Perceived Quality of Medical Practitioners towards generic medicine: an Exploratory Investigation

Hiren J. Patel[1], Rajdev Paras[2]

[1]Associate Professor, [2]Research Scholar, VM Patel Institute of Management, FMS, Ganpat University, Gujarat

***Corresponding Author:**
Email: facultyhiren@gmail.com

Abstract

Purpose: The Current study aimed to exploratory investigation about knowledge, attitude and priority of medical practitioner towards generic medicines in Vadodara

Methodology: The author analyzed data collected from 73 respondents and used exploratory factor analysis to extract the factors. Exploratory research design is used with convenience sampling for data collection

Findings: Various variables related to knowledge, attitude, priority and patient's financial condition were selected for exploratory factor analysis. The results indicate that total 4 factors have been extracted from the listed variables i.e. attitude, patient's economical condition, perceived knowledge, legal aspect.

Research Limitation and implication: The study is limited because it did not include survey and respondents from other cities of the state. The results are applicable to this segment only, the results depicts that perceived quality of medical practitioners towards generic medicine is negative.

Originality/value: There is limited research to examine medical practitioners perception, knowledge, attitude and perception towards generic medicine, perceived quality of medical practitioners towards generic medicines has not been examined.

Keywords: Medical Practitioner, Knowledge, Attitude, Perceived Quality, Patient's Economical Condition, Generic medicines, Vadodara.

Access this article online

Website:
www.innovativepublication.com

DOI:
10.5958/2394-2770.2016.00016.8

Introduction

Healthcare scenario in India, though constantly improving, is not a in a good condition. The spending for healthcare is about 4.0% of GDP (data.worldbank.org) which is way less than brazil's 9.5%, South Africa's 9.0%, Russian federation 6.5% and china's 5.0% (Lowest in BRICS). For that reason out of pocket expenditure is about 80.0%. Now prices of medicine constitute about 40-50% of total health expenditure. In order to decrease out of pocket expenditure and improve access to healthcare services writing generic medication prescription must be encouraged.

Generic medicines have been available since many decades years and are routinely used to cure a wide range of acute and chronic diseases. In order to be approved for use, a generic medicine must be bioequivalent to the originator product, and must be same in terms of efficacy, safety and quality. Generic medicines might be differ from their equivalent branded medicine in terms of color, size, shape and excipient ingredients.

New patented medicines, often replacing cheaper medicines on the basis of being more effective, also increase costs. Within this policy environment, generic pharmaceuticals play an important role as an alternative to originator medicines in encountering disease. Many of the developing countries have policies encouraging the use of generic medicines, alongside policies that encourage innovation and lead to the fast uptake and use of newer therapies.

This study assessing the current situation by medical practitioner's knowledge, attitude and approach towards generic medicine and patient's financial condition that either affecting the prescription pattern of medical practitioner or not. The outcome of this study will be useful to get a clear view about medical practitioner's perception towards quality of generic medicine. India is said to be Pharmacy of the world, more than about 70% of population doesn't have access to affordable healthcare remains a hard fact which is the irony of nation. Generic medication prescription can play a crucial role to change the game.

The hurdles from practitioner's point of view in this matter are identified in this study. Which can be further be crossed by effective politics and necessary actions.

Literature review

Knowledge: A study conducted in the USA in 2005 for the physician's perception (Barrett 2005), showed that 78% of physicians are supporting generic medicines in most cases; and 17% are willing to prescribe generic medicines in all cases when they are available. Only 5%

of doctors indicated they did not support generic substitution. Ninety percent of physicians are knowledgeable enough about generic bioequivalence in the survey.

Shazia Quasim Jamshed conducted a survey in 2012 in Karachi, Pakistan, in that exploratory research she found 71.8% respondent showed correct knowledge about generic medicines being a 'copy of the brand name medicines' and 'interchangeable with brand name medicines'. While 41.26% respondents answered about the safety and quality of generic medicines are not good (Shazia, 2012).

The reason of proving bioequivalence is to show equivalence between the generic and the innovative medicine, to accomplish bridging of the preclinical and clinical testing carried out on the innovative medicine. Bioequivalence is proved if the rate and extent of absorption of generic medicine is not significantly different from that of the innovative medicine (Dunne S, 2013).

Sandeep Kumar Gupta, 2014, India, in the study regarding doctor's knowledge, attitude and practice, they collected the data which have 76% of the respondent were knowledgeable about the generic medicines, while 75% of the doctors were not agree with inferiority of quality of generic medicine and about 64% shows that they are practicing with generic medicine.

