribing preferences social factors, availability of resources, training opportunities, personal and professional development of healthcare consultants are also important factors to consider relationship between healthcare consultants and pharmaceutical industry. It is important to mention that all of the above mentioned factors are questioned as

What means majority of healthcare consultants use to continue their prescribing preferences with prices, quality, availability, efficacy, safety, regular follow up or government interventions? The moral and ethical obligations apply on the both sides being specialized in their own fields. Managerial, Educational and regulatory intervention to vindicate the prescribing exercise is the duty of professional bodies and government authorities. The main importance is on the safety of a patient which should not be conceded just for the sake of industrial growth or for personal growth.

RESEARCH METHODOLOGY

Universe of the Study

All doctors working in the hospitals at Peshawar are the universe of the study. In this study we focused on only public sector doctors. Due to limited time period, and keeping in view the hospitals policy constraints only eight hospitals Lady Reading Hospital (LRH), Khyber Teaching Hospital (KTH), Hayatabad Medical Complex (HMC), Naseer Teaching Hospital (NTH), Moulvi Gee Hospital (MGH), Government Maternity Home Hospital (GMH), Kulsoom Maternity Home (KMH) and Health Care Center (HCC) Peshawar have been chosen on the basis of non-probability sampling approach. These hospitals were selected for this study because they are the major institutes that give the services of healthcare in KP province. The sampling units were all the gynecologists working in the Gynae wards for the study in hand. The gynecologists were considered because they are heads and the key opinion leaders in these major hospitals, they are also considered as the competent authorities in their specialties.

A list of all gynecologists was retrieved from the concerned Gynae wards which were composed of all house officers, trainee medical officers, senior registrars, assistant professors, associate professors and even some of the professors of gynecology wards who are providing services in these major hospitals. The total number of the sample size was 390 gynecologists from whom the data was collected for this study. This study used convenient sampling technique for getting information, and those doctors whose availability is provided at these hospitals in morning, evening and night shifts for data collection purposes because of

the busy schedule of these doctors in different surgery and delivery cases, it was difficult to get information precisely, therefore, morning, evening and nights shifts were considered to be the most suitable to collect the precise data.

Questionnaire was distributed among 390 respondents in which 311 were returned and 297 were found correct for analysis, so the final sample size on which the analysis were done is 297. For the purpose of getting required sampling, the method which has been used in this study that was a proportional allocation method which is given as:

$n_i = (n/N) \times N_i$ (for i = 1, 2, 3)

Where,

n = required sample size

n_i = number of sampled respondents from the each hospital

N = total number of healthcare consultants working in the selected hospitals (size of population)

N_i = total number of healthcare consultants in the each hospital

Detailed information about the number of healthcare consultants and the sampled staff is given in.

Primary data is utilized in this study and collected using the survey questionnaire. The questionnaire was adapted from the mentioned authros (Sayandhan, Kodithuwakku & Gunaratne, 2008; Kalaskar et al., 2012; Cenguz et al., 2007; Yoo et al., 2000; Bradley, 2001).

Table 1: *Reliability analysis*

Variables	**No of Items**	**Source**	**Chronbachs Aplha**
Price	5	Sayandhan, Kodithuwakku, and Gunaratne (2008)	0.712
Product	7	Sayandhan, Kodithuwakku, and Gunaratne (2008)	0.769
Promotion	10	Sayandhan, Kodithuwakku, and Gunaratne (2008)	0.711
Place	4	Sayandhan, Kodithuwakku, and Gunaratne (2008)	0.78
Prescribing behavior	22	Theodorou et al. (2009)	0.823

RESULTS

Frequency distribution of gynecologist's preferences regarding different category of medicinal products by national and multinational companies are displayed in Table 4.1. It is evident that majority of the gynecologist's preferred national companies both in iron therapy and calcium. Similarly, in case of antibiotic and multivitamins the gynecologist's multinational companies.

Table 2: Frequency distribution of gynecologist's preferences regarding different ategory of medicinal products

Company	Iron Therapy	Antibiotic	Multivitamin	Calcium
MNC	101 (34)	148 (49)	109 (36.6)	140 (47)
NC	196 (66)	149 (50)	188 (63.4)	157 (53)
Total	297 (100)	297 (100)	297 (100)	297 (100)

MNC = multinational company, NC = national company; the values in parentheses indicate the percentage while without parentheses are the counts.

