References

Aivalli, P. K., Elias, M. A., Pati, M. K., Bhanuprakash, S., Munegowda, C., Shroff, Z. C., & Srinivas, P. N. (2018). Perceptions of the quality of generic medicines: implications for trust in public services within the local health system in Tumkur, India. *BMJ Global Health, 2*:e00064. https://doi:10.1136/bmjgh-2017-000644

Alfonso-Cristancho, R., Andia, T., Barbosa, T., and Watanabe, J. H. (2015). Definition and Classification of Generic Drugs Across the World. *Applied health economics and health policy, 13* Suppl 1, S5–S11. https://doi.org/10.1007/s40258-014-0146-1

Alrasheedy, A. A., Hassali, M. A., Stewart, K., Kong, D. C. M., Aljadhey, H., Mohamed Izham, M., Ibrahim, M., & Al-Tamimi, S. K. (2014). Patient knowledge, perceptions, and acceptance of generic medicines: a comprehensive review of the current literature. *Dove Press Journal, 6*:1-29.

Babar, Z.U., Stewart, J., Reddy S., Alzaher, W., Vareed, P., Yacoub, N., Dhroptee, B., & Rew, A. (2010). An evaluation of consumers' knowledge, perceptions and attitudes regarding generic medicines in Auckland. *Pharmacy World & Science, 32*(4):440–448.

Bachheti, M., & Saklani, A. (2013). What Affects Customer Loyalty: Trust, Rewards, or Relationship Management? In proceedings of the 2013 Conference of Academy of Marketing (Cardiff).

Badwaik, R. T., Chopade, S. S., Mahajan, H. M., & Honrao, R. (2015). Prescribers views on generic medicines: A study on knowledge, attitude and practice. *J Cont Med A Dent, 3*(2), 27-32.

Bate, R. (2010). Are Drugs Made in Emerging Markets Good Quality? https://ciaotest.cc.columbia.edu/wps/aei/0023099/f_0023099_18889.pdf

Bertoldi, A. D., Barros A. J. D., & Hallal, P. C. (2005). Generic drugs in Brazil: known by many, used by few. *Cadernos de saude publica/Ministerio da Saude, Fundacao Oswaldo Cruz, Escola Nacional de Saude Publica 21*(6): 1808–1815.

Billa, G., Thakkar, K., Jaiswar, S., & Dhodi, D. (2014). A Cross-Sectional Study to Evaluate the Awareness and Attitudes of Physicians Towards Reducing the Cost of Prescription Drugs, Mumbai. Applied Health Economics and Health Policy, 12 (2):125–137.

Burns, A. C., & Bush, R. F. (2003). *Marketing Research: online research applications* (4th Edition). Prentice Hall

Cameron, A., Mantel-Teeuwisse, A. K., Leufkens, H. G., & Laing, R. O. (2012). Switching from originator brand medicines to generic equivalents in selected developing countries: How much could be saved? Value Health, *15*:664–73.

Chaturvedi, S. (2017). Generic drug prescription: Possible issues, impacts and consequences. *Pharma Tutor, 5*(5).

Chua, G. N., Hassali, M. A., Shafie, A. A., & Awaisu, A (2010). A survey exploring knowledge and perceptions of general practitioners towards the use of generic medicines in the northern state of Malaysia. *Health Policy*, *95*(2-3): 229 – 235

Clancy, K. J., and Shulman, R. S. (1994). *Marketing Myths that are Killing Business*, New York: McGraw Hill, Inc., pp. 63.

Colgan, S., Faasse, K., Martin, L. R., Stephens, M. H., Grey, A., & Petrie, K. J. (2015). Perceptions of generic medication in the general population, doctors and pharmacists: a systematic review, *BMJ Open 5*(12):e008915. https://doi:10.1136/bmjopen-2015-008915

Cronbach, L. J. (1971*). Test validation: In Educational measurement* (2nd Edition), R. L. Thorndike, Ed., Washington, DC: American Council on Education.

Dhale, S., & Singh, A. (2020). Perception of Medical Professionals and Pharmacists towards Generic and Branded Drugs. *Indian Journal of Forensic Medicine & Toxicology, 14*(4):7152-7156

Dohle, S., & Siegrist, M. (2014). Cognitive and affective determinants of generic drug acceptance and use: cross-sectional and experimental findings. *Health Psychology & Behavourial Medicine, 1* (1): 5–14

Fabiano, V., Mameli, C., Cattaneo, D., Delle, F. A., Preziosa, A., Mele, G., Clementi, E., & Zuccotti, G. V. (2012). Perceptions and patterns of use of generic drugs among Italian family pediatricians: first round results of a web survey. *Health Policy. 104*(3):247-52

FDA (2018, December 31) *Generic Drugs: Questions & Answers* https://www.fda.gov/drugs/frequently-asked-questions-popular-topics/generic-drugs-questions-answers

George, V., Mullavelil, K., Joseph, A. T., Koshy, C., & Venugopal, K. N. (2020). Quantitative analysis, cost comparison, physician, and patient perceptions on generic versus branded clopidogrel bisulfate Tablets marketed in Kerala, India. *Journal of the Practice of Cardiovascular Sciences*, *6*(1), 40.

Gupta, R., Malhotra, A., & Malhotra, P. (2018). A study on assessment of awareness on generic drugs among doctors in a tertiary care teaching hospital in north India. *International Journal of Research in Medical Sciences*.*6*(4):1362-1367.

Gupta, S. K., Nayak, R. P., & Vidyarthi, S. K. (2015). A study on the knowledge, attitude, and practice of generic medicines among the doctors in a tertiary care teaching hospital in South India. *Natl J Physiol Pharm Pharmacol 5*:39-44.

Guttier, M. C., Silveira, M. P. T., Luiza, V. L., & Bertoldi, A. D. (2017). Factors influencing the preference for purchasing generic drugs in a Southern Brazilian city. *Revista de saude publica*, *51*.

Hair, J. F., Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th edition). Prentice Hall

Hassali, M. A., Shafie, A. A., Jamshed, S., Ibrahim, M. I., & Awaisu, A. (2009). Consumers' views on generic medicines: a review of the literature. *International Journal of Pharmacy Practice*, *17*(2), 79-88.

Hassali, M. A., Wong, Z. Y., Alrasheedy, A. A., Saleem, F., Mohamad Yahaya, A. H., & Aljadhey, H. (2014). Does educational intervention improve doctors' knowledge and perceptions of generic medicines and their generic prescribing rate? A study from Malaysia. *SAGE Open Medicine, 2*, 2050312114555722.

Heikkilä, R., Mäntyselkä, P., Hartikainen-Herranen, K., & Ahonen, R. (2007). Customers' and Physicians' opinions of and experiences with generic substitution during the first year in Finland. *Health Policy, 82*(3):366–374

Higgins-Dunn, N. (2022, May 15). *The top 15 blockbuster patent expirations coming this decade*. https://www.fiercepharma.com/special-report/top-15-blockbuster-patent-expirations-coming-decade

Hoshi, S., & Kimura, H. (2008). Questionnaire on the awareness of generic drugs among outpatients and medical staff. *Drug Discoveries & Therapeutics, 2*(3):194–199.

Index Mundi (2022, June 11) *India – Rural population* https://www.indexmundi.com/ facts/india/rural-population

James, P., Bah, A., Margao, E., Hanson, C., Kabba, J., & Jamshed, S. (2018). Exploring the Knowledge and Perception of Generic Medicines among Final Year Undergraduate Medical, Pharmacy, and Nursing Students in Sierra Leone: A Comparative Cross-Sectional Approach. *Pharmacy, 6*(1), 3. https://doi.org/10.3390/pharmacy6010003

Janaushadhi (2022, July 07) https://www.janaushadhi.gov.in

Kamejaliya, D. Z., Kapadia, J. D., Desai, C. K., & Desai, M. K. (2017). Knowledge, Attitude and Practice of Resident Doctors for use of Generic Medicines at a Tertiary care Hospital. *Journal of Young Pharmacists, 9*(2): 263-266.

Kothari, C. R. (1990). *Research Methodology*. India: New Age International

Kumar, R. (2011). *Research Methodology*. India: Sage Publications

Laing, R., Waning, B., Gray, A., Ford, N., & Hoen, E. (2003). 25 years of the WHO essential medicines lists: progress and challenges. *Lancet;361*(9370):1723–9.

Lever, H. M. (2020). A physician's perspective on generic drug quality. *Journal of Managed Care & Specialty Pharmacy, 26*(5), 592-593.

Medical debt a major cause of poverty in India. Retrieved July 13, 2022 from https://www.tribuneindia.com/news/archive/comment/medical-debt-a-major-cause-of-poverty-in-india-866182

Nabil A., Al-Gedadi N. A., Hassali M. A., & Shafie A.A. (2008). A pilot survey on perceptions and knowledge of generic medicines among consumers in Penang, Malaysia', *Pharmacy Practice, June; 6*(2):93-97.

Narayan, M., Mohanty, B., & Kumar, M. (2020). Examining the Effect of Marketing Promotional strategies of Pharmaceutical Companies on Doctors' Prescription Behaviour. *Research J. Pharm. and Tech. 13*(10)*:4888-4894.*

Nardi, R., Masina, M., Cioni, G., Leandri, P., & Zuccheri, P. (2014). Generic equivalent drugs use in internal and general medicine patients: distrust, confusion, lack of certainties or of knowledge? Part 2. Misconceptions, doubts and critical aspects when using generic drugs in the real world. *Ital J Med. 8*(2):88–98

NPPA (2018, December 31). *National list of essential medicines*. National list of essential medicines. http://vikaspedia.in/health/nrhm/national-health-policies/national-list-of-essential-medicines.

National Pharmaceutical Pricing Authority. Retrieved December 31, 2018 from http://www.nppaindia.nic.in

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.

Patel, K., Yasobant, S., Charan, J., Chaudhari, M., Gaidhane, A., & Saxena, D. (2020). Acceptability and Perceptions of Generic Drugs among Patients, Pharmacists, and Physicians. *J Pharm Res Int*, 40-7.

Pharma Tutor (2022, January 10). *Why generic drugs not so popular?* https://www.pharmatutor.org/articles/why-generic-drugs-not-so-popular%3F

Precedence Research (2022, May 15). *Generic drug market growth: insights to 2030*. https://www.europeanpharmaceuticalreview.com

Rosenthal, R., & Rosnow, R. L. (1984). *Essential of behavioral research: Methods and data analysis*. McGraw Hill.

Roy, V., & Rana, P. (2018). Prescribing generics: All in a name. *Indian Journal of Medical Research, 147*(5): 442–444.

Sanyal, S. N., & Datta S. K. (2011). The effect of perceived quality on brand equity: an empirical study on generic drug. *Asia Pacific Journal of Marketing & Logistics, 23* (5): 604 – 6025

Schuessler, K. (1971). *Analyzing social data*. Boston, MA: Houghton Mifflin.

Sharrad, A. K., & Hassali, M. A. (2011). Consumer perception on generic medicines in Basrah, Iraq: preliminary findings from a qualitative study. *Res Social Adm Pharm, 7*(1):108–112.

Shetti, G., & Khanna, V. T. (2019). Role of Prescriptions in the Pharmaceutical Market: A Willingness to prescribe study of the Generic drugs. *BVIMSR's Journal of Management Research, 11*(2), 124-130.

Singal, G. L., Nanda, A., & Kotwani, A. (2011). A comparative evaluation of price and quality of some branded versus branded– generic medicines of the same manufacturer in India. *Indian Journal of Pharmacology, 43*(2):131-136.

Singh, K. R., Phatak, A. M., & Sathe, M. A. (2016). Beliefs and attitudes of generic versus original drugs among doctors in a tertiary-care hospital in Western

India. *National Journal of Physiology, Pharmacy and Pharmacolog, 6*(4): 276-281

Singh, P., Ravi, S., & Dam, D. (2022, June 11) *Medicines in India: Accessibility, Affordability and Quality.* https://www.brookings.edu/research/medicines-in-india-accessibility-affordability-and-quality/

Soans, A. (2022, April 14) *Quality, not price, the key issue when prescribing generic drugs in India.* https://thewire.in/health/drugs-generics-branded-health

Toklu, H. Z., Dulger, G. A., Hidiroglu, S., Akici, A., Yetim, A., Gannemoglu, H. M., & Gunes, H. (2012). Knowledge and attitudes of the pharmacists, prescribers and patients towards generic drug use in Istanbul, Turkey. *Pharm Pract (Granada), 25*(35):36–45.

Tripathi, S., & Bhattacharya, S. (2018). Patient Perception about Generic vs. Branded Medicines Prescribed in a Tertiary Care Hospital in Northern India-A Descriptive Study. *Indian Journal of Pharmacy Practice, 11*(2).

USFDA (2021, January 9). *Product-specific guidance for generic drug development* https://www.accessdata.fda.gov/scripts/cder/psg/index.cfmProduct-Specific Guidancesfor Generic Drug Development

White, C. M. (2019). Generic drugs not as safe as FDA wants you to believe. *Annals of pharmacotherapy*, *54*(3), 283-286.