Attitude: A study on encouraging the usage of generic medicine by king DR 2002, where he stated "Many doctors believe that generic medicines are not effective and safe in comparison to brand-name medicines. Moreover, generic medicines are of below standard mainly due to poor adherence with Good Manufacturing Practice (GMP) guidelines".

Similar survey was conducted in 2007 in Greece and Cyprus. Proven clinical effectiveness was found to be the most influential factor for generic prescription for over 90% of physicians in both Greece and Cyprus. 51% percent of physicians in Greece and 60% of physicians in Cyprus rated the quality of generic drugs as excellent. Effectiveness of generic drugs was also satisfactory to 52% of Greek physicians and 62% of the physicians in Cyprus. Overall only 25% of physicians in Greece indicated that they prescribed generic drugs instead of brand name drugs often or very often versus 67% in Cyprus.

William had a survey on physician perception about generic medicine where he found Over 23% of physicians surveyed expressed negative perceptions about efficacy of generic drugs, almost 50% reported negative perceptions about quality of generic medications, and more than one quarter do not prefer to use generics as first-line medications for themselves or for their family (William, 2011).

Gamil Qasem Othman, 2015, In Yemen, there was a study for the assessment of the knowledge and perception about generic medicine among pharmacy students, and they found that more than 70% respondents were agree with generics have more side effects and less efficacy.

Priority: A study was conducted in Riyadh (Alghasham, 2009), Saudi Arabia where 79% of physicians were in favor of generic substitution in most cases. Ninety-six percent said were enough knowledgeable about the therapeutic value of generics to prescribe them in confidence. Seventy-two percent physicians were agreed that price difference influenced them to prescribe generics. However, 35% of participants of the study indicated that ''therapeutic failure'' is a serious problem with some generic drugs.

Frouzi Elpiniki, 2013 has a survey about the physician's perception about generic medicines in the Greek, where he found about 70 percentage of the sample physicians were eager and most prior to generic prescriptions.

A study in Iran by Nazila Yousefi, 2015 where he states the main decision maker for prescribing the medicine, physician, are not prior to generic medicines because they do not have positive perception about the safety and efficacy of generic drugs.

Patient's economical condition: Hristina Lebanova, 2011, Bulgaria had a survey for the patient's perception for generic medicine in Bulgaria, where they found 94 percentage of the respondent have not trust on generic medicine , they thinks that generics are inferior to branded medicines, but the financial condition of a patient is a leading factor for moving towards generic medicines.

Alexandra Cameron, 2012 concluded in his study that 'Substantial savings could be achieved by switching private sector purchases from originator brand medicines to lowest-priced generic equivalents' that will leads to counter the out of the pocket expenditure of a patient.

In Istanbul, Turkey a survey was conducted among physicians and revealed that around 32% of them believe that generic drugs did not differ from their brand name originals. Eighty-two percent of physicians stated that they were unsure about the bioequivalence of generic drugs to their original brands. Also 9% said that they never prescribe generic drugs. Cost was identified as the most important factor playing a role in their decision to substitute with a generic (Toklu, 2012).

Research Methodology

Instrument design: It was a questionnaire based exploratory investigation of randomly selected medical practitioner by convenience sampling working at Vadodara. Total population of 130 Medical practitioners was requested to fill the questionnaire, whereby all medical practitioners with any specialty were covered from all four zone of the Vadodara city.

Survey Development and Administration: A questionnaire on physician self-rated level of knowledge, attitudes and opinions was self-developed. The evaluation of questionnaire was done by qualified research supervisor. A convenience sampling of medical practitioners was done and contacted face to face to fill the questionnaire. To reach the larger sample size and to get connected with medical practitioner a survey and distribution was done after OPD and before closing time of clinic in the evening. During the data collection it was surprising that practitioner's response was very good and the perception they have about generic medicine they discussed apart from the questionnaire.

Survey Content: The questionnaire was designed for an exploratory investigation on Medical practitioner's level knowledge, attitudes toward local generic medication prescription, Priority for generic medicine and patient's economical condition that affecting the prescription pattern of medical practitioners. It also gathered information about awareness and attitude towards the ongoing schemes for access to medicine affordable i.e. Mukhyamantri Nishulk Dava Yojna (Rajasthan), Amma Pharmacy (Tamilnadu), Jan Aushadhi Stores and AMRIT by Govt. of India.