Table 4.3 shows that the gynecologist's preferences for multinational brands are low as compared to the national companies manufactured iron therapy. Almost 66 % of health care consultants prefer national companies manufactured iron therapy while almost 34 % of gynecologist's prefer multinational company's iron therapy.

However in case of prescribing antibiotic therapy 49 % of gynecologist's are preferring multinational companies products while the remaining almost 51 % prefer nationally manufactured antibiotic therapy

Similarly in case of prescribing multivitamins more 36.6 % gynecologist's prefer multinational companies' brands while only 63.4 % gynecologist's prefer national brands.

Unlike the above mentioned two classes i.e. antibiotic and multivitamins the gynecologist's prefer national companies in prescribing calcium class.

Table 3: *Frequency distribution of gynecologist's preferences for multinational and national companies in terms of different attributes*

Variable	**Iron therapy**	**Antibiotic**	**Multivitamins**	**Calcium**
Efficacy	180 (66.6)	185 (62.2)	140 (47.1)	145 (48.8)
Safety	25 (8.4)	30 (10.1)	24 (8)	40 (13.4)
Price	20 (6.7)	46 (15.4)	90 (30.3)	40 (13.4)
Regularity of	2(0.6)	2(.6)	6 (2)	20 (6.5)
Services	35 (11.7)	7(2.3)	23 (7.7)	26 (8.7)
Influentially of Seniors	31 (10.4)	23 (7.7)	10 (3.3)	26 (8.7)
Any Other	4(1.3)	4(1.3)	4(1.3)	0
Total	297 (100)	297 (100)	297 (100)	297 (100)

The table shows that during prescribing iron therapeutic class more than 66% of the gynecologist's prefer efficacy as their major priority along service as their second priority with 25 % response. While the rest of various options are negligible. Which means that there association is not as in case of price and efficacy and safety.

Similarly in response to the above mentioned question in case of antibiotics again the gynecologist's declared the efficacy as their top priority with 62.2 % while price in terms of

economy as their second priority with 15.4 %. However a few of them also mentioned safety of the product as their priority which means efficacy of the product. Influentiality of their seniors also account for their 7.7 % preferences.

In case of prescribing multivitamins 47.1 % of the gynecologist's preferred the efficacy of the product as their main priority for prescribing any brand of either company majorly. While 30.3 % of the gynecologist's prefer price in term of affordability as their second priority. However influentiality of the senior most gynecologist's account for 3.3 % of their preferences.

The response of gynecologist's in case of prescribing calcium remained the same as in case of the above mentioned segment. They preferred effectiveness of a product as preliminary and economical prices as their secondary priority. As in case of other classes the remaining variables did not contribute to a great extent in their mind set.

Table 4
Frequency distribution of gynecologist's preferences decisions in advance about multinational and national companies

Scale	**Frequency**
Always Often Occasionally	100 (33.6)
Seldom Never	70 (23.5)
Total	50 (16.8)
	37 (11.7)
	40 (13.4)
	297 (100)

As far as the gynecologist's in advance pre mindset is concerned more than 32% set in advance. While more than 40% opposed to pre-setting. However 23.5 % healthcare consultants often set their minds in advance before prescribing any brand of a specific company and 16.8 % make up their priorities on the spot for prescribing any specific brand of a specific company.

Table 5

Table 5: If the brand of the preferred company is not available do you prescribe another brand?

Iron Therapy		**Antibiotic**	**Multivitamin**	**Calcium**
No	18 (6)	57 (19.2)	17 (5.7)	49 (16.4)
Yes	279 (94)	240 (80.8)	280 (97.3)	248 (83.6)
Total	297 (100)	297 (100)	297 (100)	297 (100)

Almost 94 % gynecologist's switch their minds to another brand if the already prescribed brand by them is not available outside in the market. Thus non availability of the preferred brand is changing their preferences to the available brand.

Similarly in case of antibiotics the gynecologist's change their preferences only if their preferred brand is not available outside in the market. 80.8 % prefer changing their priorities and only 19.2 do not change their priorities.

The gynecologist's change their preferences in case of multivitamins as well if the prescribed multivitamins are not available in the market. As 97.3 % of gynecologist's prefer the availability of the brand while only 5.7 % of the gynecologist's do not change their priorities even if the prescribed brand is not available

In case of prescribing calcium the 83.6 % gynecologist's change their minds to those companies' brands which are freely available outside in the market. While only 16.4 % still d not change their preferred brands of either multinational or national company.