WHO (2021, June 8) *Drug information from WHO*. http://www.who.int/medicines/publications/druginformation/WHO_DI_30-3_GenericMedicines.pdf

WHO (2022, May 14). *Model list of essential medicines - 22nd list, 2021*. https://www.who.int/publications/i/item/WHO-MHP-HPS-EML-2021.02

Zigmund, W. G. (1995). *Business Research Methods* (5th Edition). Fort Worth, TX: The Dryden Press.

BIBLIOGRAPHY

Eban, K. (2019). *Bottle of lies: the inside story of generic drug boom*. ECCO Y

Goldman, K. A., Cohen, W. E., Grimm, K. L., Bryan, C. N., Nelson, R. A., Wendling, B. W., Hertzendorf, M., Olson, L. M., Hadeishi, H., Koc, C., Kuczura, G. J., Connelly, E. & Towey, J. (2011). A *report of the Federal Trade Commission: Authorised Generic Drugs: Short-term effects and long-term impacts.* federal trade commission

Kamble, H., Reddy, S. F., Mahapatra, H., Khanpure, B. T., Veljee, S. A., Kosta, S. & Nasa, A. K. (2016). R*eport of sub-committee constituted by the Drugs Consultative Committee to examine the issue of regulating the sale of drugs over internet under the drugs and cosmetics rules, 1945.* Government of India

Mashelkar, R. A. (2003). *Report of the expert committee on a comprehensive examination of drug regulatory issues, including the problem of spurious drugs.* Ministry of Health and Family Welfare, Government of India.

APPENDICES

Appendix A Questionnaire

Generic Drugs Questionnaire

The purpose of this study is to examine Medical Practitioners' knowledge, perception, attitude towards generic medicines and help develop an insight and understanding of the prescription behavior towards generic medicines. This study is being conducted purely for academic learning and is part of doctoral thesis of the researcher. The responses and personal details will not be shared or disclosed for any other reason. Kindly spare some time to fill this questionnaire.

Thank you!

(Sunil Madan – PhD Student, SRHU
Mobile # 941134100, Email:sunil.madan@usa.net)

YOUR PARTICULARS

Name _____

Center Name _____

Center Location _____

Please tick (✓) the relevant box.

GENDER Male [1] Female [2]

AGE (in years) < 30 [1] 31 – 40 [2] 41 – 50 [3] 51 – 60 [4] > 60 [5]

HEALTHCARE CENTER Primary [1] Secondary [2] Tertiary [3]

EMPLOYMENT Self-employed [1] Govt. Hospital [2] Private Hospital [3]

NUMBER OF YEARS OF MEDICAL PRACTICE [ ][ ]

HIGHEST QUALIFICATION

MBBS [1]
MD [2]
MS [3]
DNB [4]
DCH [5]
DLO [6]
DSO [7]
DM [8]
MCh [9]
Any other [10] _____(please specify)

SPECIALITY

Anesthesiology [1]
Cardiology [2]
Dermatology [3]
ENT [4]
Gastroenterology [5]
General Medicine [6]
General Physician [7]
General Surgery [8]
Gynecology [9]
Any other _____(please specify) [19]
Nephrology [10]
Neurology [11]
Oncology [12]
Ophthalmology [13]
Orthopedics [14]
Pathology/ Radiology [15]
Pediatrics [16]
Psychiatry [17]
Urology [18]

Listed below are statements about your knowledge, perception, attitude towards generic medicines. Please tick (✓) one box for each statement to indicate the extent to which you agree or disagree with each statement.

Strongly Disagree	*Disagree*	*Neutral*	*Agree*	*Strongly Agree*
1	2	3	4	5

#	Statements	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
1.	Composition, dose and indications of generic medicines are same as branded / innovator medicine.	1	2	3	4	5
2.	All generic products of a particular medicine that are rated as generic equivalents are therapeutically equivalent to each other.	1	2	3	4	5
3.	Generic drugs are usually intended to be interchangeable with an innovator / branded drug.	1	2	3	4	5
4.	Generic drugs can be only marketed after the expiry date of the patent of innovator.	1	2	3	4	5
5.	I have limited awareness about the *Jan-Aushadhi* scheme of Government of India.	1	2	3	4	5
6.	I am aware of Indian Medical Council guidelines to prescribe medicines by generic names in place of brand names.	1	2	3	4	5
7.	A generic medicine is bioequivalent to a brand name medicine.	1	2	3	4	5
8.	I believe all generic drugs are as effective as original drugs.	1	2	3	4	5
9.	I believe generic drugs available at *Jan Aushadhi* are as effective as original drugs.	1	2	3	4	5
10.	I believe that medicines of multinational companies are of good quality than of local company.	1	2	3	4	5
11.	I view few local companies as reputable generic drug companies.	1	2	3	4	5
12.	Brand name medicines are required to meet higher safety standards than generic medicines.	1	2	3	4	5
#	Statements	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE

13.	I believe promotion by the drug companies will influence my future prescribing pattern.	1	2	3	4	5
14.	I believe doctors should be educated more about generic medicines.	1	2	3	4	5
15.	I believe that pharmacists are one of the most important health care professionals to give advice on generic medicines.	1	2	3	4	5
16.	Hospital budget for drug procurement factor will affect my choice of medicines.	1	2	3	4	5
17.	I believe more confidence should be built among doctors about generic medicines.	1	2	3	4	5
18.	I believe brand-name drugs are usually made in modern manufacturing facilities, and generics are in substandard facilities.	1	2	3	4	5
19.	Generic drugs cost less but are as good as brand-name drugs.	1	2	3	4	5
20.	Generic drugs of *Jan Aushadhi* cost less but are as good as brand-name drugs.	1	2	3	4	5
21.	Incentives should be paid to doctors for prescribing generics.	1	2	3	4	5
22.	Branded drug prescription should not be substituted by generic drugs.	1	2	3	4	5
23.	Patient should have the liberty to choose generics over branded drugs.	1	2	3	4	5
24.	I usually prescribe generic drugs.	1	2	3	4	5
#	**Statements**	***STRONGLY DISAGREE***	***DISAGREE***	***NEUTRAL***	***AGREE***	***STRONGLY AGREE***
25.	I hesitate to prescribe generics in few therapeutic cases / some diseases.	1	2	3	4	5

26.	My prescription is influenced by my personal experience with medicines.	1	2	3	4	5
27.	My prescription is influenced by the patients' demands.	1	2	3	4	5
28.	I consider the socioeconomic status of the patient while prescribing medicines.	1	2	3	4	5
29.	I prescribe branded drugs because their names are easy to memorize.	1	2	3	4	5
30.	Medical representatives influence my prescription.	1	2	3	4	5
31.	I usually prescribe medicines that are easily available.	1	2	3	4	5
32.	Switching a patient from a brand name to generics may change the outcome of the therapy.	1	2	3	4	5
33.	I have not read any time any article on comparison of safety and efficacy of generic vs. brand name medicines.	1	2	3	4	5
34.	Awareness seminars should be conducted for doctors to initiate prescription of generic drugs.	1	2	3	4	5
35.	Published literature on generic drugs will develop doctor's confidence for its prescription.	1	2	3	4	5
36.	Prescription of generic drugs should be made mandatory.	1	2	3	4	5

Thank you so much for taking your precious time to share your views.
We truly value the information provided by you that will contribute to our analysis.

