A STUDY ON SELECTED PERCEIVED QUALITY PARAMETERS OF GENERIC MEDICINES AMONGST REGISTERED MEDICAL PRACTITIONERS OF AHMEDABAD

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ABSTRACT

Perceived Quality of Generic Medicine and its dimension have been studied by different authors since years, but direct relationship between perceived quality and its parameters (i.e. Overall Knowledge, Overall Availability, Overall Trust and Faith, & Overall Risk) of generic medicines amongst gender, category and qualifications of RMP of Ahmedabad has not been studied. In this research, researcher wants to study the differences in perceived quality of generic medicines amongst the registered medical practitioners of Ahmedabad city. To study this, the type of research used by the researcher is descriptive research and the involved sampling technique is non-probability convenience sampling. In this research the researcher wants to mainly study what the registered medical practitioners of Ahmedabad city are thinking about the generic medicines. For this a structured questionnaire was framed and questions regarding the different aspects of generic medicines were asked in a proper manner. The data from a sample of 137 registered medical practitioners of Ahmedabad city was considered and later it was analyzed by the help of SPSS software. Different statistical tools like ANOVA, Independent Sample t-test, Descriptive analysis, Correlation and Regression was found suitable and applicable to the type of data collected. After application of all the tools it was found that there is significant difference between males and females with regard to overall trust, overall risk, overall knowledge and overall availability. Also it was clear by the study that there is significant difference between categories (i.e. GP, Consultant and Specialist) with regard to overall trust, overall risk, overall knowledge and overall availability.

Keywords: RMPs, Generic Medicines, Perceived Quality, Pharmaceutical, Branded medicines, Pharma Companies

1. INTRODUCTION

Healthcare in India has grown rapidly over the years and has become one of the biggest sectors today in terms of revenues and employment. Owing to its impressive CAGR of 16.5%, the industry size is expected to cross USD 280 billion by 2020[1] (Ahmad, 2018) as per Frost & Sullivan, LSI Financial Services estimates. The improved coverage, the rise in spends by both private and public players, the mergers and acquisitions between domestic and foreign players, the success rate among the Indian companies to secure the Abbreviated New Drug Application (ANDA) and the opportunities in R&D as well as medical tourism are the key reasons for the industry's flourishing growth rate.

[1]Ahmad, S. (2018). Indian pharma industry is expected to cross $ 280 billion mark by 2020. Retrieved from https://www.business-standard.com/article/companies/indian pharma industry-is-expected-to-cross-280-billion-mark-by-2020-118051801480_1.html

It is an open secret that American democracy is more than 260 years old. Unlike India, it attracts the best of the talents from the world, and the public is ruled by a set of governance with a minimal bureaucratic control. Contrary to that, we are a developing nation with a short history, and merit has very often than not been a casualty. While the perception of the decision is poor-centric, ultimately it is this class which bears the brunt of poor quality in a system dominated by rich and the powerful.

The story of generics versus branded medicine being used to treat patients all over the world is not new. While there is no denial of the fact that good quality generics are always comparable to the branded medicine, the quality of the product depends on the sophisticated processing and manufacturing of a research molecule. While in United States, there is a stringent quality control and a serious periodic monitoring of the quality, this is far from truth in India, where to get a drug license through political or bureaucratic connections by corrupt means is as easy as buying vegetables in the market. The drug control mechanisms in India have huge limitations both in terms of availability of manpower and technology. Rampant corruption in the system makes it worse[2].(Panagariya, 2017)

With the mushrooming of pharma companies with incentives, the owner of the drug stores shall be least concerned with the quality of the drug. While it is true that some of the medical professionals have been hand-in-glove with the pharma companies and could have harmed patient interests, Chemists are unregulated and have no obligations, ethical or commercial for selling products. No medical professional would be against the low cost generic, provided it that is a quality drug but it is believed that not more than 1% of generic drugs sold in India undergo quality tests as practiced in USA or Europe[3]. (Panagariya, 2017) Ensuring availability of uniform quality of generic drugs would facilitate doctors to prescribe them with confidence. If this is ignored it is likely to create a disastrous situation for the common men where his suffering would increase if he is dispensed "cheaper" poor quality generics. The brunt would fall on the have-nots since, the affluent and the powerful would always manage the quality drugs either generic or branded. This has happened in the larger government institutions where the branded medicines were replaced by generics. Remember while comparing generics with the branded medicines, it is just not the content of the ingredient, it is the purity and the concentration producing effective biological levels in the blood. Another fallout of the proposed change would negatively incentivise pharma companies to invest in research and development. Not only will it create huge unemployment issues but will also greatly hamper creation of newer molecules[4].(Pan, 2018)

2. REVIEW OF LITERATURE

2.1 Effect of perceived quality on Generic Medicines

ShamindraNathSanyal, Saroj Kumar Dattafound (1992) that the value premium of the brand was largely although indirectly dependent on the perception towards the quality of branded generics. Secondly, people would have better expectations from physicians who provide a quality experience, irrespective of minor alterations in the quality of the drug.