The questionnaire was composed of 23 questions on Likert scale measurement and one open ended questions, which we estimated would take around 10 min to complete. The questionnaire was divided into four main parts:

Demographic variables: Gender, age, medical specialty and prescription per week.

Medical Practitioner's Knowledge: Seven questions pertaining to knowledge about the meaning of ''generic'', bioequivalence study requires for generic medicines. The questions also enquired awareness about the act, "Prescribe drug with generic name (Jamshed SQ et al., 2011)."

Medical Practitioner's attitudes: Six questions eliciting medical practitioner's attitude to prescribe a generic medication. It included variables like therapeutic safety, effectiveness, patient improvement and manufacturing practice of generics, cost difference and quality (Alghasham AA et al., 2009).

Medical Practitioner's Priority: Six questions investigated the priority of medical practitioner for generic prescription and their willingness to make it available in every hospital. These include variables of prescribing generic medicines, individual use of generic medicines and limitation in combination (Nazila Yousefi et al., 2015).

Patient's economical Condition: Three questions summarize the patient's financial conditions affecting the prescription pattern of medical practitioner to make it affordable health service. Variables like complain about higher cost, asking for cheaper medicines and to ask patient about their affordability (Susanne Gelders, 2005).

Findings: Among all population 41% was family physician 15% was Gynecologist 8% was orthopedic 18% was Dentist and 18% was in other category i.e. pediatric, nephrologists, pulmonary specialist, Neurology, Optho and others (Table 1).

Table 1

Gender	Male	46
	Female	27
Age	25 to 35	22
	35 to 45	11
	45 to 55	24
	> 55	16
Practicing As	Family Physician	30
	Orthopedic	06
	Gynecologist	11
	Dental Surgeon	13
	Other	13

There were many practitioners who were knowledgeable with the term generic, and many of the respondents knows that cheaper generic medicine can be most helpful for the poor people suffering from chronic diseases. But less respondent were agreed that there should be a generic medicine prescription they are writing for themselves. The affecting factor was known is perceived quality about drugs, during the data collection many of the practitioners have reason for not using generic medicines was effectiveness and development of drug resistance. (Fig. 1)

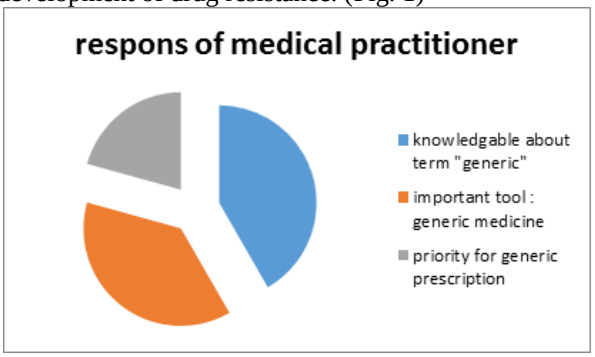

Fig. 1

All collected data for error screening process entered manually into an Excel worksheet. Each variable was coded and numbered. SPSS version 20 (IBM, SPSS) was used for data analysis.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.874
Bartlett's Test of Sphericity	Approx. Chi-Square	1234
	Df	171
	Sig.	.000

The Bartlett's Test of Sphericity is a statistical test for the presence of correlations among the variables. It provides the statistical significance that the correlation matrix has significant correlations among at least some of the variables. As presented in above table, Bartlett's Test of Sphericity is 1234, with 0.000 level of significance. This satisfies the required condition for applying factor analysis.

Measure of sampling adequacy (MSA) is a measure to quantify the degree of inter-correlations among the variables for applying factor analysis. MSA value is from 0 to 1. The needed value for overall MSA is 0.5. If overall MSA value is greater than 0.5, factor analysis can be applied on that data. Apart from this, MSA value for each variable required to be examined and if it comes lower than 0.5, that variable should be dropped and MSA value should be identified once again.

From the above table, it can be observed that overall MSA value is 0.874 for the operations. This MSA value is larger than 0.5 and hence factor analysis can be applied on it.