Appendix B
Survey Data

		Demographics							Statements																																			
#	Response Date	Gender	Age	Healthcare Center	Employment	Years of medical practice	Qualification	Speciality	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1	30-Jan-20	1	5	1	1	39	1	7	5	5	2	5	1	5	5	5	5	5	5	1	5	5	1	3	5	1	5	5	1	5	5	5	1	5	1	5	1	1	5	1	5	5	5	1
2	30-Jan-20	1	5	2	1	40	3	14	3	3	5	3	4	4	3	5	3	5	5	2	5	5	1	2	5	3	5	3	1	5	4	1	2	5	1	5	1	4	5	2	5	5	5	1
3	30-Jan-20	1	2	2	1	5	4	14	4	3	4	4	3	5	1	2	3	5	3	5	3	5	4	4	4	4	2	3	1	3	1	1	3	5	1	1	1	1	5	3	4	4	4	3
4	31-Jan-20	1	5	2	1	30	2	16	4	2	2	3	3	3	2	2	3	4	4	4	2	5	5	3	4	4	3	3	2	3	5	3	3	3	4	4	1	1	4	3	4	4	4	2
5	31-Jan-20	1	4	1	1	28	5	16	5	5	5	5	5	5	5	5	3	5	5	1	1	3	4	3	5	1	5	5	1	5	5	4	1	3	3	1	1	1	4	1	5	5	5	3
6	1-Feb-20	1	5	1	1	45	1	7	4	4	4	2	2	4	2	2	3	2	2	4	2	5	5		4	2	4	4	2	5	1	2	3	4	2	4	2	2	4	2	4	5	5	5
7	7-Feb-20	1	4	3	3	22	2	19	4	2	4	4	1	5	2	2	2	5	4	4	2	4	2	5	4	5	2	2	2	2	5	3	5	5	4	3	2		4	3	5	5	5	1
8	7-Feb-20	1	1	2	2	5	1	7	4	3	3	2	2	4	4	4	4	1	3	4	1	4	4	4	4	3	4	4	2	1	5	4	4	4	2	4	1	1	4	4	2	4	4	1
9	7-Feb-20	1	5	1	1	49	5	16	2	2	3	3	4	4	1	1	1	2	4	4	4	4	2	4	3	4	1	1	1	4	4	2	4	4	2	5	4	1	5	4	4	4	4	2
10	14-Feb-20	1	4	2	1	22	6	4	3	2	1	1	2	4	1	1	3	3	3	5	3	3	2	2	3	2	2	3	2	5	2	1	5	5	1	5	1	1	4	3	3	4	4	1
11	14-Feb-20	2	5	1	1	35	2	9	4	4	4	4	1	4	4	1	2	4	4	4	4	4	4	4	4	4	1	3	1	4	1	1	1	4	4	4	1	4	4	4	4	4	4	1
12	15-Feb-20	2	5	2	1	35	1	9	4	3	4	3	4	4	2	3	3	4	4	4	4	4	4	2	4	2	3	3	2	4	4	1	4	4	2	4	2	4	4	4	4	4	4	2
13	15-Feb-20	1	3	1	1	20	5	16	5	3	4	3	2	4	4	3	4	4	3	4	2	4	4	3	4	2	4	4	1	4	4	3	4	5	2	4	1	1	4	4	3	4	4	3
14	15-Feb-20	1	5	2	1	35	3	14	5	5	5	5	4	5	4	4	4	5	4	3	3	4	4	2	5	4	4	4	4	4	5	2	4	4	5	5	1	2	4	4	4	4	5	3
15	15-Feb-20	2	4	3	1	27	3	20	5	5	5	5	5	5	5	5	5	5	3	5	1	5	1	5	5	5	5	5	3	3	1	5	5	5	1	1	1	1	5	1	3	5	5	1
16	18-Feb-20	2	5	1	1	34	10	9	3	2	3	4	4	4	2	1	2	4	5	3	2	3	1	3	4	4	1	3	2	4	5	3	4	4	2	4	2	2	4	3	4	2	4	1
17	18-Feb-20	1	5	1	1	47	2	21	3	2	3	5	4	4	2	2	2	4	4	4	2	4	1	3	4	4	2	3	2	4	4	3	4	4	2	4	2	2	4	3	4	3	4	2
18	21-Feb-20	1	3	3	2	20	8	10	5	3	2	5	2	5	3	3	3	4	5	5	4	4	2	4	4	3	2	2	1	4	5	3	4	4	4	4	2	4	4	3	4	4	4	2
19	21-Feb-20	2	4	2	1	30	2	16	3	2	4	1	1	5	3	4	4	4	4	5	4	5	2	2	5	4	4	4	4	5	4	4	4	4	5	5	2	4	4	3	5	5	5	5
20	21-Feb-20	1	5	2	1	35	3	29	2	2	3	5	4	4	2	2	3	5	4	5	4	5	4	4	5	4	2	3	1	4	4	3	4	5	4	4	1	1	4	4	3	4	4	2
21	22-Feb-20	1	3	1	1	17	2	6	4	5	3	4	2	5	3	2	3	4	3	2	1	5	4	3	4	2	2	2	1	2	5	3	4	4	5	5	2	2	5	4	3	5	3	3
22	22-Feb-20	1	5	2	1	40	3	18	1	2	4	4	3	4	2	2	3	4	4	4	4	4	2	2	4	3	2	3	2	5	2	2	4	4	2	4	2	2	4	4	4	4	4	1
23	22-Feb-20	1	2	2	1	11	3	13	4	2	4	4	3	4	2	2	2	5	4	5	4	3	1	5	3	4	2	3	1	5	4	2	3	5	4	4	2	2	4	4	4	3	4	2
24	22-Feb-20	1	5	2	1	40	3	14	4	3	4	2	4	4	3	3	3	2	3	4	2	4	4	3	4	3	3	3	4	2	2	3	3	4	2	4	2	2	4	3	4	4	4	2
25	22-Feb-20	2	5	2	1	40	10	9	4	4	4	2	4	3	4	4	4	2	4	4	2	4	4	3	4	4	3	3	4	4	4	2	3	4	2	4	2	2	4	2	4	4	4	3
26	22-Feb-20	1	3	3	1	18	3	13	3	2	4	3	4	3	2	2	2	3	4	5	3	5	2	2	5	4	2	2	1	3	4	2	4	5	5	4	3	2	5	4	5	4	5	2
27	22-Feb-20	2	3	2	1	15	4	9	4	3	4	2	3	4	4	3	3	3	4	4	2	3	2	3	4	3	3	3	2	2	4	3	4	4	4	4	2	2	4	2	3	3	4	3
28	28-Feb-20	1	5	2	1	44	11	15	4	4	4	4	4	3	3	3	3	4	4	3	4	4	2	4	4	3	3	3	2	3	4	3	4	4	4	4	2	3	4	3	4	4	4	3
29	28-Feb-20	1	5	2	1	45	3	14	5	3	5	5	4	5	3	3	3	5	4	4	5	5	5	5	5	5	3	3	3	5	5	2	4	4	2	4	2	2	4	3	5	4	4	2
30	28-Feb-20	2	2	3	2	6	4	17	3	2	3	4	2	4	2	3	3	5	3	4	2	4	4	4	3	4	3	3	3	3	4	2	2	4	4	5	2	2	4	2	4	5	5	3
31	28-Feb-20	2	5	2	1	35	2	9	4	2	4	3	4	4	4	2	3	4	4	4	4	4	3	4	4	3	3	3	1	5	2	2	5	5	3	4	2	4	4	3	4	4	4	2
32	29-Feb-20	1	2	3	3	10	4	14	4	2	4	2	3	4	4	3	3	4	4	2	2	4	2	4	4	4	2	2	2	4	4	2	4	4	2	4	4	2	5	4	3	4	4	4
33	29-Feb-20	1	3	3	3	16	2	15	2	4	4	1	4	4	5	5	3	3	4	3	2	4	4	4	4	4	3	3	2	2	4	4	2	4	2	2	2	1	4	2	4	4	4	3
34	29-Feb-20	1	3	3	1	15	9	18	3	2	4	3	4	3	3	2	3	4	4	3	4	4	2	3	4	3	3	3	2	4	2	3	4	4	2	2	2	2	4	4	4	4	4	2
35	6-Mar-20	2	2	2	3	13	3	9	5	4	5	2	5	5	5	4	3	3	4	2	2	5	5	3	5	1	4	3	3	5	5	4	4	5	1	4	1	2	4	3	4	5	5	5
36	6-Mar-20	1	5	2	1	36	4	17	4	2	4	3	4	3	2	2	3	2	4	4	2	4	4	5	4	4	2	3	2	4	4	2	4	5	4	5	2	4	5	4	4	4	4	1
37	6-Mar-20	1	5	3	1	40	9	18	2	2	1	4	4	4	3	3	2	4	3	4	2	2	2	3	3	4	2	2	3	4	4	2	4	4	2	4	2	2	4	4	4	2	2	1
38	6-Mar-20	2	2	2	3	4	4	4	4	2	2	4	5	4	2	2	3	4	4	4	2	3	3	4	4	3	2	2	2	4	2	3	4	4	4	4	1	1	4	4	3	3	2	1
39	7-Mar-20	1	5	2	1	30	3	13	1	1	1	1	4	4	1	1	1	4	4	4	1	3	2	4	4	4	2	2	1	5	3	1	4	4	3	4	3	2	3	4	1	3	3	1
40	7-Mar-20	1	3	1	1	20	2	16	4	4	4	5	1	4	4	5	2	4	4	3	5	4	3	5	4	2	4	3	2	3	5	3	4	4	4	5	2	4	4	2	3	3	4	3
41	7-Mar-20	1	3	3	1	20	9	11	4	2	2	2	4	4	2	2	2	4	4	4	4	4	2	2	4	4	2	2	2	4	4	4	4	4	2	4	2	2	4	4	4	4	4	2
42	7-Mar-20	2	4	1	1	20	2	3	2	2	2	3	4	4	4	2	3	4	3	4	3	4	5	3	4	3	2	3	2	4	5	2	4	5	4	5	2	2	4	3	4	5	4	2
43	8-Mar-20	1	5	2	3	38	2	15	4	4	5	4	4	4	5	5	4	3	4	1	2	5	4	3	5	3	5	5	1	1	4	4	4	4	4	2	2	1	4	1	2	5	5	3
44	14-Mar-20	1	3	2	1	15	2	13	3	1	1	4	3	4	3	2	2	3	5	3	2	3	5	1	3	3	2	3	1	1	5	3	4	4	3	5	3	2	3	4	3	4	4	3
45	14-Mar-20	1	5	2	1	40	5	16	4	4	4	2	2	3	4	4	4	2	2	2	2	2	2	4	4	2	4	4	2	2	4	4	2	4	4	4	2	2	4	2	4	4	4	2
46	14-Mar-20	1	5	1	1	49	1	7	4	4	2	3	4	4	4	4	3	3	2	4	3	3	3	3	4	3	4	3	2	5	3	2	4	4	2	4	3	2	4	4	4	3	4	3
47	14-Mar-20	1	4	1	1	27	1	7	4	4	4	4	2	4	2	2	3	3	4	2	2	4	4	4	4	2	4	3	2	3	4	2	4	4	2	4	2	2	5	1	4	4	2	2
48	14-Mar-20	1	3	1	1	15	8	11	4	4	2	2	3	3	3	3	3	4	4	4	3	3	3	3	4	3	3	3	3	4	4	3	3	4	4	3	4	2	4	4	4	4	4	3
49	4-Jun-20	2	2	2	1	15	3	9	4	4	4	3	4	4	4	4	3	4	4	3	4	4	4	3	4	3	4	3	1	4	4	3	4	4	4	4	3	3	3	4	4	4	4	3
50	5-Jun-20	1	5	1	1	50	2	6	4	4	2	4	2	4	4	2	2	4	4	4	2	4	4	4	4	4	2	2	2	4	4	4	4	4	1	4	2	2	4	4	4	4	4	2
51	5-Jun-20	1	5	1	1	44	1	7	4	2	4	3	4	4	4	2	3	2	4	4	2	4	2	3	4	2	4	3	2	4	4	2	4	4	2	4	4	2	4	4	4	4	4	2
52	5-Jun-20	1	3	3	3	15	2	6	4	2	2	2	4	3	3	4	2	4	4	4	4	4	4	5	4	3	4	2	4	4	4	4	4	4	4	5	4	2	4	4	4	4	4	2
53	6-Jun-20	1	5	1	1	35	5	16	4	4	4	2	4	2	4	2	3	2	4	2	2	4	2	2	4	2	2	3	2	4	4	2	4	4	2	2	2	2	4	2	4	4	4	2
54	6-Jun-20	1	5	1	1	36	1	7	4	4	4	2	4	4	4	4	4	3	4	2	4	4	4	4	4	2	4	4	1	2	4	4	2	4	4	4	4	4	4	2	2	4	4	4
55	6-Jun-20	1	5	2	1	40	2	1	4	4	4	2	4	4	4	4	4	2	4	4	4	4	2	4	4	2	4	3	4	2	2	4	4	4	4	4	4	4	4	4	4	4	4	2
56	6-Jun-20	1	3	2	1	17	2	16	5	4	3	2	2	4	4	4	4	2	4	4	2	2	4	4	2	2	5	4	2	4	4	4	4	5	2	4	2	4	4	4	2	2		4
57	8-Jun-20	1	5	1	1	28	1	7	4	4	4	2	4	4	4	4	3	4	4	3	2	4	4	3	4	3	4	3	2	4	4	4	4	4	2	4	2	2	4	2	4	4	4	2
58	8-Jun-20	1	4	1	1	27	2	16	4	3	4	2	3	4	2	2	3	4	4	4	2	4	2	4	3	4	3	3	2	4	4	3	4	4	2	4	2	2	4	3	4	4	4	2
59	8-Jun-20	1	2	2	1	5	2	15	4	4	3	1	4	4	4	4	4	2	4	4	4	3	5	4	3	4	4	4	2	2	4	3	4	4	2	3	2	4	4	3	3	4	4	3