Table 6: *When you prescribe the above-mentioned products, you decide in advance about the specific brand?*

	Frequency	**Percent**
Always	76	24.6
Often	96	31.1
Occasionally	52	16.8
Seldom	24	7.8
Never	61	19.7
Total	309	100.0

Most often majority of the gynecologist's have their own preferences for a specific brand of either MNC,s or national companies in advance i.e. 23.5 % of gynecologist's decide in advance that whether a MNC's brand or NC,s brand . Always gynecologist's keep on prescribing their preferred brands as long as these brands remain available in the market i.e. while occasionally 16.8 % of gynecologist's decide in advance about their specific priorities.

However some of them i.e. 13.4 % of the gynecologist's never decide in advance about their specific brand they will prescribe.

Table 7: *If (the formula) of your preferred brand manufactured by your preferred company is not available do you prescribe the same (formula) manufactured by other company?*

Iron Therapy			**Antibiotic**		**Multivitamin**		**Calcium**	
	Frequency	**%age**	**Frequency**	**%age**	**Frequency**	**%age**	**Frequency**	**%age**
No	37	12.4	52	17.5	48	16.2	43	14.6
Yes	260	87.3	245	82.5	249	83.8	254	85.4
Total	297	100.0	297	100.0	297	100.0	297	100.0

In case of iron therapy majority of the gynecologist's change their preferences to the company whom products are available instead of i.e. 87.3 % of health care consultants switch their priorities to another brand.

Similarly is the case with antibiotics, multivitamins, and calcium. If the gynecologist's prescription is not reflecting in the market, soon they change their priorities to the competitors who are manufacturing the same formula with a specific brand name. This can be true in case of both MNC,s and NC,s.

Table 8

If you come to know that the brand that you prefer is produce by another country, which is under developed, will you still prescribe it?

	Frequency	**Percent**
No	137	46.1
Yes	160	53.9
Total	297	100.0

The health care consultants also consider country of origin branding in their prescription for multinational brands and national brands. As the table show that 53.9 of gynecologist's do consider that whether the brand they are prescribing is produced by developed country or not. However 46.1 % of them do not consider that whether country of origin is developed or under developed.

Table 9: *Will you switch to another company if the prices of products manufactured by your preferred company are significantly increased in the following categories?*

Iron Therapy			**Antibiotic**		**Multivitamin**		**Calcium**	
	Frequency	**%age**	**Frequency**	**%age**	**Frequency**	**%age**	**Frequency**	**%age**
Don't Switch	63	21.2	112	37.7	80	27.1	100	33.7
Switch	234	78.8	185	62.3	217	729	197	66.3
Total	297	100	297	100	297	100	297	100

The gynecologist's significantly change their prescribing priorities in case of price increase. They immediately start switching to the brands which are not costly as compared to the one they were previously prescribing in case of all classes i.e. iron therapy, antibiotic ,multivitamins ,and calcium drugs. This may be true in case of both multinational and national companies.

Table 10: *Will you switch to another company if the prices of products manufactured by your preferred company are significantly reduced in the following categories?*

Iron Therapy			**Antibiotic**		**Multivitamin**		**Calcium**	
	Frequency	**%age**	**Frequency**	**%age**	**Frequency**	**%age**	**Frequency**	**%age**
No	122	41.1	175	58.9	127	42.7	155	52.1
Yes	175	58.9	122	41.1	170	57.3	142	47.9
Total	297	100	297	100	297	100	297	100

The gynecologist's prefer those companies who reduce their prices in 58.9 % cases while only 41.1 % gynecologist's do not prefer even if the prices are decreased in case of prescribing iron therapy.

In case of antibiotics 58.9 % gynecologist's do not prefer to switch to other companies brands who reduce their prices while 41.1 % do consider price decrease as a major factor while switching to the brands of either multinational or national companies. The reason in this case may be the efficacy of the antibiotic which is being preferred by the gynecologist's over the price of a brand.

Again in case of multivitamins 57.3 % gynecologist's prefer price of a brand over the efficacy like iron therapy. While only 42.7 % health care consultants do not prefer price of the brand over efficacy of the brand of either a multinational company or of a national company.