Anti-image Correlation Matrices

	Q5a	**Q5b**	**Q5e**	**Q5f**	**Q6a**	**Q6b**	**Q7a**	**Q7b**	**Q7c**	**Q7d**	**Q7e**	**Q8a**	**Q8b**	**Q8c**	**Q9a**	**Q9b**	**Q9c**	**Q9d**	**Q9e**
Q5a	.664[a]	-.559	-.085	.270	-.248	.167	.213	.104	-.301	.015	.160	-.338	.354	.015	-.046	-.114	.261	-.066	-.165
Q5b	-.559	.738[a]	.190	-.381	.144	-.063	.143	-.002	.314	-.187	-.044	.060	-.252	-.041	.072	.123	-.181	.071	.262
Q5e	-.085	.190	.925[a]	-.088	.039	-.108	-.002	-.052	.211	-.159	-.119	.184	-.086	-.173	-.070	.007	.036	.151	.282
Q5f	.270	-.381	-.088	.826[a]	.061	-.132	-.005	.075	-.207	.088	.049	.103	-.106	.178	-.536	-.012	.105	.066	-.075
Q6a	-.248	.144	.039	.061	.919[a]	-.189	-.418	-.036	-.038	.211	-.006	.252	-.172	-.002	-.041	-.104	-.188	-.083	-.190
Q6b	.167	-.063	-.108	-.132	-.189	.855[a]	.174	.108	-.215	.148	.209	-.344	.256	-.112	.255	-.295	.229	-.460	-.057
Q7a	.213	.143	-.002	-.005	-.418	.174	.905[a]	.223	-.098	-.151	.026	-.306	.142	-.066	-.159	.117	.145	-.003	.333
Q7b	.104	-.002	-.052	.075	-.036	.108	.223	.958[a]	-.017	-.106	-.028	-.012	-.116	-.053	-.179	-.003	.033	.011	.212
Q7c	-.301	.314	.211	-.207	-.038	-.215	-.098	-.017	.847[a]	-.820	-.277	.140	-.162	-.049	.050	-.029	-.070	.298	.161
Q7d	.015	-.187	-.159	.088	.211	.148	-.151	-.106	-.820	.872[a]	.369	-.054	.007	.027	.077	.102	.012	-.294	-.065
Q7e	.160	-.044	-.119	.049	-.006	.209	.026	-.028	-.277	.369	.893[a]	-.172	.140	-.114	.077	-.037	.051	-.231	-.243
Q8a	-.338	.060	.184	.103	.252	-.344	-.306	-.012	.140	-.054	-.172	.813[a]	-.542	-.076	-.108	.157	-.173	.178	-.032
Q8b	.354	-.252	-.086	-.106	-.172	.256	.142	-.116	-.162	.007	.140	-.542	.793[a]	-.455	.251	-.119	.103	-.087	-.235
Q8c	.015	-.041	-.173	.178	-.002	-.112	-.066	-.053	-.049	.027	-.114	-.076	-.455	.923[a]	-.361	.001	.145	-.036	.174
Q9a	-.046	.072	-.070	-.536	-.041	.255	-.159	-.179	.050	.077	.077	-.108	.251	-.361	.784[a]	.061	-.113	-.005	-.189
Q9b	-.114	.123	.007	-.012	-.104	-.295	.117	-.003	-.029	.102	-.037	.157	-.119	.001	.061	.925[a]	-.633	.147	.010
Q9c	.261	-.181	.036	.105	-.188	.229	.145	.033	-.070	.012	.051	-.173	.103	.145	-.113	-.633	.895[a]	-.420	.046
Q9d	-.066	.071	.151	.066	-.083	-.460	-.003	.011	.298	-.294	-.231	.178	-.087	-.036	-.005	.147	-.420	.906[a]	-.074

Q9e	-.165	.262	.282	-.075	-.190	-.057	.333	.212	.161	-.065	-.243	-.032	-.235	.174	-.189	.010	.046	-.074	.917[a]

a. Measures of Sampling Adequacy (MSA)

Diagonal values in the Anti-Image Correlation Matrix represent MSA Value. The variable with the value less than 0.5 should be omitted from the factor analysis one at a time, with smallest one being omitted each time. Q5d is removed due to lower loading.