#	Response Date	Demographics							Statements																																				
		Gender	Age	Healthcare Center	Employ ment	Years of medical practice	Qualific ation	Speciality	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
60	8-Jun-20	2	4	3	3	30	3	9	4	2	4	4	4	3	4	4	3	2	4	4	2	4	4	2	4	2	4	3	2	4	2	4	4	4	2	4	2	2	4	2	4	4	4	2
61	8-Jun-20	1	4	3	3	28	3	14	4	4	3	2	4	4	4	3	3	2	3	3	4	4	3	4	4	3	3	3	3	3	4	3	2	4	4	4	3	2	4	2	3	4	4	3
62	9-Jun-20	2	2	3	3	8	4	1	4	2	4	4	4	4	4	2	3	2	4	2	4	4	2	2	4	2	4	3	2	2	4	3	4	4	2	4	2	2	4	2	2	4	4	3
63	10-Jun-20	1	5	2	3	35	3	14	4	4	4	4	4	4	2	2	3	4	4	2	4	4	4	4	4	4	4	3	2	4	4	2	4	4	2	4	4	2	4	2	4	4	4	2
64	12-Jun-20	1	5	3	2	35	1	7	4	4	4	4	4	4	4	4	3	4	4	4	4	4	2	4	4	4	4	3	2	4	4	3	4	4	4	4	4	2	4	3	4	4	4	2
65	12-Jun-20	1	3	2	1	18	2	1	4	2	4	2	4	4	3	3	3	5	5	5	5	5	1	5	5	3	3	4	1	5	1	3	4	5	2	4	2	3	4	4	5	5	5	2
66	12-Jun-20	1	3	2	1	20	3	13	2	3	2	4	4	4	3	2	1	3	4	4	4	4	2	2	4	4	2	2	2	4	4	3	4	4	4	3	2	2	4	4	4	4	4	2
67	12-Jun-20	1	4	2	2	26	2	6	4	4	4	3	2	4	4	4	4	2	3	2	2	2	2	4	4	3	4	4	2	2	4	5	2	4	3	4	3	2	4	2	4	2	4	3
68	13-Jun-20	2	3	1	1	19	5	16	4	2	4	2	4	4	2	2	2	4	4	2	2	2	4	4	4	4	2	2	1	4	4	2	4	4	4	2	2	2	4	3	4	2	2	2
69	13-Jun-20	1	2	2	2	15	6	4	4	2	4	4	1	4	2	2	2	5	4	5	5	5	4	5	4	4	2	2	4	4	5	3	5	5	5	5	1	4	5	4	4	5	5	3
70	13-Jun-20	1	2	1	1	10	2	15	4	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	3	4	4	2	2	4	4	2	4	4	4	2	4	4	2	4	4	4	2
71	13-Jun-20	2	4	2	3	30	2	9	3	2	2	4	5	4	2	2	3	4	4	4	4	2	2	4	2	3	2	3	3	2	3	2	5	4	2	4	2	4	4	4	4	4	4	2
72	14-Jun-20	1	5	3	2	47	3	13	5	4	4	3	2	4	4	4	4	2	3	3	1	4	2	2	4	2	4	4	2	2	2	4	2	4	2	2	2	2	4	2	4	4	4	4
73	15-Jun-20	1	2	3	3	4	3	4	4	4	2	4	5	4	2	2	2	4	4	4	3	4	3	4	4	3	2	2	3	4	4	3	5	5	4	5	2	2	4	3	4	4	4	2
74	15-Jun-20	2	4	2	2	29	10	9	4	3	3	2	2	4	3	4	3	4	4	2	4	4	4	4	4	2	4	4	2	3	4	2	2	4	3	4	2	2	4	2	4	4	4	2
75	15-Jun-20	1	5	2	2	39	13	13	5	4	4	4	2	4	4	4	4	2	4	2	4	4	4	4	4	2	4	4	4	4	2	4	2	4	2	2	2	2	4	2	4	4	4	4
76	15-Jun-20	1	5	2	3	35	3	8	4	4	4	2	2	4	4	4	4	2	4	2	2	4	2	4	4	2	4	4	2	4	4	4	4	4	2	4	2	4	4	2	4	4	4	4
77	15-Jun-20	2	2	2	1	10	2	9	4	2	4	2	2	4	2	2	2	2	4	4	2	4	4	2	4	4	4	3	2	4	4	4	4	4	2	4	2	2	4	2	4	4	4	2
78	16-Jun-20	2	5	3	2	30	10	9	4	4	4	4	2	4	4	2	4	4	4	2	4	4	4	4	4	4	4	4	4	4	4	3	4	4	4	4	2	4	4	2	2	4	4	2
79	16-Jun-20	1	3	3	3	24	3	29	5	3	3	3	4	5	2	2	3	3	4	4	3	5	5	2	4	4	3	3	1	4	5	3	4	5	2	5	3	2	4	3	5	5	5	5
80	16-Jun-20	1	3	1	1	14	2	16	4	3	2	4	4	4	2	2	3	4	2	4	2	3	3	3	4	3	2	3	2	4	2	3	4	4	2	4	2	2	4	4	4	4	4	2
81	16-Jun-20	1	3	3	2	25	4	12	4	2	3	4	4	4	2	2	3	4	4	4	2	4	4	4	4	3	3	3	2	2	4	4	4	2	4	4	2	4	4	4	4	4	4	3
82	16-Jun-20	1	4	2	1	30	3	14	4	2	2	4	4	4	4	3	3	4	4	2	4	5	1	4	5	3	2	3	2	4	2	2	4	4	2	4	2	4	4	3	2	5	5	2
83	16-Jun-20	1	2	2	1	8	6	4	4	4	4	4	2	4	3	2	3	2	3	2	2	2	2	4	4	2	4	4	2	2	2	3	4	4	2	4	2	2	4		2	4	4	2
84	17-Jun-20	1	3	1	1	10	2	16	4	2	4	4	4	4	4	4	4	4	4	2	2	4	4	4	4	3	4	4	1	2	5	2	4	4	4	2	2	2	4	4	2	5	4	2
85	17-Jun-20	2	5	3	2	31	3	9	2	2	2	2	2	4	2	2	3	4	4	4	4	2	2	2	4	3	3	3	2	3	4	4	4	4	2	4	2	2	2	4	2	2	2	2
86	19-Jun-20	1	5	3	2	37	11	15	4	4	4	2	4	3	4	4	4	4	4	2	4	4	4	4	4	2	4	4	2	2	4	4	2	2	2	4	2	4	4	2	2	4	4	4
87	19-Jun-20	1	2	3	2	14	2	22	5	4	4	4	4	5	5	2	3	4	4	2	4	5	5	4	5	3	2	3	2	2	5	3	4	3	2	5	3	2	5	4	2	4	4	4
88	19-Jun-20	1	5	1	1	34	2	6	4	2	2	2	4	4	2	2	2	4	3	4	2	2	2	4	4	3	2	2	2	4	2	2	4	4	4	5	2	2	4	4	4	2	4	2
89	19-Jun-20	2	3	2	1	17	11	15	3	1	5	4	2	4	5	1	2	3	5	5	5	3	2	4	4	2	4	4	2	4	1	4	5	5	5	5	3	1	5	5	4	4	4	1
90	19-Jun-20	1	4	3	2	30	2	17	4	2	4	2	4	4	3	2	4	5	4	2	4	2	1	5	4	4	2	2	1	2	4	5	4	5	4	1	1	2	5	4	4	4	4	2
91	20-Jun-20	2	2	2	1	5	2	15	5	5	4	4	4	4	3	3	3	4	4	4	5	4	4	3	4	3	4	3	2	3	4	3	3	4	3	3	3	3	4	3	2	4	4	2
92	20-Jun-20	1	3	3	3	25	4	1	4	2	2	2	4	4	2	2	2	2	4	4	2	4	2	4	4	4	2	2	2	2	4	2	5	2	2	4	2	2	2	4	4	4	4	2
93	20-Jun-20	1	4	3	3	31	9	23	5	2	4	4	4	4	2	2	2	2	3	2	2	4	4	2	4	2	2	2	2	4	2	2	4	4	2	4	2	2	4	4	4	4	4	2
94	20-Jun-20	1	3	3	3	13	2	13	4	2	2	4	4	4	2	2	2	4	3	4	4	4	4	4	4	4	2	2	1	2	2	2	4	5	5	4	2	4	4	4	4	4	5	2
95	20-Jun-20	1	4	3	3	30	3	8	4	4	4	4	2	4	3	4	4	5	4	4	4	5	4	4	4	3	4	4	4	5	4	3	4	5	2	4	4	4	4	4	4	4	5	2
96	22-Jun-20	2	2	2	3	10	10	9	3	4	4	3	4	4	3	3	3	3	4	3	3	4	3	4	4	3	3	3	3	3	4	3	4	4	4	4	3	3	4	3	4	4	4	3
97	22-Jun-20	1	5	2	1	48	14	14	5	4	5	2	1	4	5	5	5	2	4	2	5	4	1	5	5	2	4	4	2	2	4	5	2	5	2	2	2	2	4	2	2	5	4	4
98	22-Jun-20	2	5	2	1	40	3	9	4	2	4	4	2	4	2	2	2	4	4	4	4	4	1	4	2	3	2	2	1	5	4	2	4	4	2	4	1	1	4	2	4	4	4	1
99	22-Jun-20	2	2	2	3	8	2	15	4	5	4	3	4	4	5	5	4	4	4	4	3	4	1	5	4	2	4	4	3	4	5	3	3	3	3	3	3	3	3	3	3	3	4	2
100	22-Jun-20	1	1	3	3	3	2	17	2	2	2	3	4	4	3	2	2	4	3	4	2	3	4	3	3	4	2	2	2	3	2	4	2	4	4	4	2	2	4	4	4	4	4	2
101	23-Jun-20	1	3	2	4	15	4	6	2	2	4	4	4	4	2	2	1	5	2	5	4	5	5	4	4	4	4	2	4	4	4	2	5	4	2	5	5	2	5	5	4	4	5	2
102	23-Jun-20	1	5	2	1	54	2	16	4	4	2	2	4	4	4	4	4	4	4	4	4	4	4	4	4	2	4	4	4	4	4	2	4	4	4	5	2	2	4	2	4	4	5	4
103	23-Jun-20	2	2	2	3	5	10	9	4	4	4	4	2	4	4	4	4	2	2	2	2	2	4	2	2	2	4	4	1	4	4	4	4	4	2	2	2	2	4	2	4	4	4	2
104	23-Jun-20	1	5	2	1	45	2	15	3	4	2	3	4	3	4	4	3	4	4	3	4	4	3	4	4	4	4	3	2	4	4	2	3	4	2	2	2	2	4	2	3	4	4	3
105	23-Jun-20	1	2	2	1	4	3	8	4	2	4	4	4	5	3	2	4	4	4	4	4	5	4	4	5	2	2	3	2	3	5	4	2	4	2	4	2	2	4	4	4	5	5	2
106	24-Jun-20	1	3	2	1	18	3	4	2	2	4	3	2	4	2	2	3	4	4	4	2	4	4	3	2	4	2	2	4	5	2	2	4	4	2	4	2	2	4	4	4	4	4	2
107	24-Jun-20	1	4	2	1	34	3	14	4	2	4	2	2	4	2	2	2	4	2	4	2	1	4	4	4	4	1	2	2	4	4	2	2	4	2	4	2	1	4	4	4	4	4	1
108	26-Jun-20	1	2	3	3	15	2	24	5	5	5	5	1	5	4	4	5	4	2	5	2	5	5	5	5	2	4	4	1	4	5	5	5	5	4	5	1	4	5	3	5	4	5	2
109	26-Jun-20	1	3	2	3	25	3	4	4	3	3	3	5	4	3	2	3	5	4	1	1	4	1	1	4	2	3	3	1	2	2	3	3	5	1	4	2	1	4	3	4	3	3	1
110	26-Jun-20	1	5	1	1	45	1	7	4	4	4	3	2	4	4	4	4	2	4	2	4	4	2	2	4	2	4	4	4	2	4	4	2	4	2	4	2	2	4	2	4	4	4	4
111	26-Jun-20	1	5	3	2	40	14	1	4	4	4	2	4	4	4	4	4	2	4	2	4	4	2	4	4	3	4	4	4	4	4	4	3	4	4	4	2	4	4	2	4	4	4	4
112	26-Jun-20	1	3	3	2	11	2	15	2	4	4	2	1	4	4	4	5	2	2	2	2	5	4	4	5	4	5	5	4	4	4	4	4	4	1	5	2	2	4	4	2	5	5	4
113	27-Jun-20	2	3	2	1	15	2	15	4	2	4	2	2	4	2	2	2	2	4	2	4	5	3	5	5	4	4	2	4	4	5	4	4	4	2	2	2	1	5	4	4	5	5	4
114	27-Jun-20	1	3	3	3	20	3	8	4	2	4	4	4	4	2	2	2	5	4	4	4	4	1	5	4	3	2	2	1	4	4	4	4	4	2	4	2	2	4	4	4	4	4	2
115	27-Jun-20	1	3	3	3	8	2	25	4	4	4	4	5	4	2	4	4	3	3	4	2	4	4	4	5	2	4	4	1	4	5	4	4	4	2	5	3	3	4	2	4	4	5	3
116	27-Jun-20	1	2	1	1	3	1	7	3	4	3	4	4	5	2	3	4	4	4	4	3	5	5	5	5	3	3	4	2	2	4	3	3	4	4	4	1	3	5	4	2	5	5	2
117	27-Jun-20	1	3	3	3	14	2	26	4	2	2	4	2	5	2	2	2	4	4	3	1	2	2	4	4	1	2	2	2	4	4	3	4	4	2	3	2	2	4	5	4	3	4	1
118	27-Jun-20	1	4	1	1	20	2	16	4	2	4	4	2	4	4	2	4	4	2	4	2	4	2	4	4	2	2	4	2	2	4	3	2	4	2	2	4	2	4	2	4	4	4	2

