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Evaluation of cost-effective therapy by comparing the prices of different brands of same formulations in Pakistan

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ABSTRACT

The current study was carried to evaluate the cost-effective therapy by comparing the prescribe research brand with the alternate available generic brand in the market. Overall, forty prescriptions were selected for Cardiovascular diseases, Diabetes, Neurological disorders, and pediatrics. Ten for each specialty, and were analyzed for cost effectiveness. The analyze data shown that there is a significant difference in the cost of prescribed and alternate available marketed brands, because in Pakistan the medicines are prescribed through brand names which is the major factor. The data were collected from different regions/parts of Pakistan from number of public and private sector hospitals and retail pharmacies impacting the poor patients and LMICs. The results show that there is a huge gap in the price of different brands in Pakistan. For CVDs, the possible maximum reduction in the cost of all prescriptions by choosing alternative brands is 66%. For neurological disorders 47%, for diabetes and pediatrics are 21% and 43% respectively it is concluded that there is a need of clear and strict policies considering the price of branded medicines in Pakistan. It is suggested that the best solution for these problems will be the implementation of generic prescription and utilizing the expertise of the pharmacists in health care system of Pakistan.

Keywords: Research brand; Alternative generic brand; Prescriptions; Non-Communicable Diseases

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INTRODUCTION

The use of generic medicines, compared to their branded counterparts, has the potential to substantially reduce out-of-pocket expenditure on drugs for patients with chronic diseases and low-income population. Generic prescription drugs are therapeutic and serve the same purpose as brand name drugs, but they are less expensive when compared to brand-name drugs. The Food and Drug Administration (FDA) examines generic drug formulation and if it finds them to be suitable will approve them as therapeutically equivalent to brand-name drugs in terms of safety, strength, and quality (as cited in Haas et al., 2005). Substituting generic drugs for more expensive brand-name prescription drugs will provide savings for the drug-consuming

population (Haas et al., 2005). Due to the rising cost of healthcare stemming in part from the cost of prescription drugs and the cost of managing chronic health conditions, healthcare policy makers can no longer ignore. The increased use of generic prescription drugs through physician automation generic prescription is critical to ensure. A reported study of the health economic situation of Pakistan shown that the total health expenditure, as a percentage of the GDP, was 3.38% in 2019. The public sector bears 32% of the health expenditures, while 64% is borne by patient's out of pocket (OOP) payments that may lead to catastrophic consequences for the families (Quick et al, 2002; Hsu et al., 2018; Khan, 2019; Ministry of Finance, Government of Pakistan, 2020). In public sector hospitals,

prescribe medicines are provided without charges, while in private sector hospitals and retail pharmacies the patients have to pay for the filling of their prescribed medicine. The unprecedented drug price hike in Pakistan not only hitting the poor portion of the society but also impacting the middle-class families and the elderly with low income. In last five years (2017-2021) the cost of essential medicines rose by 80% in Pakistan. However, the Drug Regulatory Authority of Pakistan (DRAP) says that medicine rates rose by a mere 5% on average from 2016 to 2020. In addition, 15% increase was allowed on medicines in 2018 due to abrupt devaluation of Pakistani rupee, as earlier stated. The increase in drug price mainly due to increase in dollar strength, increased in shifting charges, pandemic hit, imports of API, ban of raw material from neighbor countries, increase in production cost, fuel cost and increase demand of medicine due to increase in population.