Communalities

	Initial	Extraction
Generic drug are usually intended to be interchangeable with an innovator drug	1.000	.737
Generic drugs can be only marketed after the expiry date of the patent of innovator	1.000	.816
Generic drugs are an important tool for reducing overall health expenditure	1.000	.577
Indian Medical Council Act (Professional conduct, Etiquette and Ethics) Regulations, 2002 states that every physician should, as far as possible, prescribe drugs with generic names.	1.000	.754
Brand-name drugs are made in modern manufacturing facilities, and generics are often made in substandard facilities	1.000	.683
Generic drugs cost less because they are inferior to brand-name drugs.	1.000	.653
There should be a generic medicine store in every hospital	1.000	.745
am regularly reading articles on comparison of safety and efficacy of generic versus branded medicine	1.000	.510
I always prefer to use generic medicine.	1.000	.824
When I advising my family, suggest using generic medicines first	1.000	.875
Generic medicines have limitation when it comes to combination therapy	1.000	.595
Patients having complain about higher cost of medicine	1.000	.813
Patients are always or sometime asking for cheaper medicine.	1.000	.844
I always asking patient for their affordability.	1.000	.825
I always asking patient for their affordability.	1.000	.776
Generics are not as safe as innovator drugs.	1.000	.836
Generics are not as effective as brand-name drugs.	1.000	.831
Generics take longer to act in the body	1.000	.801
Switching a patient from a brand name to generics may change the outcome of the therapy.	1.000	.795

Communality of variable is shared variance. All the factors put together are able to explain this variable by the percentage of shared variance. Due to lowered communality value Q5c and Q6c are deleted from the factor analysis.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.411	54.795	54.795	10.411	54.795	54.795	7.137	37.562	37.562
2	1.533	8.066	62.862	1.533	8.066	62.862	2.889	15.205	52.767
3	1.254	6.602	69.464	1.254	6.602	69.464	2.170	11.423	64.190
4	1.090	5.739	75.202	1.090	5.739	75.202	2.092	11.013	75.202
5	.700	3.684	78.886						
6	.660	3.474	82.360						
7	.552	2.905	85.265						
8	.528	2.777	88.042						
9	.420	2.208	90.250						
10	.353	1.857	92.107						

11	.326	1.716	93.822						
12	.267	1.407	95.229						
13	.256	1.350	96.579						
14	.203	1.068	97.647						
15	.145	.765	98.412						
16	.115	.606	99.018						
17	.102	.535	99.553						
18	.056	.293	99.846						
19	.029	.154	100.000						

Extraction Method: Principal Component Analysis

Eigenvalue is a measure of the explanatory power of each factor. Therefore, the factor with higher eigenvalue should be selected first. Total four factors have been extracted from the data. Total four factors together explain 75 percentage of variance of Perceived Quality of Medical Practitioners toward generic medicine. First factor explains 37 percentage of variance. Second factor explains 15 percentage of variance, third and four factors explains 11 percentage of variance each.

Rotated Component Matrix[a]

Questions	Components			
	1	2	3	4
Switching a patient from a brand name to generics may change the outcome of the therapy.	-.846			
Generics are not as effective as brand-name drugs.	-.801			
Generics are not as safe as innovator drugs.	-.794			
When I advising my family, suggest using generic medicines first	.788			
Generics take longer to act in the body	-.784			
There should be a generic medicine store in every hospital	.772			
I always prefer to use generic medicine	.764			
Brand-name drugs are made in modern manufacturing facilities, and generics are often made in substandard facilities.	-.697			
Generic drugs cost less because they are inferior to brand-name drugs.	-.694			
Generic drugs are an important tool for reducing overall health expenditure.	.64			
Generic medicines have limitation when it comes to combination therapy.	-.658			
I am regularly reading articles on comparison of safety and efficacy of generic versus branded medicine	.547			
Patients having complain about higher cost of medicine		.861		
Patients are always or sometime asking for cheaper medicine		.821		
I always asking patient for their affordability		.701		
Generic drug manufacturers need to conduct bioequivalence studies to demonstrate equivalence between the generic medicine and the innovator medicine			.825	
Indian Medical Council Act (Professional conduct, Etiquette and Ethics) Regulations, 2002 states that every physician should, as far as possible, prescribe drugs with generic names.			.783	

Generic drugs can be only marketed after the expiry date of the patent of innovator				.815
Generic drug are usually intended to be interchangeable with an innovator drug				.800

All the values shown in above table are factor loading. Variables having more than 0.5 factor loading is shown in above Table. Rotation of factors will result into more harmonious group of variables into one factor. This will increase the understanding of grouping of variables. Therefore factor rotation is done after factors' extraction based on principal component method. Varimax rotation method is used for extraction of factors (Hair, 2005).

Discussion

Total four factors have been extracted from the data. Total four factors together explain 75 percentage of variance of Perceived Quality of Medical Practitioners toward generic medicine. First factor explains 37 percentage of variance. Second factor explains 15 percentage of variance, third and four factors explains 11 percentage of variance each.