[2]Panagariya, A. (2017). Generic medicines in India: The myth and the truth behind the healthcare issue - Firstpost. Retrieved from https://www.firstpost.com/india/generic-medicines-in-india-the-myth-and-the-truth-behind-the-healthcare-issue-3413204.html

[3]Panagariya, A. (2017). Generic medicines in India: The myth and the truth behind the healthcare issue - Firstpost. Retrieved from https://www.firstpost.com/india/generic-medicines-in-india-the-myth-and-the-truth-behind-the-healthcare-issue-3413204.html

[4]Pan, A. (2018). PressReader.com - Connecting People Through News. Retrieved from https://www.pressreader.com/india/rural-marketing/20170601/282437054102089

2.2 Factors affecting the opinions of physicians regarding generic drugs

PawelLewek, JanuszSmigielski, PrzemyslawKardasfound (2001) that physicians recommend cheaper alternatives to branded drugs to their patients and suggest them for personal use. These factors in turn affect the physician's perception of generic drugs.

2.3 Evaluation the Awareness and Attitudes of Physicians Towards Generic Medicines

GauriBilla, Karan Thakkar, SaritaJaiswar, Dinesh Dhodi (2003) found that the doctors did acknowledge the rising cost of medicines. The research also stresses the requirement for alternative medicines that are affordable and emphasizes the role of the government in cutting down on the value of prescription medicines.

2.4 Physicians' and Pharmacists' Perspectives on Generic Drug Use

Else-Lydia Toverud, Katrin Hartmann, HelleHa°konsen (2003) found in their research that physicians were aware of the positive impact generic drugs have in making medicines globally accessible. The researchers also point out that the perception towards generic drugs also varies by the development of their healthcare systems. For instance, countries with advanced healthcare systems produce generic alternatives that are adequately bioequivalent and hence are safer for consumption.

2.5 Perceptions and attitudes of Physicians

Abdullah A. Alghasham (2008) found that while most physicians responded favourably towards the substitution of branded medicines with generic alternatives, there were certain cases where they recommended branded drugs. Secondly, companies with a brand name were more likely to send their representatives on visits or to distribute samples to physicians. Thirdly, physicians believed the government could play a positive role in ensuring the quality of the generic drugs and compel the physicians to prescribe them. Fourthly, there was no major variation in the degree of pressure faced by physicians from customers in prescribing branded drugs or their generic substitutes.

3. RESEARCH METHODOLOGY

3.1 Research Gaps

1. As this study is targeting the RMPs across the city Ahmedabad which highly unexplored landscape when it comes to study like this on Generic Medicines and their perceived quality.
2. Also by this study researcher wants to target the RMPs of Ahmedabad, as this is not researched market.

3.2 Research Questions

1. What are the differences in perceived quality parameters (i.e. Overall Knowledge, Overall Availability, Overall Trust and Faith, & Overall Risk) of generic medicines amongst gender of RMP of Ahmedabad?
2. What are the differences in perceived quality parameters (i.e. overall perceptions, overall BABE, overall efficiency, overall efficacy, overall risk and overall trust and faith) of generic medicines amongst category and qualification of RMP of Ahmedabad?

3.3 Research Objectives

- To study the difference in perceived quality parameters (i.e. Overall Knowledge, Overall Availability, Overall Trust and Faith, & Overall Risk) of generic medicines amongst gender of RMP of Ahmedabad
- To study the difference in perceived quality parameters (i.e. overall perceptions, overall BABE,

overall efficiency, overall efficacy, overall risk and overall trust and faith) of generic medicine

3.4 Research design

The target population comprise individuals who are currently Registered Medical Practitioner, in the hospitals of Ahmedabad and belong to all income groups. The target group has been restricted by geography and the sample has been selected from Ahmedabad city of Gujarat, India Hence I firmly select **Descriptive research** design for our research work.

3.5 Data Sources

3.5.1 Secondary Data: Through

1. Published Papers in renowned Journals
2. Renowned Pharma Journals
3. Articles
4. Government Policies
5. Books
6. Internet
7. Current Government Drug Policy

3.5.2 Primary Data:

The researcher will attempt to collect the response of 137 respondents through Questionnaires.