This alarming increase in price badly affecting the not only the health but also the social and mental health of LMICs. Other contributing factor in prescribing the branded medicine is pharmaceutical pressure on the prescriber by offering a number of activities and it leads to irrational prescribing of medicines by the practitioners among which is the are the chemotherapeutics especially the antibiotics in Pakistan. This unethical practice of drugs marketing and promoting of brands by manufacturing companies through practitioners is a major cause of antibiotic resistance which is consider a global issue, this irrational prescribing practice is only aim on personal benefits which not only increase the cost of therapy but also microbial resistance to these antibiotic, a recent survey show that if the prevalence of resistance to antibiotic increase with current rate, so till 2050 almost all the bacteria will be resistant to the available antibiotics and morbidity and mortality rate will increase with minor infections. The price gaps between various medicine brands of the same generic drug are highly variable in Pakistan this variation is in significant range which point out the incompetent policies of the regulatory authority to control the drug price of same generic drug to a certain limits and to ensure the affordability by LMICs. The attachment of prescriber to a branded drug is another factor which is consider of high quality, safer and more effective by the prescriber even the drug testing laboratory ensure the quality of these marketed drug. In Pakistan the prescriber either prescribes multinational pharmaceuticals formulation or local with big margin. It is the responsibilities of the DRAP to ensure the quality, safety and efficacy of the marketed brand which can increase the confidence of the prescriber on these available brands.

The results of this study can lead to positive significant social changes by providing patient education on potential savings from generic medication and by providing information on how generic drugs are cheaper and are therapeutically equivalent as brand-name drugs. The implementation of the generic prescription will take time and efforts in Pakistan market where brand prescription is normal and widely followed and furthermore it has a significant negative implication on pharmaceutical expenditure. The outcome of this study can be used to reverse this trended prescription. The use of generic drugs is a policy option that will allow for access to affordable drugs and cost-effective therapy. Current study will also provide an opportunity to address negative perceptions about the generic drugs in the current health care system. In this regard patients counseling by a qualified person can further improve the utilization of the generic drugs which can reduce the overall cost of therapy. Reducing the cost of therapy can reduce the psychological pressure and stress level of patient. Furthermore, current study will provide a clue to policy makers with relevant information that will aid in their decision-making process, the output of this study will serve as a strategic tool in the area of generic cost savings.

METHODOLOGY

Settings

This report is based on Clinical Pharmacy Clerkship as a requirement of Pharm-D degree. The medicine's price and affordability data (prescription data) of four (4) major groups of diseases namely; Cardiovascular, diseases Diabetes Neurological disorders and Pediatrics, was collected from January to May, in 2022. A total of five regions/cities were selected for the survey, that is, Islamabad (Federal Capital), Rawalpindi (Punjab province), Peshawar (KPK province), Mardan (KPK province), Timergara (KPK province). The data is collected by the researcher themselves to eliminate any error, for better understanding and presentation of the data. Gathered the data on medicines prices of all selected diseases from both public and private sector hospitals and also from private retail pharmacies.

Data Source

A total of hundred (100) prescription, twenty-five (25) for each disease were collected from ten (10) hospitals and price data were collected from twenty (20) retail pharmacies at different regions. A total of forty (40) prescriptions, ten (10) for each disease were selected which includes, a total of one hundred and seventy-nine (179) medicines, forty-five

(45) for cardiovascular diseases (see figures), fifty-six (56) for diabetes (see Figures...), forty-five (45) for neurological disorders (one prescription is mentioned in table 1 and figure 1) and thirty-three (33) for pediatrics diseases (like table 1 and figure 1). Then for each drug/medicine three (3) alternatives which are the competitors and are available at lower price from the prescribed medicines, total five hundred and thirty-seven (537) alternatives medicines were studied for price evaluation.

Data analysis

Cardiovascular diseases

Prescription 1

Table 1, shows the cost comparison of the prescribed brands for patient with CVD with the available alternative brand in the market. The tabular and graphic data (Figure) showed a

significant difference in the mentioned prescription cost. The prescribed brands cost 1035 PKR, if we select the alternate brands#1, which will cost 850 PKR (82% of the 1035 PKR) it means that we can save 18% (186 PKR), just like that, Alternate brands#2 can save 23% (238 PKR) and Alternate brands#3 will save 29% (300 PKR) in a single prescription filling. All other prescriptions were also evaluated and then the results were tabulated as mentioned the following results.

RESULTS AND DISCUSSION

The collected data for study are analyzed and the results on average shows about 55% possible reduction in the cost of prescription filling through alternate brands medicines. The resulted data evaluated for each disease are presented in tables below.