Attitude: Outcome of therapy, effectiveness of generic drug, safety of generic medicine, priority to prescribe, take time to act in the body, willingness to have generic medicine store, prefer to use, substandard GMP for generics, inferior to brand, generic as important tool, limitation for generics in combination therapy, gathering knowledge about generic medicines

Patient's economical condition: Patients complain about higher cost, patient asking about cheaper medicine, asking patient for their affordability

Perceived knowledge: Bioequivalence for generic medicines, act "prescribe drug by its generic name."

Legal aspect: Interchangeability of generic drug, entry of generic in the market

When patient is switching from branded to generic there should be changing in the outcome of therapy have the (-.846) value that shows practitioner do not want to replace the therapy to generics. Generics are not as effective as brand name drugs have (-.801) value which indicates that practitioners have not faith on the effectiveness of the generic medicines. When asked about the safety of the generic drugs it shows (-.791) value and reflecting that generics are less effective than branded drugs. When advising family use to prefer generic medicines have the (.788) value that they shows willingness to prescribe generic medicine whereby they clear it in open ended question that if they get assure about the quality of generic medicines. When talking about time taking to act in the body about the generic medicines it yields (-.787) results that will increase the resistance of the particular drug in the body that's why they do not prefer to use. It results in (.772) and (.764) about the priority for generic medicines, that there should be generic medicine store in every hospitals. (-.697) the value reflects the medical practitioner's negative perception about the manufacturing practice and product inferiority (-.694). Generic medicines are an important tool for reducing the overall health expenditure that is accepted by medical practitioners (.664). There is a limitation for generics when it comes to combination therapy easily proved by (-.658) value. Medical practitioners are regularly gathering the knowledge about the safety, efficacy and effectiveness of generic medicines (.547).

Patients financial condition is affecting the prescription pattern of the medical practitioner and making them to think about the generic prescription, patients having complains about the higher costs of medicines (.861) patients always or sometimes asking for the cheaper medicines (.821) these factor changing the perception about the generic medicine of medical practitioners and making them to think about the generic medicine which is the only factor to reduce the overall health expenditure. Medical practitioners is also asking patient about their affordability (.701).

Generic needs to conduct bioequivalence study that sentence has been supported (.825).Medical practitioners were also agree about the act "prescribe drug by its generic name." (.783). Generic medicine is intended to interchangeable with the innovator drug (.815) were also shows knowledgeable about the generic medicine. Generic drugs can also be marked after the expiry of patent (.800) that also shows angriness of medical practitioners.

There are many of the respondent medical practitioners were not aware about the ongoing scheme for access to medicine affordable to reduce the overall health expenditure. 16% have heard about the AMRIT schemes by government of India, 8% have heard about the Amma Pharmacy a Tamilnadu State scheme, 35 % have heard about the Mukhya Mantri Nishulk Dava Yojna, a successful scheme governing by State Government of Rajasthan, 27% have heard about the generic medicine store at cheaper rate, Jan Aushadhi Stores under the Governance of Government Of India.

While asking their attitude about the successfulness of the ongoing schemes 40% medical practitioners were agree that such schemes would be game changer, and 46 % were not agree with the application of such scheme, in a verbal communication they have discussed the problems with applicability of schemes, like procurement and supply chain of the drug and stock. While 14 % were neutral about the results of such schemes.

According to the present analysis, medical practitioners have not trust on quality of generic medicines, it is may be because of lake of proper knowledge of previously mind set for generic products.

They have stated and agreed when it comes to legal aspect; medical practitioners were agreed for believing the generic medicine as an important tool for the reducing total health expenditure.

In the study the results reflects that medical practitioners are not sure about the generic medicine effectiveness, safety and applying the good manufacturing Practices by generic manufacturers. Our study shows the result of patient's economical condition that influences the medical practitioners to prescribe generic drugs, many percentage of respondent were agreed that patients have complains about higher cost of medicines and sometimes they are asking for the cheaper medicines.

Attitude of medical practitioners toward generic medicine is not so good that is reflecting in the results of study, the perception for switching a patient for brand to cheaper generic may change the outcome of therapy that is on practitioners mind. When using the generics it takes longer time to act in the body that is also not a positive view for generics by respondent.

Conclusion

The prices of medicines remain a big hurdle in way to achieve universal healthcare coverage in country like India. The poor knowledge about quality of generic medicines in practitioners mind can cause the financial damage to the poor patient.