3.6 Sampling design

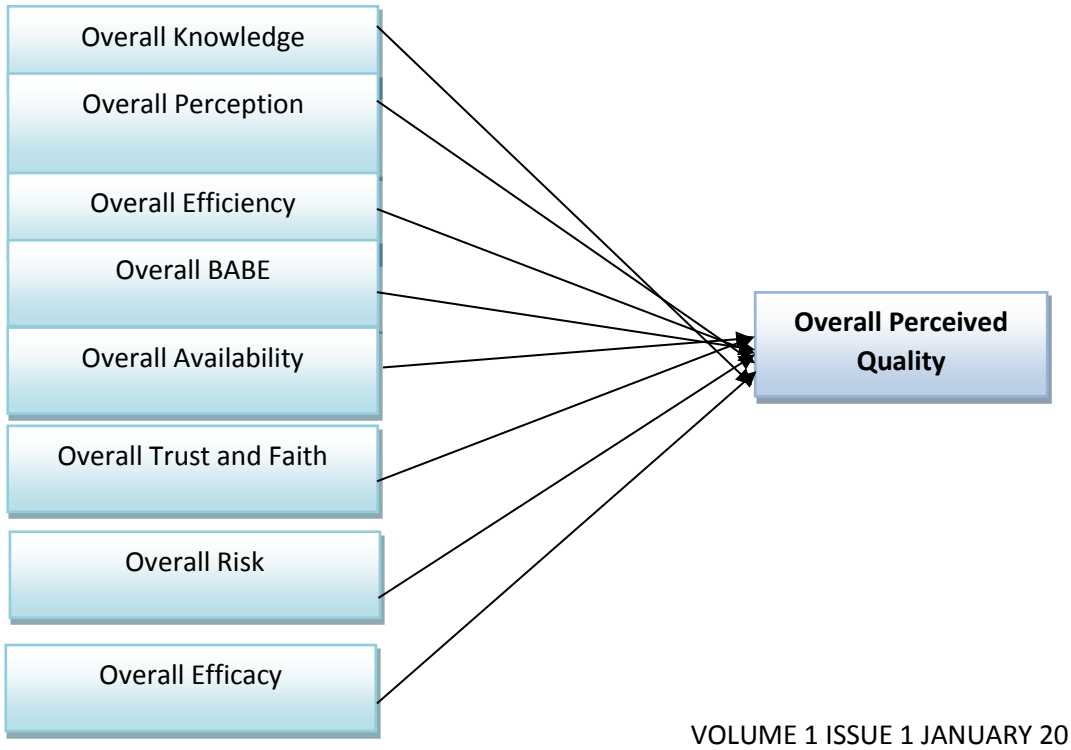
Convenience sampling have been employed for determining the sample of 137 respondents. The respondents in the sample includes Registered Medical Practitioner of all the specialization across Urban, Semi – Urban and Rural areas.

3.7 Variable of the Study

There are two type of variable that have been considered in the study.

1. Independent Variables
2. Dependent Variable

Independent Variables: ***Dependent Variable:***



3.8 Hypotheses of the Study

Table 1 List of Hypothesis

Sr. No	Hypothesis
1	H_0: There is no significant difference between genders of RMPs regarding overall perceived quality parameters (i.e. overall perceptions, overall BABE, overall efficiency, overall efficacy, overall risk and overall trust and faith).
2	H_0: There is no significant difference among various categories of RMPs regarding overall perceived quality parameters (i.e. overall perceptions, overall BABE, overall efficiency, overall efficacy, overall risk and overall trust and faith) of generic medicine.
3	H_0: There is no significant difference among various qualifications of RMPs regarding overall perceived quality parameters (i.e. overall perceptions, overall BABE, overall efficiency, overall efficacy, overall risk and overall trust and faith) of generic medicine.

4. DATA ANALYSIS AND INTERPRETATION:

The difference in Gender with regards Overall Knowledge Overall Availability, Overall Trust and Faith and Overall Risk of Generic Medicine

T-Test

Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	Df
OKN	Equal variances assumed	7.068	.009	2.569	135
	Equal variances not assumed			2.665	134.663
OAV	Equal variances assumed	.821	.367	2.497	135
	Equal variances not assumed			2.467	120.586
OTF	Equal variances assumed	.163	.687	2.391	135
	Equal variances not assumed			2.356	118.934
ORSK	Equal variances assumed	.052	.820	-3.468	135
	Equal variances not assumed			-3.484	129.097

4.1 Gender and Overall Knowledge

H_0: There is no significant difference between male and female regarding overall knowledge
H_1: There is significant difference between male and female regarding knowledge