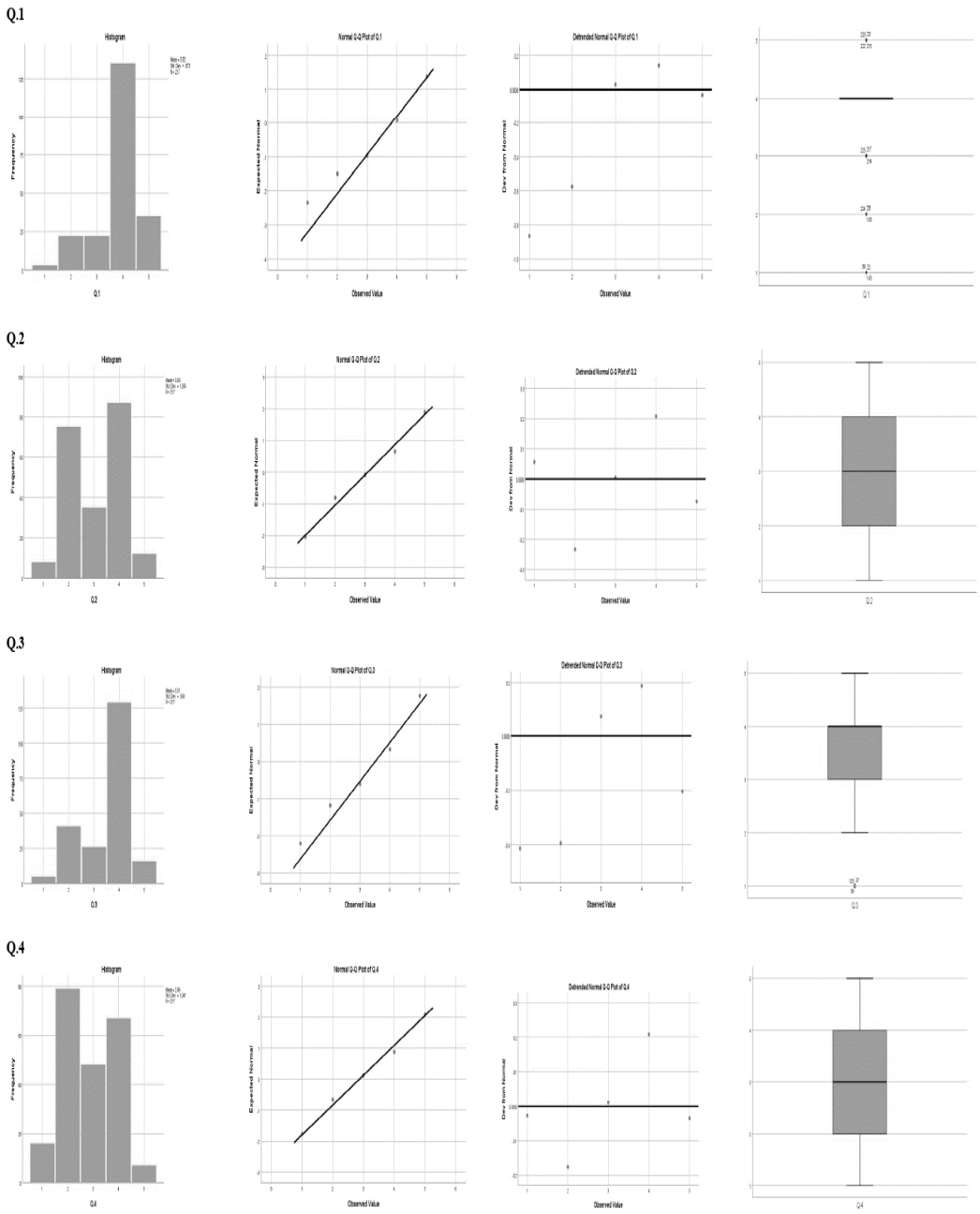
		Demographics							Statements																																				
#	Response Date	Gender	Age	Healthcare Center	Employment	Years of medical practice	Qualification	Speciality	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
119	28-Jun-20	2	5	1	1	40	2	9	3	3	3	3	4	4	3	3	3	4	4	3	3	4	3	3	4	3	3	3	3	3	4	5	4	4	4	4	1	2	4	3	4	4	4	3
120	28-Jun-20	1	3	3	2	17	9	23	4	4	4	4	2	4	3	4	4	4	4	2	2	4	4	4	4	2	4	4	2	2	4	5	2	4	2	4	2	2	2	2	2	4	5	5
121	28-Jul-20	2	3	3	3	21	3	29	4	2	3	3	2	2	2	2	3	4	3	3	4	4	4	3	4	3	2	2	2	4	2	4	4	4	2	4	2	2	2	3	4	4	3	2
122	29-Jun-20	2	2	2	3	12	2	16	4	3	3	3	1	5	3	3	3	4	4	3	1	5	4	1	4	3	3	3	1	4	4	2	4	4	4	4	1	1	4	3	4	4	5	3
123	29-Jun-20	2	2	2	3	8	2	15	4	1	1	3	4	4	2	2	3	3	4	4	2	5	4	4	4	3	3	2	1	5	5	4	4	5	2	4	2	2	4	4	2	5	5	2
124	30-Jun-20	1	3	3	3	21	3	8	5	2	2	5	5	5	1	1	2	2	4	2	2	5	2	2	4	2	2	3	1	5	3	2	5	4	2	5	2	1	2	5	4	3	5	2
125	30-Jun-20	1	5	2	3	30	2	1	4	5	5	4	4	5	4	3	3	4	4	4	4	4	5	5	5	4	3	3	5	4	4	4	4	4	2	4	2	4	4	4	5	5	5	5
126	30-Jun-20	1	2	3	3	12	2	1	2	2	3	3	2	4	2	1	3	4	4	4	4	4	2	4	4	4	1	2	2	3	4	2	4	4	4	5	2	4	4	5	4	4	5	1
127	30-Jun-20	1	3	3	3	20	2	15	4	2	2	2	4	5	2	2	2	4	4	4	4	4	5	5	4	2	2	2	2	3	2	3	3	5	2	4	1	2	4	4	3	4	4	4
128	30-Jun-20	1	4	3	3	8	2	21	5	4	4	4	1	4	4	4	4	4	4	3	4	4	2	4	4	2	4	4	2	2	2	3	3	3	3	4	2	2	4	2	4	4	5	4
129	30-Jun-20	1	3	3	2	9	2	26	3	3	3	3	4	5	3	3	3	2	4	4	4	4	4	4	4	4	4	3	3	4	4	4	4	5	4	5	1	1	4	4	2	4	4	4
130	1-Jul-20	1	5	2	3	30	2	16	4	4	4	2	4	2	4	4	3	5	3	4	4	4	2	3	4	3	4	4	4	5	4	2	4	5	2	5	4	4	4	4	4	4	4	2
131	1-Jul-20	1	1	3	3	1	1	7	4	4	4	2	4	4	3	4	4	3	4	3	4	4	4	4	4	3	5	4	4	2	4	4	4	4	4	4	4	4	4	4	4	4	4	3
132	1-Jul-20	1	5	3	2	43	13	13	4	4	4	4	1	4	4	4	4	4	3	2	4	4	4	2	4	3	4	4	2	2	4	2	2	4	4	5	4	4	4	2	2	4	4	4
133	1-Jul-20	1	4	1	1	26	1	7	4	4	4	4	2	4	4	2	3	4	4	4	2	4	2	4	4	3	3	3	2	2	4	4	4	4	4	4	2	3	4	4	4	4	4	2
134	1-Jul-20	2	5	2	2	34	10	9	4	2	4	2	4	4	4	4	4	5	4	4	3	5	4	4	4	2	4	4	2	4	2	4	4	5	2	4	2	2	4	4	2	4	3	4
135	2-Jul-20	2	4	1	1	30	1	7	4	4	4	3	4	4	4	4	3	4	4	2	2	4	4	4	4	4	4	3	2	2	4	4	4	4	2	2	2	1	4	2	4	4	4	4
136	2-Jul-20	1	4	3	3	29	9	2	4	3	4	3	5	5	3	3	3	2	3	2	4	5	2	4	5	2	3	3	1	3	5	2	4	5	4	4	4	4	4	3	4	5	4	2
137	2-Jul-20	1	5	2	3	40	3	13	2	3	4	2	4	4	3	3	3	4	4	4	2	4	2	4	4	3	3	3	2	4	4	2	4	4	2	4	2	2	4	3	4	4	4	4
138	2-Jul-20	2	5	2	2	38	10	9	4	2	2	3	4	4	3	3	3	2	3	2	4	5	2	2	5	2	4	3	2	5	4	4	3	4	2	4	2	1	4	2	4	4	4	2
139	2-Jul-20	1	3	1	1	10	2	3	5	4	4	2	4	2	4	4	4	2	2	4	4	5	4	5	5	4	4	4	2	2	4	4	4	4	2	5	2	4	4	2	5	5	5	2
140	3-Jul-20	1	4	2	4	23	3	13	4	1	3	5	1	5	3	3	3	2	4	4	1	5	2	4	5	1	3	3	1	4	5	3	5	5	1	5	1	1	4	3	5	4	4	3
141	3-Jul-20	1	3	1	2	13	1	7	4	3	3	2	4	5	3	4	4	2	4	4	4	2	2	4	4	4	4	4	2	4	4	4	2	4	2	4	2	2	4	2	2	4	4	3
142	3-Jul-20	2	5	3	2	40	10	9	4	2	2	2	2	4	3	2	2	4	4	4	4	5	4	5	5	2	2	4	2	2	4	4	4	5	5	4	2	1	4	2	2	4	2	4
143	3-Jul-20	1	3	3	3	10	2	6	1	1	2	4	2	4	4	1	3	2	5	2	2	4	2	2	4	2	2	2	2	2	4	2	5	4	4	4	2	2	4	5	2	4	4	2
144	4-Jul-20	1	2	1	1	12	2	15	4	5	4	2	1	5	4		4	5	3	5	2	5	2	5	4	3	4	4	2	1	4	3	3	4	4	4	2	2	4	2	4	4	4	2
145	4-Jul-20	1	2	2	3	3	3	8	4	1	4	3	1	4	2	1	2	4	3	3	2	4	2	2	4	3	2	3	2	4	4	4	4	5	2	4	2	1	4	4	4	4	4	2
146	4-Jul-20	2	5	2	2	36	5	16	4	3	4	3	4	4	3	4	4	3	4	3	4	4	4	4	4	2	4	4	4	4	4	4	3	4	2	4	4	2	4	3	4	4	4	3
147	4-Jul-20	1	2	1	1	8	2	3	4	3	2	2	4	4	3	3	4	4	4	4	1	5	5		5	3	3	3	1	3	3	3	3	4	2	5	1	1	5	3	2	4	4	3
148	4-Jul-20	1	2	3	3	10	2	1	2	4	4	2	4	4	2	2	4	4	4	4	2	2	4	4	4	4	2	2	2	4	4	4	4	4	4	4	2	2	4	4	4	2	2	2
149	5-Jul-20	1	5	2	3	33	3	13	5	4	4	4	1	4	4	4	4	2	4	2	4	5	4	4	4	2	5	4	2	4	2	2	2	4	2	5	2	2	4	2	2	4	4	2
150	5-Jul-20	1	5	3	3	39	2	6	4	4	4	4	2	4	4	4	4	2	4	2	2	4	2	4	4	2	4	4	4	2	4	4	4	4	2	5	2	2	4	2	2	4	4	2
151	6-Jul-20	1	5	3	3	58	2	15	4	3	4	2	4	3	4	4	4	3	4	2	4	5	5	4	5	2	5	5	5	2	4	3	3	3	3	3	3	3	3	2	4	5	5	5
152	6-Jul-20	1	5	1	1	50	2	7	4	4	4	2	4	4	4	4	4	2	4	2	4	4	4	4	4	2	4	4	4	2	2	4	2	4	4	4	2	4	4	2	4	4	4	2
153	6-Jul-20	1	3	1	3	15	1	3	5	1	5	5	1	5	2	1	1	5	4	5	2	5	4	4	4	3	2	2	2	4	4	4	3	4	2	5	2	1	4	4	4	4	4	2
154	7-Jul-20	1	2	2	3	13	8	11	4	3	2	4	3	4	4	2	1	2	4	4	4	5	2	4	5	4	3	2	2	4	4	3	5	4	4	5	2	3	4	4	2	4	4	2
155	7-Jul-20	1	2	3	3	4	2	21	4	3	4	4	1	5	4	3	3	5	4	4	4	3	4	4	3	4	3	3	3	4	4	3	4	4	4	5	3	3	5	5	3	3	4	2
156	7-Jul-20	2	4	1	1	35	10	9	4	3	4	2	4	4	4	4	3	3	4	3	2	4	3	4	4	2	4	4	2	2	4	4	3	4	2	2	3	2	4	2	2	4	4	4
157	7-Jul-20	1	3	3	3	14	9	11	4	4	2	2	2	4	2	2	2	2	4	2	1	4	2	2	4	3	3	3	2	2	5	4	5	4	2	5	2	1	4	3	4	5	5	2
158	7-Jul-20	2	3	1	1	20	2	3	4	2	4	2	5	4	2	2	3	2	4	3	4	4	4	4	4	2	3	3	1	4	4	2	4	4	4	5	2	4	4	4	2	4	4	1
159	7-Jul-20	1	2	1	1	5	4	15	4	3	4	2	4	4	4	2	3	4	4	4	4	4	4	4	4	2	4	3	2	2	4	3	3	4	3	4	4	5	3	2	3	4	4	5
160	8-Jul-20	1	5	3	3	30	3	13	4	4	4	2	2	4	4	4	4	2	3	2	3	4	4	2	4	2	4	4	3	2	3	4	2	4	2	3	2	2	4	2	3	4	3	3
161	8-Jul-20	1	2	2	3	8	3	29	4	3	4	2	4	4	3	2	3	3	3	3	4	4	5	2	4	3	3	3	2	3	4	4	3	4	2	2	2	2	4	2	4	4	4	3
162	8-Jul-20	1	4	1	1	36	8	5	4	2	2	4	2	4	2	1	2	4	4	4	1	2	1	2	4	2	2	2	2	4	4	2	4	4	1	4	1	1	2	4	4	1	1	1
163	8-Jul-20	1	5	3	2	40	2	16	4	2	4	2	2	4	4	2	2	4	4	3	2	2	2	4	4	3	2	2	2	2	4	4	5	2	2	4	2	2	4	2	4	4	4	4
164	8-Jul-20	2	2	2	3	4	2	15	4	2	2	4	4	2	2	2	2	4	4	4	3	4	2	4	4	2	2	2	2	3	4	3	3	3	3	3	3	3	3	4	4	4	4	2
165	8-Jul-20	1	5	3	3	35	2	1	4	4	4	2	4	4	4	4	3	3	4	2	2	4	2	2	4	2	4	4	2	2	4	4	2	2	1	2	4	2	4	1	2	4	4	4
166	9-Jul-20	1	2	3	3	7	3	8	4	2	4	4	2	4	4	2	2	4	4	4	3	2	2	2	4	3	2	2	2	3	4	4	4	5	3	5	2	2	5	4	4	3	4	1
167	10-Jul-20	2	5	3	2	36	10	9	4	4	4	4	4	4	4	4	4	4	4	2	2	4	2	4	4	2	4	4	1	2	2	4	4	4	4	4	2	4	4	2	4	4	4	4
168	10-Jul-20	1	2	1	1	15	2	16	5	2	4	4	4	3	3	4	4	3	4	5	2	4	4	5	5	3	4	3	4	4	3	4	4	5	5	4	4	1	4	3	4	5	5	4
169	10-Jul-20	1	2	3	3	15	2	1	4	4	4	3	4	5	4	4	3	3	4	2	4	4	5	4	4	3	4	4	1	2	5	4	4	4	3	4	2	4	4	3	4	4	4	2
170	10-Jul-20	2	4	1	1	25	2	6	4	2	2	2	4	4	1	2	3	4	4	5	2	4	4	2	3	4	2	3	1	4	3	2	4	4	2	5	2	2	3	5	4	2	4	2
171	10-Jul-20	1	4	2	1	20	2	27	4	4	4	3	1	4	4	2	3	4	4	3	2	4	2	2	4	2	3	4	3	4	4	2	4	4	2	4	2	1	4	3	2	4	4	2
172	10-Jul-20	2	4	1	1		1	7	4	4	4	5	2	5	5	4	3	3	3	2	3	4	4	2	5	2	5	4	2	4	3	3	3	5	3	4	1	2	4	3		2	4	3
173	10-Jul-20	1	5	1	1		1	7	4	4	4	5	2	5	5	4	3	3	3	2	3	4	4	2	5	2	5	4	2	4	3	3	3	5	3	4	1	2	4	3		2	4	3
174	11-Jul-20	1	5	2	1	25	2	16	4	3	4	4	2	4	3	2	2	4	3	4	2	4	2	3	4	2	4	3	2	2	4	2	4	4	2	4	2	2	4	2	4	4	4	2
175	23-Jul-20	1	5	1	1	40	2	16	2	2	2	4	2	4	2	2	2	2	4	4	2	4	2	2	4	4	4	4	2	4	4	2	4	2	2	4	2	2	4	4	4	4	4	2
176	24-Jul-20	1	2	3	3	15	2	15	4	4	4	2	4	4	4	4	4	4	4	4	4	2	4	4	4	3	4	4	1	2	2	3	4	4	2	4	2	2	4	2	4	4	4	2
177	25-Jul-20	2	3	2	2	30	3	9	2	2	2	3	4	4	3	4	4	3	3	2	2	5	4	4	4	3	4	4	2	3	4	5	4	4	4	5	2	2	4	4		4	4	5