Table 1. Cost comparison of the prescribed brands for patient with CVD.

S. No	Prescribed brands	Generics	Price	Alternate Brands#1	Price	Alternate Brands#2	Price	Alternate Brands#3	Price	Dosage forms
1	Lowplatplus	Aspirin+ Clopidogrel	150	Ascard plus	150	Clopidop plus	120	Abiclot plus	130	Tablets
2	Lochol	Atorvastatin	210	Atorscot	180	Colezaf	130	Atorex	150	Tablets
3	Cardnit	Glyceril Trinitrate	210	Webser	150	Glyrate-SR	160	Glycon-N	100	Tablets
4	Spiromide	Furosemide+ Spironolactone	215	Spidar	120	Spirofer	140	Spirotech	110	Tablets
5	Capzol	Omeprazole	250	Cipro	250	Noran	250	Benzim	240	Capsule

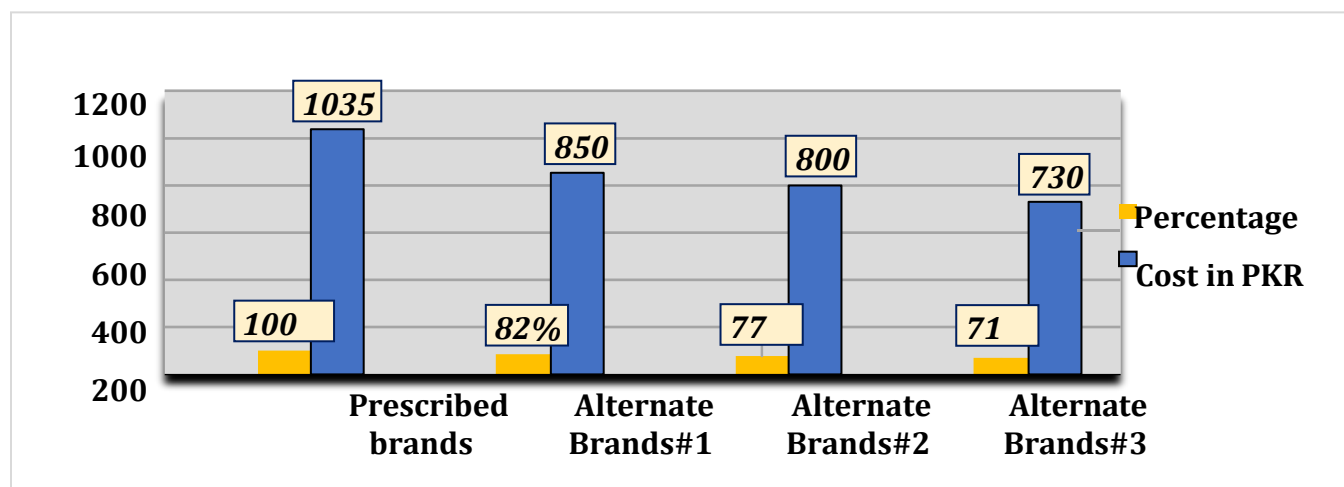


Figure 1. Cost comparison of the prescribed brands for patient with CVD.

Discussion

The current study clearly demonstrates that the prescribed brands are costly and more expensive than its available alternate brands in the market; questions arise, why practitioner prescribed expensive brands when there are

less expensive or cheaper brands available? Why there are too much variations in the prices of different brands having same formulations? Why there is no generic prescription in Pakistan to reduce the cost? Are the patients can afford these expensive brands or they just skip

or leave the therapy due to high cost? Too many to questions to ask. To find out the answers to these questions raised on the health system of Pakistan, we have chosen this study and tried to convey it the responsible authorities and to the general public for understanding the benefits of the generic prescription and also the general public could find a way to reduce the cost of therapies. The Manufacturing companies and the distributors mainly promote their brands and increase their sales productions

by Convincing the practitioners to prescribe their brand instead of any other brands which may be less expensive but the practitioners prescribed the expensive brands, and there are mix factors that why they are practicing it, one factor is the safety, efficacy ,potency of the drug ensure by the expensive brands which may be not clarified by the cheaper brands, other factors include the availability of the brands, and personal benefits, which contributes to the expensive prescription.