Considering the independent sample test table, the value F suggest 7.068 with significant value is 0.009, it indicates that Levene's Test significant value which is less than 0.05, it indicates that there is no similarity in the variance between male and female. Considering the t value is 2.569, and significant two tailed value is 0.009, which is less than *0.05, so* the researcher **rejects** null Hypothesis. It indicates that there is significant difference between male and female regarding the overall knowledge

4.2 Gender and Overall Availability

H_0: There is no significant difference between male and female regarding overall availability
H_2: There is significant difference between male and female regarding availability

Considering the independent sample test table, the value F suggest 0.821 with significant value is 0.367, it indicates that Levene's Test significant value which is less than 0.05, it indicates that there is no similarity in the variance between male and female. Considering the t value is 2.497, and significant two tailed value is 0.367, which is less than *0.05, so* we **Accept**null Hypothesis. It indicates that there is no significant difference between male and female regarding the overall availability.

4.3 Gender and Overall Trust and Faith

H_0: There is no significant difference between male and female regarding overall trust and faith
H_3: There is significant difference between male and female regarding trust and faith

Considering the independent sample test table, the value F suggest 0.163 with significant value is 0.687, it indicates that Levene's Test significant value which is less than 0.05, it indicates that there is no similarity in the variance between male and female. Considering the t value is 2.391, and significant two tailed value is 0.687, which is less than *0.05, so* we **Accept**null Hypothesis. It indicates that there is no significant difference between male and female regarding the overall trust and faith.

4.4 Gender and Overall Risk

H_0: There is no significant difference between male and female regarding overall risk
H_4: There is significant difference between male and female regarding risk

Considering the independent sample test table, the value F suggest 0.052 with significant value is 0.820, it indicates that Levene's Test significant value which is less than 0.05, it indicates that there is no similarity in the variance between male and female. Considering the t value is -3.468, and significant two tailed value is 0.820, which is less than *0.05, so* we **Accept**null Hypothesis. It indicates that there is no significant difference between male and female regarding the overall risk.

4.5 Category and Overall Perceptions

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
OPE	Based on Mean	2.656	2	134	.074
	Based on Median	1.854	2	134	.161
	Based on Median and with adjusted df	1.854	2	50.859	.167
	Based on trimmed mean	1.913	2	134	.152

The Levene's Test table indicated that F ratio between and within the sample is 2.656 it means variations between the samples is 2 times more than the variations within the samples. While significant value of the test is 0.074 which is more than 0.05, it indicates that there is no significant difference amongst the value of variance in different groups.

H_0: There is no significant difference among various categories of doctor regarding overall perceptions of generic medicine

H_1: There is significant difference among categories of doctor regarding overall perceptions of generic medicine

Here the researcher wants to understand if there is any significant difference amongst the group related with overall perceptions with respect to categories of doctors.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
OPE	Between Groups	2.414	2	1.207	3.554	.031
	Within Groups	45.499	134	.340		
	Total	47.912	136			

This is the core part of one-way ANOVA analysis and that will derive there is a significant difference amongst the group or not. Here the researcher has the model of test between the subject effects. So far as this content is concerned, the researcher has considered various category groups as a fixed factor and overall perceptions is considered as a dependent variable. For the category group, the value of F ratio is 3.554; The value of significance is 0.031 which is less than 0.05, it indicates that Null Hypothesis cannot be accepted and in this case the researcher accepts the alternative Hypothesis. Hence there is significant difference among various category groups and overall perceptions.
Here the researcher wants to understand in which of the categories of doctors, significant difference has higher values regarding overall perceptions of Generic Medicines.

4.6 Post Hoc Tests

Multiple Comparisons

Tukey HSD							
Dependent Variable	(I) q4category	(J) q4category	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
OPE	Gp	specialist	.12343	.11525	.534	-.1497	.3966
		consultant	-.23556	.12719	.157	-.5370	.0659
	specialist	Gp	-.12343	.11525	.534	-.3966	.1497
		consultant	-.35899*	.13538	.024	-.6798	-.0381
	consultant	Gp	.23556	.12719	.157	-.0659	.5370
		specialist	.35899*	.13538	.024	.0381	.6798

*. The mean difference is significant at the 0.05 level.

Specialist: analyzing the Tukey multiple comparisons, the mean difference of is -0.35899 and significant value is 0.024 and consultant significant value is 0.024 is less than 0.05 indicates that these two categories are significantly different in terms of average value for overall perceptions.

4.7 Category and Overall Efficiency

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
OEF	Based on Mean	.780	2	134	.461
	Based on Median	.729	2	134	.485
	Based on Median and with adjusted df	.729	2	128.807	.485
	Based on trimmed mean	.588	2	134	.557

The Levene's Test table indicated that F ratio between and within the sample is 0.780 it means variations between the samples is 1 time more than the variations within the samples. While significant value of the

test is 0.461 which is more than 0.05, it indicates that there is no significant difference amongst the value of variance in different groups.