		Demographics							Statements																																				
#	Response Date	Gender	Age	Healthcare Center	Employment	Years of medical practice	Qualification	Speciality	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
178	25-Jul-20	2	3	3	3	20	4	9	4	5	3	2	4	4	4	4	4	2	3	2	4	5	5	4	5	2	4	4	3	3	4	4	4	4	4	2	2	2	4	3	2	4	5	2
179	26-Jul-20	1	5	3	2	35	1	1	4	4	2	2	2	4	4	2	4	2	2	4	4	4	2	4	4	2	4	4	2	4	2	4	5	4	2	2	4	2	2	1	4	4	5	5
180	26-Jul-20	1	5	2	1	30	3	4	4	4	4	2	2	4	4	2	4	2	4	2	2	4	2	2	4	2	4	4	2	4	4	4	2	2	1	4		1	4	2	4	4	4	2
181	26-Jul-20	1	5	1	1	45	1	7	4	4	4	4	4	4	4	4	3	2	3	4	4	2	4	4	4	2	4	3	2	4	4	4	2	4	4	5	2	4	4	2	2	2	4	2
182	27-Jul-20	1	5	3	3	40	5	16	4	4	4	3	2	4	4	4	4	4	3	2	4	2	2	3	4	2	4	4	3	2	4	5	2	4	2	2	2	2	4	2	4	4	4	4
183	27-Jul-20	1	4	2	3	32	2	15	4	5	3	3	1	4	5	2	5	5	4	1	1	5	4	1	5	4	4	4	1	1	5	4	4	4	1	4	1	1	5	3	4	4	5	1
184	28-Jul-20	1	2	2	2	4	1	7	5	4	4	3	2	4	4	4	3	4	4	2	4	4	2	4	4	2	4	2	4	4	2	2	2	4	4	5	4	4	4	3	4	4	4	2
185	28-Jul-20	2	5	1	1	40	1	7	2	3	4	3	4	4	2	2	2	3	4	4	2	3	2	2	3	4	2	2	2	4	4	3	5	4	4	4	2	1	4	4	4	4	4	2
186	28-Jul-20	2	3	2	3	10	2	15	4	4	5	3	4	3	4	3	4	5	4	5	2	4	4	4	4	4	4	4	4	5	5	3	4	4	4	4	3	3	4	4	4	5	5	2
187	28-Jul-20	1	3	3	3	22	2	28	4	4	4	3	2	4	4	4	4	2	2	2	2	4	5	2	5	2	4	4	1	3	4	4	2	4	2	2	2	2	4	2	2	4	4	4
188	28-Jul-20	1	3	3	2	15	3	8	4	4	2	2	2	4	4	4	4	2	4	2	2	5	4	2	4	2	4	4	2	2	4	5	4	4	2	5	2	2	4	2	4	5	5	4
189	29-Jul-20	1	3	3	3	15	3	14	2	2	4	2	4	2	2	2	2	4	4	4	4	4	2	4	4	4	2	2	2	4	2	2	4	4	2	2	2	2	4	4	4	4	4	2
190	29-Jul-20	1	4	1	1	23	5	16	4	2	2	4	4	4	3	2	3	2	4	4	4	4	4	2	4	4	3	3	2	4	4	2	2	4	2	4	2	4	4	2	4	4	4	2
191	29-Jul-20	2	4	2	1	21	3	9	4	4	4	4	4	4	4	3	3	2	4	3	4	4	4	2	4	3	4	3	2	2	4	2	4	4	4	4	2	2	4	3	4	4	4	2
192	29-Jul-20	1	2	3	2	4	3	8	2	2	4	2	2	4	2	2	2	2	4	2	2	2	4	4	4	2	4	4	2	2	4	4	4	4	2	2	4	2	4	2	2	4	2	4
193	31-Jul-20	2	5	2	1	30	10	9	2	4	4	4	2	4	4	4	4	4	4	4	1	4	4	4	4	5	4	5	2	2	5	3	2	4	2	5	2	1	5	2	4	4	4	2
194	1-Aug-20	1	5	3	2	40	1	7	4	4	2	2	2	4	4	4	4	2	3	4	4	4	4	4	4	2	4	4	4	4	4	4	4	4	4	4	2	2	4	2	2	4	4	2
195	1-Aug-20	1	3	1	1	20	2	3	4	2	4	4	4	4	1	2	2	2	3	4	4	4	2	4	3	3	2	2	2	4	2	2	4	4	4	4	3	4	4	4	4	4	4	2
196	8-Aug-20	1	5	3	2	60	1	1	4	4	4	2	2	4	4	4	4	4	4	1	4	5	5	4	5	2	5	5	2	2	4	5	2	4	2	5	2	4	4	2	4	4	5	2
197	8-Aug-20	2	3	3	1	15	9	13	4	2	4	3	2	4	3	2	2	3	4	3	4	4	2	4	4	4	3	3	2	4	5	2	4	5	2	5	1	1	4	3	4	4	4	2
198	12-Aug-20	1	5	1	1	33	2	6	4	3	4	2	4	4	2	2	2	4	2	4	4	4	4	4	4	2	4	2	2	4	4	2	4	4	4	5	4	4	4	4	4	4	4	2
199	19-Jul-20	2	4	3	3	27	3	18	5	4	4	4	2	5	4	4	4	2	4	2	1	4	4	4	4	2	4	4	2	3	4	4	3	4	2	4	3	2	4	2	4	4	4	3
200	19-Jul-20	1	5	1	1	38	1	7	5	4	5	5	3	5	3	4	4	2	5	3	3	5	4	3	5	2	4	4	2	3	3	3	5	4	2	5	1	1	5	2	1	4	4	2
201	20-Jul-20	1	4	2	1	30	2	17	2	2	2	4	2	4	2	2	3	3	4	4	4	4	2	4	4	3	2	3	1	4	2	2	4	4	2	4	1	4	4	4	2	4	4	2
202	20-Jul-20	2	3	3	2	18	9	23	5	5	5	1	1	5	5	5	5	1	5	1	1	5	1	1	5	1	5	4	1	1	5	5	1	1	1	1	1	1	1	1	4	4	4	5
203	21-Jul-20	1	2	3	3	12	4	32	5	4	4	3	1	5	5	4	4	3	4	2	3	4	5	5	5	3	4	4	2	3	5	3	4	5	2	5	3	3	5	2	4	5	5	3
204	23-Jul-20	1	3	2	1	20	2	1	5	2	4	3	4	5	2	2	2	4	4	5	4	4	3	4	4	2	2	2	4	4	5	3	4	4	4	4	3	2	4	2	4	4	4	3
205	23-Jul-20	1	3	3	3	25	9	23	5	4	4	4	3	4	3	4	4	3	3	1	1	4	1	3	4	2	4	4	3	3	4	3	3	4	3	2	3	2	4	3	2	4	4	2
206	24-Jul-20	1	3	3	3	20	8	2	3	3	3	4	4	4	2	2	3	3	4	4	2	4	4	3	4	4	2	3	2	3	3	3	4	4	3	2	2	2	4	4	4	4	3	2
207	24-Jul-20	1	5	3	3	48	9	11	3	4	4	3	2	4	2	2	3	3	4	4	2	4	2	4	4	2	2	3	1	2	4	3	4	4	2	4	3	2	4	3	4	4	5	2
208	25-Jul-20	1	4	3	3	28	3	8	4	2	4	4	2	4	3	2	2	2	4	4	4	4	4	4	4	2	4	3	2	4	4	2	4	4	4	4	4	4	4	4	2	4	4	2
209	25-Jul-20	1	3	3	3	7	8	10	5	4	4	4	4	4	4	4	4	2	4	2	2	4	4	4	4	2	4	4	2	2	4	2	4	4	2	4	2	2	4	2	4	4	4	2
210	25-Jul-20	1	1	2	1	4	2	17	5	4	5	4	5	4	2	2	2	2	5	4	3	5	3	4	4	3	2	2	4	5	5	2	5	5	5	5	1	2	5	4	5	5	5	1
211	25-Jul-20	1	3	3	4	20	3	8	4	4	4	4	4	4	2	2	3	4	4	2	4	5	4	4	5	2	3	4	2	4	4	2	4	4	4	3	4	4	4	4	4	4	4	2
212	27-Jul-20	1	5	1	1	37	2	16	4	2	4	4	4	4	3	3	3	2	4	4	2	4	2	3	4	2	2	4	1	4	4	3	4	4	2	4	2	2	4	2	4	4	4	2
213	27-Jul-20	2	2	3	4	5	2	1	2	4	4	4	4	4	2	3	3	2	4	4	2	4	4	4	4	2	4	4	2	3	4	3	3	3	3	4	2	2	4	4	4	4	4	3
214	27-Jul-20	2	4	3	2	33	2	30	3	4	4	5	1	5	4	2	3	5	4	3	2	4	5	5	5	4	3	3	1	2	3	4	4	4	2	5	1	2	5	3	5	4	4	3
215	27-Jul-20	2	2	3	3	14	2	21	5	4	4	3	1	5	4	4	4	3	4	2	1	5	3	2	4	2	4	4	3	2	5	5	3	3	3	5	1	1	5	1	3	4	5	5
216	29-Jul-20	2	2	3	3	8	3	9	4	3	2	4	4	4	4	3	3	4	4	4	4	4	4	4	4	3	2	3	2	4	4	2	4	5	5	5	2	2	4	4	4	4	4	2
217	30-Jul-20	2	2	3	3	5	3	9	3	2	4	2	4	2	2	3	2	4	4	4	2	4	2	4	3	4	3	2	3	3	2	4	4	4	4	4	4	2	4	4	4	3	4	2
218	31-Jul-20	1	4	2	2	25	2	15	4	4	4	2	2	4	4	4	4	2	4	2	2	4	4	2	4	2	4	4	5	3	5	4	2	4	2	2	2	1	4	2	2	5	5	3
219	31-Jul-20	2	5	3	3	37	3	9	4	4	4	1	3	4	3	4	4	3	4	2	1	4	2	4	5	3	4	4	1	3	4	4	4	5	1	5	4	3	5	2	4	5	5	2
220	1-Aug-20	1	5	2	2	40	13	13	5	4	4	4	1	5	4	5	5	4	2	1	1	5	4	4	5	1	4	5	1	1	5	5	3	5	1	5	2	1	5	2	4	5	5	4
221	1-Aug-20	1	5	1	1	45	1	7	5	4	3	2	3	4	4	4	3	4	4	3	3	4	2	3	2	2	4	3	1	5	2	3	1	5	1	5	4	3	5	2	4	4	4	3
222	6-Aug-20	1	2	3	3	7	2	27	5	2	3	2	1	5	1	1	1	2	5	1	1	4	2	1	4	1	2	1	1	4	3	3	5	5	3	5	1	1	5	3	2	2	4	1
223	12-Aug-20	2	4	1	3	20	2	21	4	3	4	2	4	4	4	2	4	4	4	4	3	4	4	4	5	4	4	4	3	2	5	5	5	5	2	2	2	1	4	2	4	5	5	4
224	12-Aug-20	2	3	3	3	10	2	31	2	2	4	5	4	4	2	2	3	4	3	3	4	4	4	3	2	4	1	2	4	4	4	2	5	5	4	4	3	4	4	4	2	3	3	1
225	12-Aug-20	1	3	1	1	12	2	6	3	3	2	4	1	5	4	3	4	3	4	1	3	4	1	4	4	2	3	4	1	3	5	3	4	4	2	4	1	1	4	3	2	4	4	2
226	23-Aug-20	1	4	2	4	28	3	14	2	2	2	1		4	2	1	1	2	2	4		4	4	4	5	5	2	1	3	4	4	2	5	5	4	4	4	3	4	4	3	4	4	1
227	19-Nov-20	1	3	2	3	15	2	1	4	4	4	2	4	3	4	4	3	4	4	4	4	4	2	4	4	2	4	4	3	2	4	4	4	4	4	5	4	4	4	4	4	4	4	3
228	31-Dec-20	1	2	3	2	9	3	13	3	2	4	3	2	5	2	2	2	4	4	3	2	4	4	4	4	3	2	2	3	3	4	4	4	4	3	3	2	1	3	3	4	4	4	3