Table 2. Cost comparison of the prescribed brands for cardiovascular medicines.

S. No	Prescribed Cost & (%)	Alternative 1 cost & (%)	Alternative 2 cost & (%)	Alternative 3 cost & (%)
P1	921 PKR (100%)	726 PKR (79%)	673 PKR (73%)	595 PKR (65%)
P2	1035 PKR (100%)	850 PKR (82%)	800 PKR (77%)	730 PKR (71%)
P3	591 PKR (100%)	450 PKR (76%)	443 PKR (75%)	436 PKR (74%)
P4	1146 PKR (100%)	646 PKR (56%)	593 PKR (52%)	590 PKR (51%)
P5	1456 PKR (100%)	1024 PKR (70%)	990 PKR (68%)	953 PKR (65%)
P6	645 PKR (100%)	572 PKR (89%)	507 PKR (79%)	445 PKR (69%)
P7	546 PKR (100%)	495 PKR (91%)	458 PKR (84%)	410 PKR (75%)
P8	791 PKR (100%)	516 PKR (65%)	513 PKR (65%)	510 PKR (64%)
P9	580 PKR (100%)	540 PKR (93%)	465 PKR (80%)	390 PKR (67%)
P10	581 PKR (100%)	475 PKR (82%)	428 PKR (74%)	PKR (72%)

Table 3. Cost comparison of the prescribed brands for neurological medicines.

S. No	Prescribed Cost & (%)	Alternatives 1 cost & (%)	Alternative 2 cost & (%)	Alternative 3 cost & (%)
P1	1875 PKR (100%)	677 PKR (36%)	774 PKR (41%)	915 PKR (49%)
P2	2441 PKR (100%)	946 PKR (39%)	776 PKR (32%)	725 PKR (30%)
P3	1484 PKR (100%)	490 PKR (33%)	496 PKR (33%)	553 PKR (37%)
P4	866 PKR (100%)	607 PKR (70%)	587 PKR (68%)	674 PKR (78%)
P5	2340 PKR (100%)	958 PKR (41%)	1178 PKR (50%)	1399 PKR (60%)
P6	1976 PKR (100%)	894 PKR (45%)	485 PKR (25%)	1004 PKR (51%)
P7	2851 PKR (100%)	1181 PKR (41%)	1276 PKR (45%)	1196 PKR (42%)
P8	2943 PKR (100%)	1273 PKR (43%)	976 PKR (33%)	1767 PKR (60%)
P9	1389 PKR (100%)	527 PKR (38%)	417 PKR (30%)	600 PKR (43%)
P10	2266 PKR (100%)	772 PKR (34%)	915 PKR (40%)	849 PKR (37%)

Table 3. Cost comparison of the prescribed brands for diabetes medicines.

S. No	Prescribed Cost & (%)	Alternative 1 cost & (%)	Alternative 2 cost & (%)	Alternative 3 cost & (%)
P1	842 PKR (100%)	685 PKR (81%)	558 PKR (66%)	345 PKR (41%)
P2	1710 PKR (100%)	1240 PKR (72%)	1060 PKR (62%)	585 PKR (34%)
P3	3210 PKR (100%)	1770 PKR (55%)	582 PKR (18%)	436 PKR (13%)
P4	3925 PKR (100%)	2345 PKR (59%)	1075 PKR (27%)	875 PKR (22%)
P5	3716 PKR (100%)	2094 PKR (56%)	795 PKR (21%)	580 PKR (15%)
P6	3246 PKR (100%)	1870 PKR (57%)	615 PKR (19%)	438 PKR (13%)
P7	3220 PKR (100%)	1845 PKR (57%)	665 PKR (20%)	482 PKR (15%)
P8	811 PKR (100%)	733 PKR (90%)	663 PKR (81%)	590 PKR (72%)
P9	3006 PKR (100%)	1360 PKR (45%)	702 PKR (23%)	478 PKR (15%)
P10	1542 PKR (100%)	958 PKR (62%)	791 PKR (51%)	PKR (34%)