H_0: There is no significant difference among various categories of doctor regarding overall efficiency of generic medicine

H_2: There is significant difference among categories of doctor regarding overall efficiency of generic medicine

Here the researcher wants to understand if there is any significant difference amongst the group related with overall efficiency with respect to categories of doctors.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
OEF	Between Groups	5.550	2	2.775	7.780	.001
	Within Groups	47.791	134	.357		
	Total	53.341	136			

This is the core part of one-way ANOVA analysis and that will derive there is a significant difference amongst the group or not. Here the researcher has the model of test between the subject effects. So far as this content is concerned, the researcher has considered various category groups as a fixed factor and overall efficiency is considered as a dependent variable. For the category group, the value of F ratio is 7.780; The value of significance is 0.001 which is less than 0.05, it indicates that Null Hypothesis cannot be accepted and in this case the researcher accepts the alternative Hypothesis. Hence there is significant difference among various category groups and overall efficiency.

Once the researcher has derived statistical inferences amongst the category groups, now the researcher wants to understand that which category group is significantly associated with remaining category groups and which category groups is significantly different than the remaining. Since the category groups having equal intervals the researcher has applied post hoc Tukey test to derive the facts.

4.8 Post Hoc Tests

Multiple Comparisons

Tukey HSD							
Dependent Variable	(I) q4category	(J) q4category	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
OEF	Gp	specialist	-.20107	.11812	.208	-.4810	.0789
		consultant	.34486*	.13035	.025	.0359	.6538
	specialist	Gp	.20107	.11812	.208	-.0789	.4810
		consultant	.54593*	.13875	.000	.2171	.8748
	consultant	Gp	-.34486*	.13035	.025	-.6538	-.0359
		specialist	-.54593*	.13875	.000	-.8748	-.2171

Consultant: analyzing the Tukey multiple comparisons, the mean difference of is -0.34486 and significant value is 0.025 and GP significant value is 0.025 is less than 0.05 indicates that these two categories are significantly different in terms of average value for overall efficiency.

Consultant: analyzing the Tukey multiple comparisons, the mean difference of is -0.54593 and significant value is 0.000 and specialist significant value is 0.000 is less than 0.05 indicates that these two categories are significantly different in terms of average value for overall efficiency.

4.9 Category and Overall Trust and Faith

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
OTF	Based on Mean	8.480	2	134	.000
	Based on Median	6.783	2	134	.002
	Based on Median and with adjusted df	6.783	2	90.775	.002
	Based on trimmed mean	8.771	2	134	.000

The Levene's Test table indicated that F ratio between and within the sample is 8.480 it means variations between the samples is 8 times more than the variations within the samples. While significant value of the test is 0.000 which is less than 0.05, it indicates that there is significant difference amongst the value of variance in different groups.

As Homogeneity of Variances is not found, it is not possible to test them for ANOVA.

An alternative test of Anova known as Welch Test is performed in order to find the relation.

H_0: There is no significant difference amongst various categories of doctor regarding overall trust and faith of generic medicine

H_3: There is significant difference amongst categories of doctor regarding overall trust and faith of generic medicine

Here the researcher wants to understand if there is any significant difference amongst the group related with overall trust and faith with respect to categories of doctors.

Robust Tests of Equality of Means

	Statistic[a]	df1	df2	Sig.
Welch	4.478	2	67.369	.015

a. Asymptotically F distributed.

This is the core part of Welch Test analysis and that will derive there is a significant difference amongst the group or not. Here the researcher has the model of test between the subject effects. The value of F ratio is 4.478; The value of significance is 0.015 which is less than 0.05, it indicates that Null Hypothesis cannot be accepted and in this case the researcher accepts the alternative Hypothesis. Hence there is significant difference among various category groups and overall trust and faith.

Once the researcher has derived statistical inferences amongst the category groups, now the researcher wants to understand that which category group is significantly associated with remaining category groups and which category groups is significantly different than the remaining. Since the category groups having equal intervals the researcher has applied post hoc Games – Howell test to derive the facts.

4.10 Post Hoc Tests

Multiple Comparisons

Games-Howell						
(I) q4category	**(J) q4category**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**	**95% Confidence Interval**	**95% Confidence Interval**
					Lower Bound	Upper Bound
Gp	Specialist	.34039*	.13887	.045	.0066	.6742
	Consultant	.24749	.11272	.081	-.0245	.5195
Specialist	Gp	-.34039*	.13887	.045	-.6742	-.0066
	Consultant	-.09290	.16049	.832	-.4768	.2910
Consultant	Gp	-.24749	.11272	.081	-.5195	.0245
	specialist	.09290	.16049	.832	-.2910	.4768

*. The mean difference is significant at the 0.05 level.