The above study reveals significantly high number of doctors agreed that generic drugs are an important tool for reducing overall health expenditure. Indeed, lower price is the major boon for generic drugs. In Indian context, the price of generic medicines has been found to be up to 91% less than that of the innovator medicine that majority of doctors lack proper knowledge about the generic medicines. The requirement today is to educate and encourage them about the very requirement of prescribing generics in the country where out of pocket expenditure is still very high.

Owing to the inaccessibility of drugs in the public hospitals, bulk of expenses incurred on medicine by general public are out of pocket, and thus, the availability and affordability of medicines becomes a major concern in a developing country like India. To encounter this problem, the Indian government started game changer project in November 2008 with plan to expand it in all districts of each states of India,. The name of the project was Jan Aushadhi (a Hindi term meaning 'people's drug'). If executed as desired, this could be a model for the entire developing world. But only 27 % participants in our study told that they were aware regarding the scheme. The hats of initiative by Rajasthan Govt. for the access to affordable medicine is , Mukhya Mantri Nishulk Dava Yojna, everyone those who have not think of like this, are not believing for success of this scheme about 35% of the respondent have heard about the above scheme.

The major limitation of this study is the small sample size and small sampling area. Hence, findings of this study cannot be generalized. Another limitation is that we have only analyzed the Medical practitioner's perception and understanding about generic medicines. It would be more appropriate to know the opinion and level of understanding of pharmacist and patients about generic medicines.

Limitation and Future research direction

Although the research tried to include different specialist and other medical practitioners across the city, future research could target more number of medical practitioners. Also we can broaden the scope of research by including 2 Tier cities where he need and nature of patients may be different that would affect the generic prescription. There is larger number of male practitioners as compared to female practitioners. Future research can try to have equal gender representation. There is also many type of medical practitioners have been included in the research, this could change the proper results. Future research may focus on physician only that is the main category of practitioner to prescribe more medicines.

The results can help to draw a line of medical practitioners perception for generic medicine, here it can be expanded by collecting the data from Pharmacist and Lehman this would help to know what people other than the prescription authority thinks about the generic medicine and it would make a guideline for expanding the OTC product list which could leads to patients convenience for affordable medicines.

References

1. Aarti Patel, Quality of generic medicines in South Africa: Perceptions versus Reality – A qualitative study, BMC Health Services Research 2012, 12:297.
2. Ajoy Bera, The Importance Or Generic Drugs In India, IJPCBS,2012,2(4),575-587.
3. Alghasham AA. Generic drug prescribing in central Saudi Arabia: perceptions and attitudes of physicians. Ann Saudi Med. 2009;29:24–9.
4. Alexandra Cameron, Switching from Originator Brand Medicines to Generic Equivalents in Selected Developing Countries: How Much Could Be Saved? 2012 available at http://apps.who.int/medicinedocs/documents/s19556en/s19556en.pdf.
5. Amit G, Efficacy of substituting innovator propafenone for its generic formulation in patients with atrial fibrillation. Am J Cardiol. 2004;93:1558–60.
6. Andersson K, Sonesson C, Petzold M, et al. What are the obstacles to generic substitution? An assessment of the behaviour of prescribers, patients and pharmacies during the first year of generic substitution in Sweden. Pharmacoepidemiol Drug Safety 2005;14:341–8.
7. Asa Auta, Generic Medicine Substitution: A Cross-Sectional Survey of the Perception of Pharmacists in North-Central, Nigeria, Med Princ Pract 2014;23:53–58.
8. Barrett, L.L., 2005. Physicians' Attitudes and Practices Regarding Generic Drugs, Washington DC, AARP Knowledge Management, 33p. <http://assets.aarp.org/rgcenter/health/phys_generic.pdf>