In case of prescribing the calcium drugs 52.1 % gynecologist's prefer quality over the prices of the brands. While 47.9 % gynecologist's prefer prices over the efficacy of the brand.

Table 11: *If you switch then which other company will you prefer for the purchase of the following products?*

Companies	Iron Therapy		Antibiotic		Multivitamin	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
MNC	168	54.4	181	58.6	154	49.8
NC	141	45.6	128	41.4	155	50.2
Total	309	100.0	309	100.0	309	100.0

MNC = multinational company, NC = national company

Table 12: *When you don't decide in advance about the brand or company you prefer, you enquire about which of the factor from sales representatives?*

Attribute	Frequency	Percent
Efficacy	146	49.2
Safety	30	10.4
Price	81	27.5
Regularity of Rep's	65	1.9
Company Services (Acad./Personalized)	21	.6
Influentially	24	6.5
Govt. Policies	21	.6
Any other	9	3.2
Total	297	100.0

This table again validates the previous analysis of the gynecologist's that in 49.2 % cases efficacy is their major priority, in 27.5 % cases prices of the brands are their major priority. 1n 10.4 % case the gynecologist's prefer safety of the drug which is related to the efficacy of the drug. However influentially of the senior health care consultants also matter in 6.5 % cases. The rest of other variables do not contribute to a great extent in setting health care consultants priorities for any specific brand.

Table 13: *During prescribing the following brands, indicate the importance you attach to each of the following factors by ranking them, assigning 1 t highly important factor and 3 to the least important factor.*

Companies	Iron Therapy		Antibiotic		Multivitamin		Calcium	
	Frequency	%age	Frequency	%age	Frequency	%age	Frequency	%age
Price	118	39.8	92	31.1	137	46.0	114	38.5
Brand Name	151	50.8	187	63.1	135	45.6	65	55.4
Country of Origin	28	9.4	18	5.8	25	8.4	18	6.1
Total	297	100.0	297	100.0	297	100.0	297	100.0

In case of iron therapy prescriptions 50.8 % gynecologist's are brand conscious 39.8 % health care consultants are price conscious while only 9.4 % health care consultants are interested in

country of origin like factor. It means that branding of the iron therapy is highly important followed by price as second important factor while country of origin is least important for the gynecologist's in setting their priorities for a specific brand of either a multinational or national company.

In case of antibiotic prescriptions 63.1 % gynecologist's are brand conscious 31.1 % gynecologist's are price conscious while only 5.8 % gynecologist's are interested in country of origin like factor. It means that branding of the antibiotics is highly important followed by price as second important factor while country of origin is least important for the gynecologist's in setting their priorities for a specific brand of either a multinational or national company.

In case of multivitamins which is not in fact a treatment but instead is a food supplement, again brand name of the product account for setting gynecologist's preferences in 45.6 % cases which is almost equal to the 46 % contribution of the price of the product.

In case of calcium prescriptions 54.7 % gynecologist's are brand conscious 3854 % gynecologist's are price conscious while only 6.1 % gynecologist's are interested in country of origin like factor. It means that branding of the calcium is highly important followed by price as second important factor while country of origin is least important for the gynecologist's in setting their priorities for a specific brand of either a multinational or national company.

CONCLUSIONS

Based upon findings of the present study, the following conclusions are drawn:

- Most often the drugs are prescribed when these are not costly.
- More costly products are prescribed only when the quality of economical products is questioned.
- Gynecologist's prescription preferences are influenced by promotional claims made by sales representatives in their regular visits.
- Country of origin and culture are also the important factors for influencing the prescribing preferences of gynecologist's.

- Social factors, availability of resources, training opportunities, personal and professional development of gynecologist's are also important factors for influencing prescribing preferences
- The increased prescriptions rates are directly related with attending various type of academic (Pharmaceutical companies sponsored) events.
- Similarly accepting cash in form of donations for travel or lodging for academic events like international or local level symposia is also related with the prescription preferences of the gynecologist's

There is no proper knowledge reassessment related to drugs promotional tactics at the level of all practicing gynecologist's in Pakistan as per international standards which is compulsory.\

Managerial Implication

The managerial implication is that pharmaceutical firms should properly focus on marketing mix in order to get more market share. The findings implies that pharmaceutical industry need to revisit their existing prescription and marketing mix practices.

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