GP: analyzing the Games – Howell multiple comparisons, the mean difference of is 0.34039 and significant value is 0.045 and specialist significant value is 0.045 is less than 0.05 indicates that these two categories are significantly different in terms of average value for overall trust and faith.

4.11 The difference among various qualifications of RMPs regarding overall perceived quality parameters (i.e. overall perceptions, overall BABE, overall efficiency, overall efficacy, overall risk and overall trust and faith) of generic medicine.

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
OAV	Between Groups	10.432	3	3.477	8.416	.000
	Within Groups	54.951	133	.413		
	Total	65.383	136			
OPE	Between Groups	4.609	3	1.536	4.718	.004
	Within Groups	43.303	133	.326		
	Total	47.912	136			
OBABE	Between Groups	6.328	3	2.109	6.136	.001
	Within Groups	45.720	133	.344		
	Total	52.049	136			
OEF	Between Groups	4.780	3	1.593	4.364	.006
	Within Groups	48.560	133	.365		
	Total	53.341	136			
OTF	Between Groups	5.769	3	1.923	5.223	.002
	Within	48.971	133	.368		

	Groups					
	Total	54.740	136			
ORSK	Between Groups	8.258	3	2.753	8.408	.000
	Within Groups	43.543	133	.327		
	Total	51.801	136			
OEFFICACY	Between Groups	11.532	3	3.844	8.376	.000
	Within Groups	61.041	133	.459		
	Total	72.573	136			

4.12 Qualification and Overall Availability

H_0: There is no significant difference amongst various qualifications of doctor regarding overall availability of generic medicine
H_1: There is significant difference amongst various qualifications of doctor regarding overall availability of generic medicine

In the core part of one-way ANOVA analysis and that will derive there is a significant difference amongst the group or not. Here the researcher has the model of test between the subject effects. So far as this content is concerned, the researcher has considered various qualifications groups as a fixed factor and overall availability is considered as a dependent variable. For the category group, the value of F ratio is 8.416; The value of significance is 0.000 which is less than 0.05, it indicates that Null Hypothesis cannot be accepted and in this case the researcher accepts the alternative Hypothesis. Hence there is significant difference amongst various qualifications groups and overall availability.

4.13 Qualification and Overall Perceptions

H_0: There is no significant difference amongst various qualifications of doctor regarding overall perceptions of generic medicine
H_2: There is significant difference amongst various qualifications of doctor regarding overall perceptions of generic medicine

For the category group, the value of F ratio is 4.718; The value of significance is 0.004 which is less than 0.05, it indicates that Null Hypothesis cannot be accepted and in this case the researcher accepts the alternative Hypothesis. Hence there is significant difference amongst various qualifications groups and overall perceptions.

4.14 Qualification and Overall BA-BE

H_0: There is no significant difference amongst various qualifications of doctor regarding overall BA-BE of generic medicine
H_3: There is significant difference amongst various qualifications of doctor regarding overall BA-BE of generic medicine

For the category group, the value of F ratio is 6.136; The value of significance is 0.001 which is less than 0.05, it indicates that Null Hypothesis cannot be accepted and in this case the researcher accepts the alternative Hypothesis. Hence there is significant difference amongst various qualifications groups and overall BA-BE.

4.15 Qualification and Overall Efficiency

H_0: There is no significant difference amongst various qualifications of doctor regarding overall efficiency of generic medicine
H_4: There is significant difference amongst various qualifications of doctor regarding overall efficiency of generic medicine

For the category group, the value of F ratio is 4.364; The value of significance is 0.006 which is less than 0.05, it indicates that Null Hypothesis cannot be accepted and in this case the researcher accepts the alternative Hypothesis. Hence there is significant difference amongst various qualifications groups and overall efficiency.

4.16 Qualification and Overall Trust and Faith

H_0: There is no significant difference amongst various qualifications of doctor regarding overall Trust and Faith of generic medicine
H_5: There is significant difference amongst various qualifications of doctor regarding overall Trust and Faith of generic medicine

For the category group, the value of F ratio is 5.223; The value of significance is 0.002 which is less than 0.05, it indicates that Null Hypothesis cannot be accepted and in this case the researcher accepts the alternative Hypothesis. Hence there is significant difference amongst various qualifications groups and overall trust and faith.