9. Bioequivalence Requirements Guidelines, Riyadh Saudi Arabia, the Saudi FDA, 2005. http://old.sfda.gov.sa/NR/rdonlyres/6A114B70-4201-46EF-B4C7-127FD66D3314/0/BioequivalenceRequirementGuidelines.pdf.
10. Cameron A, Mantel-Teeuwisse AK, Leufkens HGM, et al: Switching from originator brand medicines to generic equivalents in selected developing countries: how much could be saved? Value Health 2012;15:664–673.
11. Davit BM, Patel DT, Comparing generic and innovator drugs: a review of 12 years of bioequivalence data from the United States Food and Drug Administration. Ann Pharmacother. 2009;43:1583–97.
12. Derek R. King, Encouraging the Use of Generic Medicines: Implications for Transition Economies, Croat Med J 2002;43:462-469.
13. Faris El-Dahiyat, Evaluating patients' perceptions regarding generic medicines in Jordan, Journal of Pharmaceutical Policy and Practice 2013,6:3.
14. Frouzi Elpiniki, Knowledge and attitudes of Greek Physicians towards generic prescribing after the economic crisis, International Journal of Pharma Sciences and Research (IJPSR), ISSN: 0975-9492, Vol 4 No 10 Oct 2013,125-32.
15. Gamil Qasem Othman, Assessment of knowledge and perceptions of generic medicines among pharmacy students in Yemeni universities, Pharmacy Education, 2015;15(1);93–98.
16. Gupta PB. Survey of pharmacists: impact of the generic drug scandal and implications for marketing generic drugs. Health Mark Q. 1996;13:109–20.
17. Hristina Lebanova, Patients' attitude about generics – Bulgarian perspective, Marmara Pharmaceutical Journal 16:36-40,2012.
18. Hair, Joseph, et al., Multivariate Data Analysis. New Delhi: PHI Pvt. Ltd., 2005. 928 pp.
19. Huda O. Salhia, Perception and attitude of physicians toward local generic medicines in Saudi Arabia: A questionnaire-based study, Saudi Pharmaceutical Journal (2015) 23,397–404.
20. Jayaraman K. Troubles beset "Jan Aushadhi" plan to broaden access to generics. Nat Med. 2010;16:350.
21. Jamshed SQ, Hassali MA, Ibrahim MI, Babar ZU. Knowledge attitude and perception of dispensing doctors regarding generic medicines in Karachi, Pakistan: a qualitative study. J Pak Med Assoc. 2011;61:80–3.
22. Kishor Ahire, A Survey Based Study In Current Scenario Of Generic And Branded Medicines, Int J Pharm Pharm Sci, Vol 5, Issue 3, 705-711.
23. Lopes Gde L. Cost comparison and economic implications of commonly used originator and generic chemotherapy drugs in India. Ann Oncol. 2013;24(Suppl 5):v13–6.
24. Nazila Yousefi, Physicians' perceptions of generic medicine in Iran,2015. https://www.researchgate.net/publication/277963082_Physicians'_perceptions_of_generic_medicine_in_Iran.
25. One World Foundation, enhancing access to affordable medicines case of Chittorgarh district,2011, Governance Knowledge Centre (GKC) team.
26. Peder Andreas Halvorsen, Medical doctors' perception of the ''number needed to treat'' (NNT), Scand J Prim Health Care 2003; 21.
27. Sandeep Kumar Gupta, A Study io knowledge, attitude and practice of generic medicine among the doctors in tertiary care teaching hospital in south india, National Journal of Physiology, Pharmacy & Pharmacology, 2015, Vol 5, Issue 1,39–44.
28. Sarah Colgan, Perceptions of generic medication in the general population, doctors and pharmacists: a systematic review, BMJ Open 2015;5.
29. Shazia Quasim Jamshed, Perception and attitude of general practitioners regarding generic medicines in Karachi, Pakistan: A questionnaire based study, Southern Med Review Vol 5 Issue 1 July 2012.
30. Singal GL, Nanda A, Kotwani A. A comparative evaluation of price and quality of some branded versus branded-generic medicines of the same manufacturer in India. Indian J Pharmacol. 2011;43:131–6.
31. Susanne Gelders, Price, availability and affordability An international comparison of chronic disease medicines, WHO report,2005. http://www.who.int/medicines/publications/PriceAvailAffordability.pdf.
32. Suzanne S. Dunne, What do people really think of generic medicines? A systematic review and critical appraisal of literature on stakeholder perceptions of generic drugs, Medicine (2015) 13:173.
33. The cost of medicine report, Medicines sans frontieres, Fall 2015, vol 16, No 3.
34. Theodorou, Factors influencing prescribing behaviour of physicians in Greece, and Cyprus: results from a questionnaire based survey. Ann. Intern. Med. 2009, 142 (11),891-897.
35. Tinashe Zigomo, Consumer knowledge, attitudes and perceptions, towards generic medicines – A perspective from the Northern Suburbs of Johannesburg, South Africa, University of the Witwatersrand, 2014.
36. Toklu, Knowledge and attitudes of the pharmacists, prescribers and patients toward generic drug use in Istanbul – Turkey. Pharm. Practice, 2012,10(4),199.
37. William H Shrank, Physician Perceptions About Generic Drugs, The Annals of Pharmacotherapy n 2011 January, Volume 45.