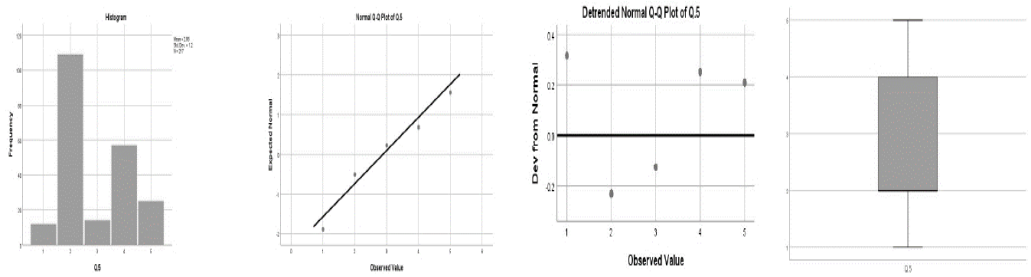
Appendix C

Normality Test Figures

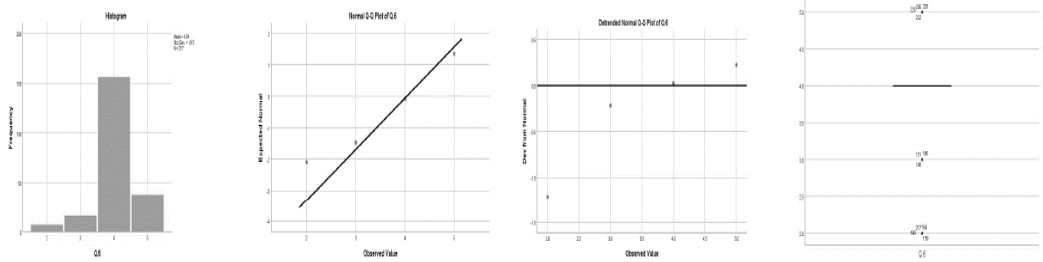
Figure 1 Histograms, Normal Q-Q Plots and Box Plots



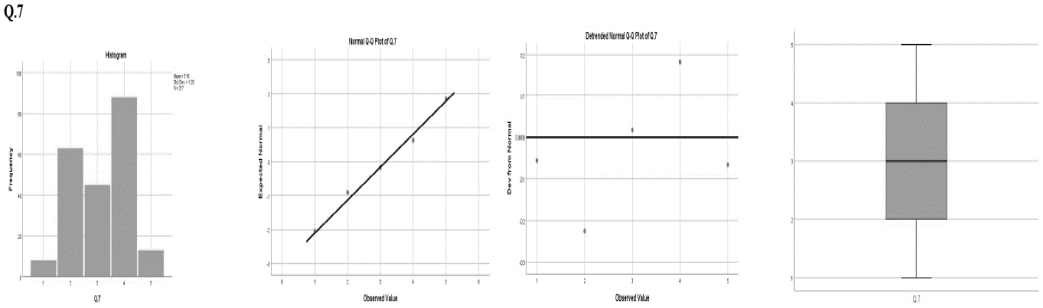
Q.5


Histogram
Frequency
Q.5
Normal Q-Q Plot of Q.5
Expected Normal
Observed Value
Detrended Normal Q-Q Plot of Q.5
Dev from Normal
Observed Value
Q.5

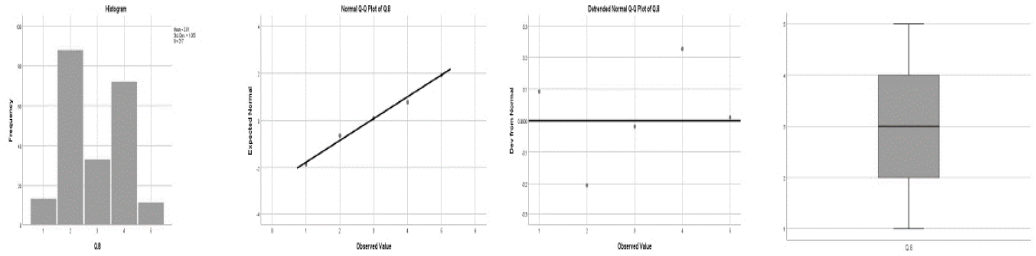
Q.6


Histogram
Frequency
Q.6
Normal Q-Q Plot of Q.6
Expected Normal
Observed Value
Detrended Normal Q-Q Plot of Q.6
Dev from Normal
Observed Value
Q.6

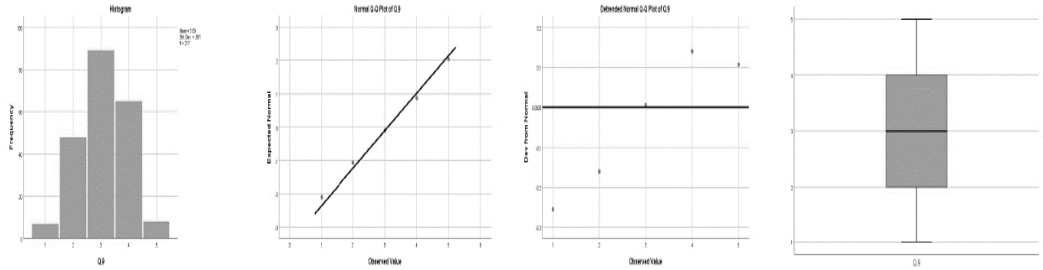
Q.7


Histogram
Frequency
Q.7
Normal Q-Q Plot of Q.7
Expected Normal
Observed Value
Detrended Normal Q-Q Plot of Q.7
Dev from Normal
Observed Value
Q.7

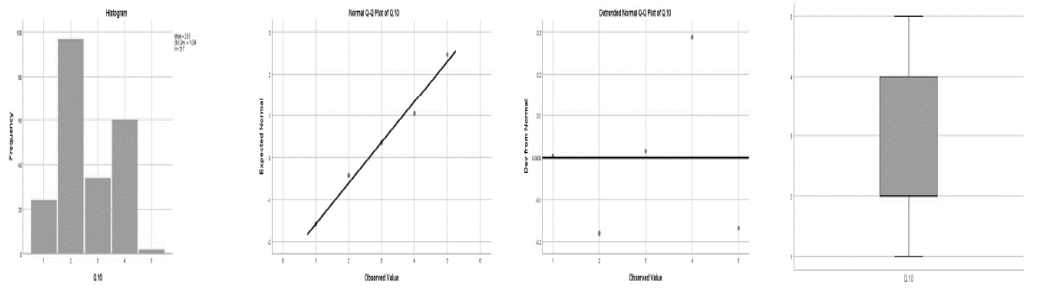
Q.8


Histogram
Frequency
Q.8
Normal Q-Q Plot of Q.8
Expected Normal
Observed Value
Detrended Normal Q-Q Plot of Q.8
Dev from Normal
Observed Value
Q.8