4.17 Qualification and Overall Risks

H_0: There is no significant difference amongst various qualifications of doctor regarding overall risk of generic medicine
H_6: There is significant difference amongst various qualifications of doctor regarding overall risk of generic medicine

For the category group, the value of F ratio is 8.408; The value of significance is 0.000 which is less than 0.05, it indicates that Null Hypothesis cannot be accepted and in this case the researcher accepts the alternative Hypothesis. Hence there is significant difference amongst various qualifications groups and overall risks.

Qualification and Overall Efficacy

H_0: There is no significant difference amongst various qualifications of doctor regarding overall efficacy of generic medicine
H_7: There is significant difference amongst various qualifications of doctor regarding overall efficacy of generic medicine

For the category group, the value of F ratio is 8.376; The value of significance is 0.000 which is less than 0.05, it indicates that Null Hypothesis cannot be accepted and in this case the researcher accepts the alternative Hypothesis. Hence there is significant difference amongst various qualifications groups and overall efficacy.

5. FINDINGS

- When overall different aspects of perceived quality have been checked considering gender, it has been found out that there is significant difference between males and females with regard to overall trust, overall risk, overall knowledge and overall availability.

- There is significant difference with regard to overall perception among various categories namely general practitioners, specialists and consultants. Further considering the post hoc analysis it has been found out that Specialist and consultants are significantly different in terms of average value for overall perceptions when multiple comparisons between different categories has been performed. More over specialist uses more generic medicine in comparison to the consultants.
- There is significant difference with regard to overall efficiency among various categories namely general practitioners, specialists and consultants. Further considering the post hoc analysis it has been found out that consultants and GP are significantly different in terms of average value for overall efficiency when multiple comparisons between different categories has been performed. Further considering the post hoc analysis it has been found out that consultants and specialists are significantly different in terms of average value for overall efficiency when multiple comparisons between different categories has been performed.
- There is significant difference with regard to overall trust and faith among various categories namely general practitioners, specialists and consultants. Further considering the post hoc analysis it has been found out that GP and specialists are significantly different in terms of average value for overall efficiency when multiple comparisons between different categories has been performed.
- There is significant difference with regard to overall availability among various categories namely general practitioners, specialists and consultants. Further considering the post hoc analysis it has been found out that GP and specialists are significantly different in terms of average value for overall efficiency when multiple comparisons between different categories has been performed.
- There is significant difference with regard to overall availability among various categories namely general practitioners, specialists and consultants.
- There is significant difference with regard to overall availability among various qualifications namely MBBS, MD and MS. There is significant difference with regard to overall perceptions among various qualifications namely MBBS, MD and MS. There is significant difference with regard to overall BA-BE among various qualifications namely MBBS, MD and MS. There is significant difference with regard to overall efficiency among various qualifications namely MBBS, MD and MS. There is significant difference with regard to overall trust and faith among various qualifications namely MBBS, MD and MS. There is significant difference with regard to overall risks among various qualifications namely MBBS, MD and MS. There is significant difference with regard to overall efficacy among various qualifications namely MBBS, MD and MS.

6. CONCLUSION

Perceived Quality of Generic Medicine and its dimension have been studied by different authors since years, but direct relationship between perceived quality of generic medicine and overall knowledge has not been studied so far. In this research, an attempt was made to establish a bridge between overall knowledge of generic medicines and perceived quality of generic medicine. Again the overall perceived quality is also connected with overall perceptions, overall BABE, overall efficiency, overall efficacy, overall risk and overall trust and faith. There is a lack of awareness with regard to the benefits of generic medicines both on demand side and supply side. So hereby researcher attempts a research which is specifically targeted to the registered medical practitioners of Ahmedabad city. Again, the overall knowledge is also connected with overall perceptions, overall BABE (Bio Availability and Bio Equivalence), overall efficiency, overall efficacy, overall risk and overall trust and faith. For the purpose of research, registered medical practitioners amongst Ahmedabad, Gujarat were selected. Data was collected from the 137 RMPs and hypothesized relation was established between overall perceptions, overall BABE, overall efficiency, overall efficacy, overall risk and overall trust and faith, overall knowledge and overall perceived quality of generic medicines. The result of the analysis stipulates that there are significant differences between these parameters w.r.t the gender, qualification and category.