The variations in prices of the different brands are the result of the manufacturing cost, quality control measures, ensuring of safety, efficacy, use of correct formulations, dosage form, by the manufacturer. Other factors such as external pressure, competition, Location of the manufacturing company, marketing costs etc. As these factors may differ for industries. The health system of Pakistan has many gaps and lacks compared to the developed countries. Other than the budget for health one reason that can reduce the expenses of the therapy and selecting the affordable drug for a patient is the induction of pharmacist into the health care system of Pakistan. Because in Pakistan Pharmacists have not been utilized to get benefits from their knowledge about drugs and cost-effective therapies. Once the Pharmacist inducted into health system the implementation of the generic prescription will become easier as the pharmacist will help in policies making about generic prescription and will have strong support as the supporters will increase, not like now as the majority of the practitioners not accepting the generic prescription for personal gains. The health regulatory authority has to develop policies regarding the generic prescription and limit the cost of medicines, that can be affordable by the poor patients.

CONCLUSIONS

The current study concluded that the cost of the prescribed brands available for CVDs, Diabetes, neurological disorders is high in comparison to the alternate brands available in the market. A number of contributing factors in the increase cost of these prescribed brands is due to lack of qualified person in most of the retail and community pharmacy, unavailability of the alternative drug, attraction of promotional activities for prescriber and pharmaceutical pressure and lack policies implementation regarding the filling of prescription.

RECOMMENDATIONS

- The availability of a qualified person for the intervention of the prescribed brand and to provide cost effective therapy.
- The prescription should be generic drug oriented instead of brands orientation.
- DRAP should actively play its role to minimize the price gap for similar generic drug.
- Drug testing laboratories should be properly equipped and functional to ensure the quality of the all the available brands.
- To increase the number of qualified pharmacists in the existence health care system to discourage the

irrational prescribing pattern.

- Policies regarding the promotion of pharmaceutical product should be made and implemented for the better social and mental health of the community.
- Shifting charges on the raw material should be minimized by government to reduce the overall cost of the therapy.
- Industrial production of the raw material should be encouraged at the government level through attractive packages.
- While prescribing the medicines the practitioner should consider the socio-economic status of the patient.

REFERENCES

- <https://www.who.int/publications/i/item/9789241506236>
- <https://tribune.com.pk/story/2336828/essential-medicine-prices-out-of-reach>
- [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(13\)60646-7/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(13)60646-7/fulltext)
- <https://data.worldbank.org/indicator/SH.XPD.OOPC.CH.ZS?end=2019&locations=PK&start=2018>
- Uijtendaal EV, van Harssel LL, Hugenholtz GW, Kuck EM, Zwart-van Rijkom JE, Cremer OL, et al. Analysis of potential drug-drug interactions in medical intensive care unit patients. *Pharmacotherapy*. 2014;34:213-19.
- [https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-\(cvds\)](https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds))
- <https://dphhs.mt.gov/schoolhealth/chronichealth/neurologicaldisorders#:~:text=Neurological%20disabilities%20include%20a%20wide,are%20congenital%2C%20emerging%20before%20birth.>
- <https://www.longdom.org/scholarly/pediatric-diseases-journals-articles-ppts-list-2771.html#:~:text=Some%20of%20the%20pediatric%20diseases,%2C%20cancer%2C%20bronchiolitis%2C%20etc.>
- <https://www.niddk.nih.gov/health-information/diabetes/overview/what-is-diabetes#:~:text=Diabetes%20is%20a%20disease%20that,to%20be%20used%20for%20energy.>
- <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=PK>
- <https://www.frontiersin.org/research-topics/34910/pharmacoeconomics-in-the-area-of-health-technology-assessment-and-outcomes-research-to-prioritize-re>