REFERENCES

1. Abbott, T. A. and J. A. Vernon (2007), 'The Cost of US Pharmaceutical Price Regulation: A Financial Simulation Model of R&D Decisions', Managerial and Decision Economics 28, 293-306
2. Abbott, T. A. and J. A. Vernon (2007), 'The Cost of US Pharmaceutical Price Regulation: A Financial Simulation Model of R&D Decisions', Managerial and Decision Economics 28, 293-306
3. Abboud, L. (2004), 'Drug Makers Use New Tactic to Ding Generic-Drug Firms', URL:
4. Abdullah A. 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. doi: 10.1345/aph.1M141.
5. CDER - Center for Drug Evaluation Research (1998), 'The CDER Handbook', URL: http://goo.gl/wS4nT4 (Accessed on April 14, 2018).
6. Copy of f1.pdf – NPPPNotification.pdf [Internet] . [Accessed on 2018 May 2]. Available from: http://www.nppaindia.nic.in/NPPPNotification.pdf.
7. Copy of f1.pdf – NPPPNotification.pdf [Internet] . [Accessed on 2018 May 2]. Available from: http://www.nppaindia.nic.in/NPPPNotification.pdf.
8. Costa-Font, J., A. McGuire, and N. Varol (2014), 'Price Regulation and Relative Delays in Generic Drug Adoption', Health Economics 38, 1-9.
9. Costa-Font, J., C. Rudisill, and S. Tan (2014), 'Brand Loyalty, Patients and Limited Generic Medicines Uptake', Health Policy 116, 224-233.
10. Costa-Font, J., C. Rudisill, and S. Tan (2014), 'Brand Loyalty, Patients and Limited Generic Medicines Uptake', Health Policy 116, 224-233.
11. Danzon, P. M. and M. F. Furukawa (2008), 'International Prices and Availability of Pharmaceuticals in 2005', Health Affairs 27, 221-233.
12. DiMasi, J. A. (2002), 'The Value of Improving the Productivity of the Drug Development Process: Faster Times and Better Decisions', PharmacoEconomics 20, 1-10.
13. Elysa K, Kartanin H. Generic substitution: a potential risk factor for medication errors in hospitals. AdvTher. 2010;27(2):118–26.
14. Galizzi, M. M., S. Ghislandi, and M. Miraldo (2011), 'Effects of Reference Pricing in Pharmaceutical Markets', PharmacoEconomics 29, 17-33.
15. Gauri B, Karan T, Sarita J, Dinesh M. Generic substitution: additional challenge for adherence in hypertensive patients? Curr Med Res Opin. 2009;25(10):2515–21.
16. Generic Index | DrugsUpdate India. [Accessed on 2018 May 2]. Available from: http://www.drugsupdate.com/generic/listing.
17. Health Expenditure, Total (% of GDP) | Data | Table. [Accessed on 2018 May 2]. Available from: http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS.
18. http://www.wsj.com/articles/SB10751578402981209O (Accessed May 02, 2018).
19. Microsoft Word-Briefing-Note-INDIA-2014-doc-Briefing-Note-INDIA-2014.pdf. [Accessed on 2018 May 2]. Available from: http://www.oecd.org/els/health-systems/Briefing-Note-INDIA-2014.pdf.
20. Microsoft Word-Briefing-Note-INDIA-2014-doc-Briefing-Note-INDIA-2014.pdf. [Accessed on 2018 May 2]. Available from: http://www.oecd.org/els/health-systems/Briefing-Note-INDIA-2014.pdf.
21. Pawell L, Januszeki p. International harmonization of bioequivalence studies and issues shared in common. YakugakuZasshi. 2000;120(11):1193–200.
22. Paying the Price - The Hindu. [Accessed on 2018 May 2]. Available from: http://www.thehindu.com/opinion/op-ed/paying-the-price/article4912732.ece.
23. Ruggeri, K. and E. Nolte (2013), Pharmaceutical Pricing: The Use of External Reference Pricing, RAND Europe, Pittsburgh.
24. Shaminder N, Saroj K. A review of patient perspectives on generic substitution: what are the challenges for optimal drug use? GaBI J. 2012;1(1):28–32.
25. Swinney, D. C. and J. Anthony (2011), 'How were Medicines Discovered?' Nature Reviews Drug Discovery 10, 507-519.
26. Swinney, D. C. and J. Anthony (2011), 'How were Medicines Discovered?' Nature Reviews Drug Discovery 10, 507-519.

27. The World Medicines Situation 2011. The World Health Organisation. [Accessed on 2018 May2].Availablefrom:http://apps.who.int/medicinedocs/documents/s18772en/s18772en.pdf.
28. Where Are We Now: Assessing the Price, Availability and Affordability of Essential Medicines in Delhi as India Plans Free Medicine for All. [Accessed 2018 May 2]. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3733775.
29. Wittkowsky, T. X. (2001), 'Intellectual Property and Other Legal Aspects of Drug Repurposing', Drug Discovery Today: Therapeutic Strategies 8, 139-143.
30. www.emis.com
31. www.euromonitor.com
32. www.statista.com