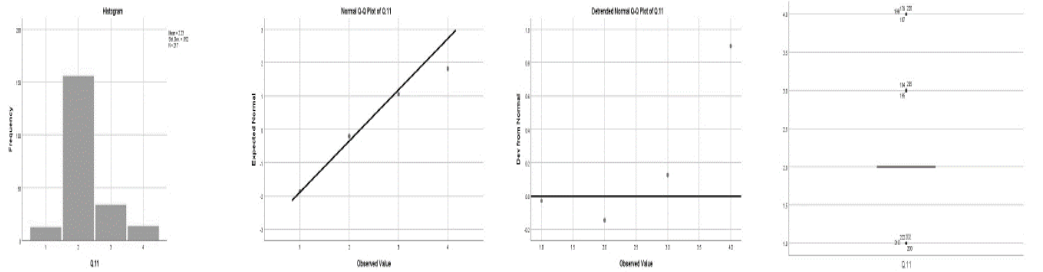
Q.9



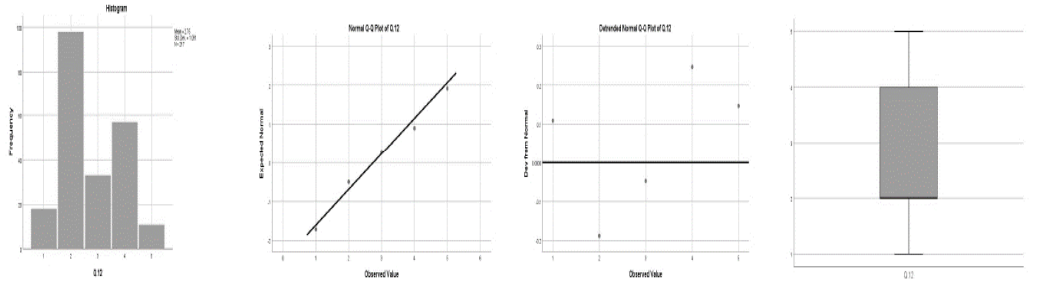
Q.10



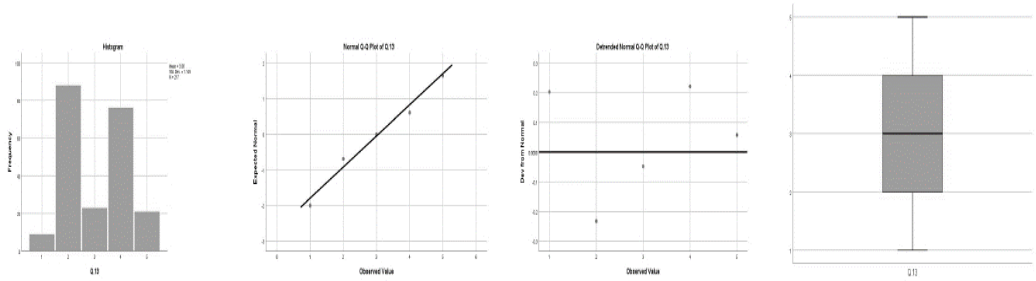
Q.11



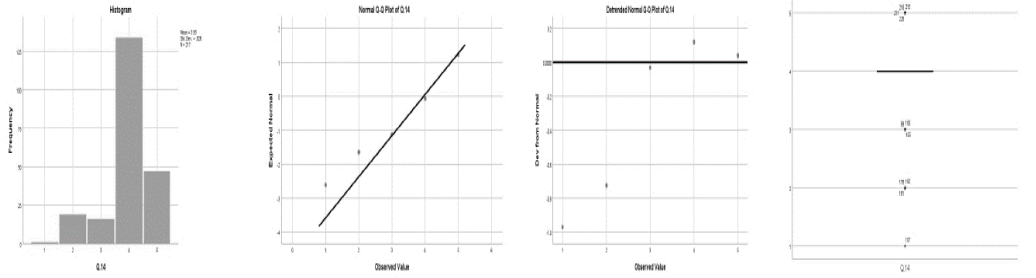
Q.12



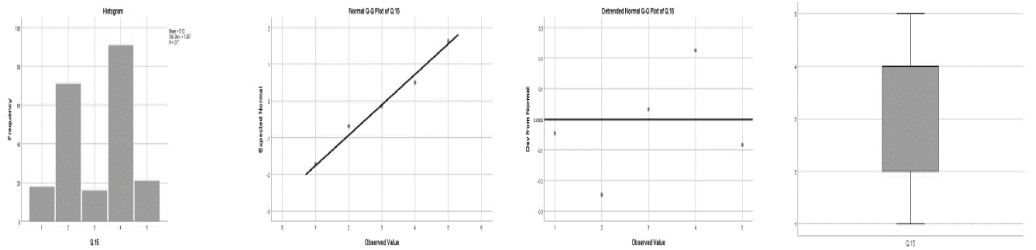
Q.13



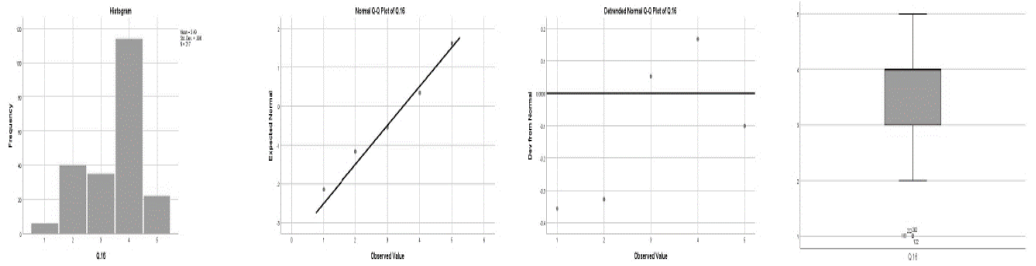
Q.14



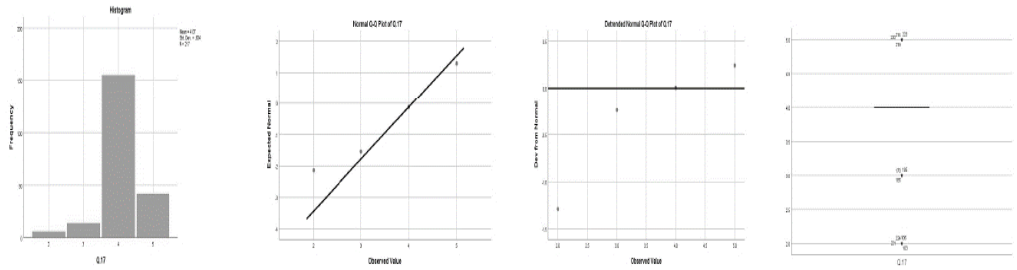
Q.15



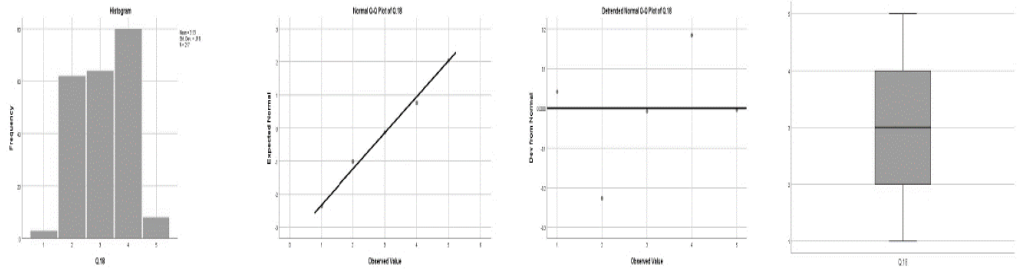
Q.16



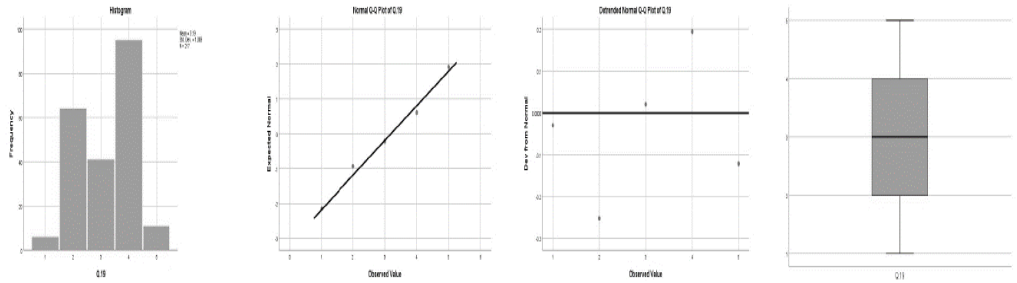
Q.17



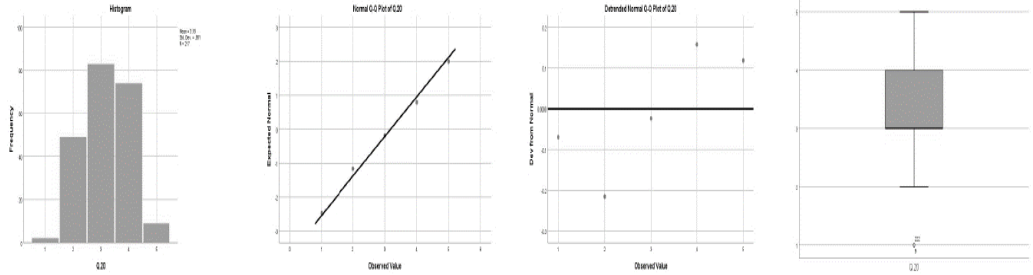
Q.18



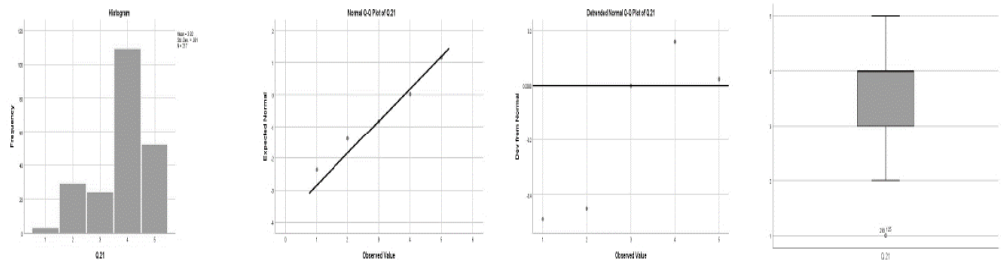
Q.19



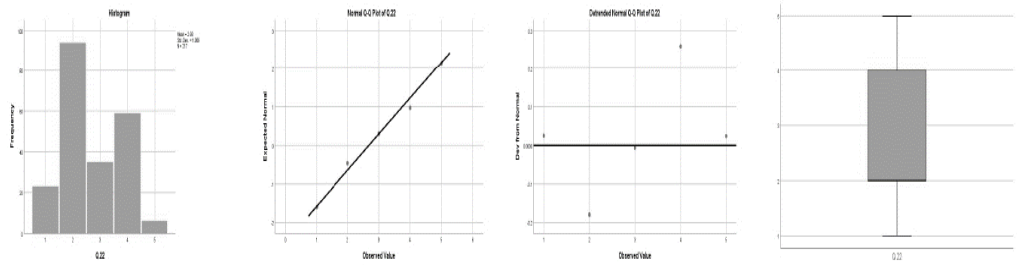
Q.20



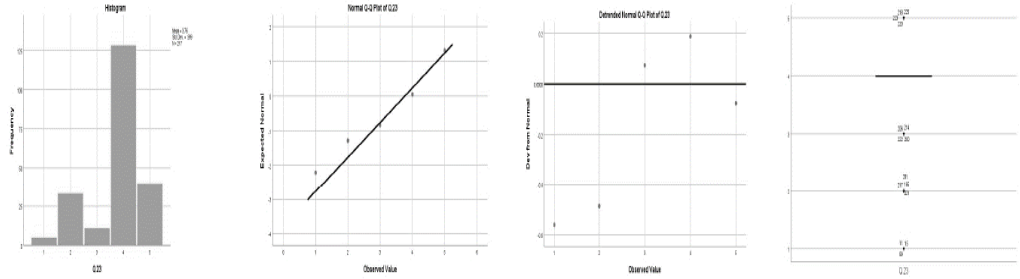
Q.21



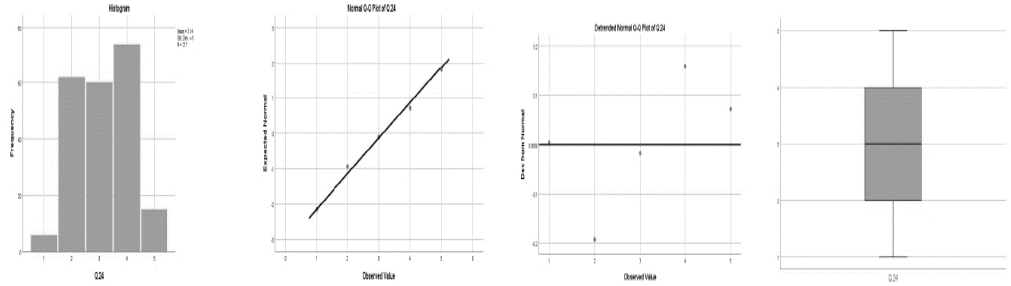
Q.22



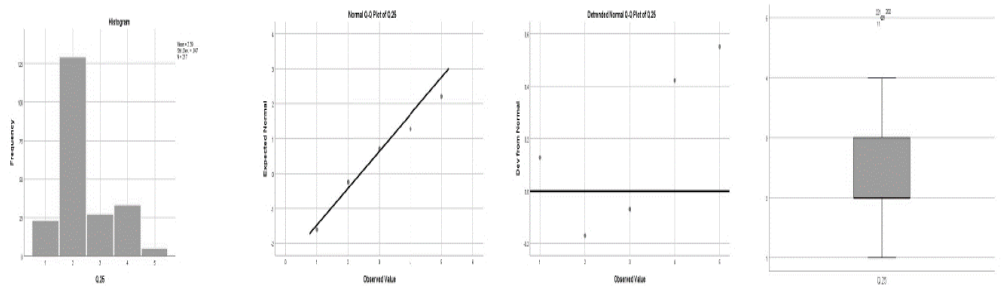
Q.23



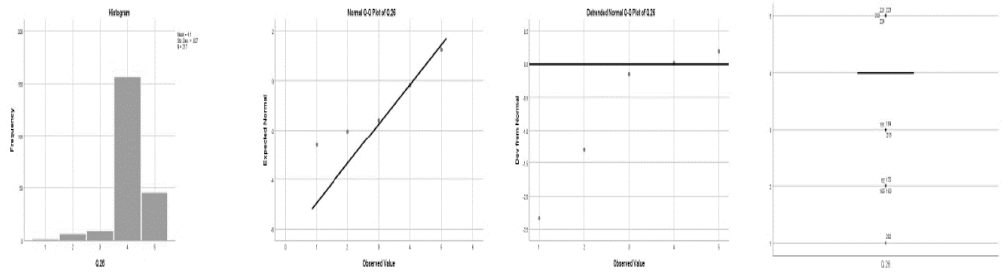
Q.24



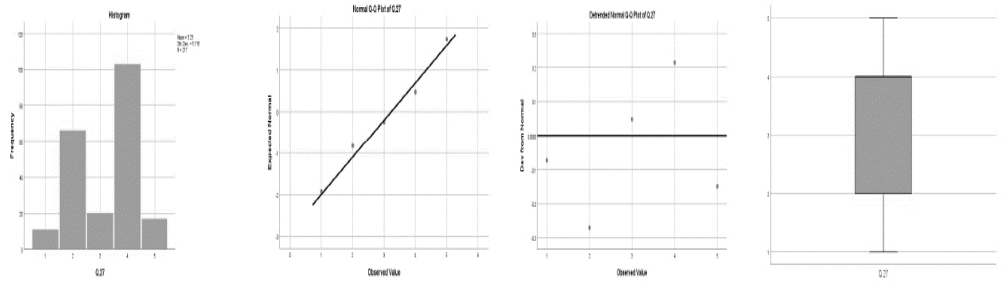
Q.25



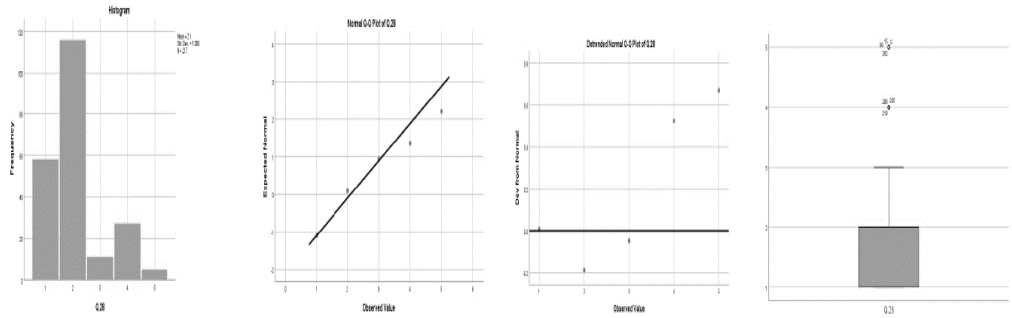
Q.26



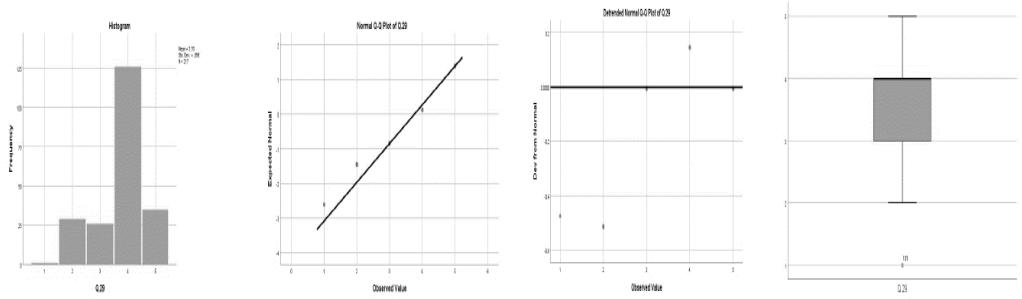
Q.27



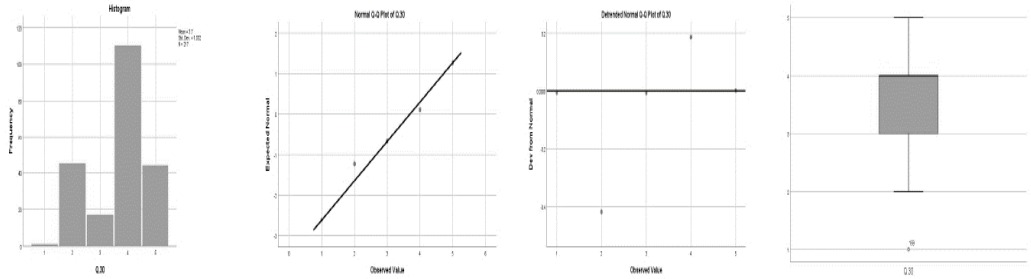
Q.28



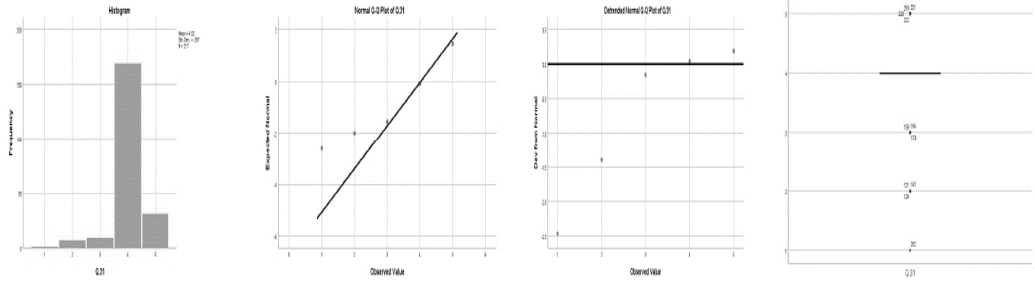
Q.29



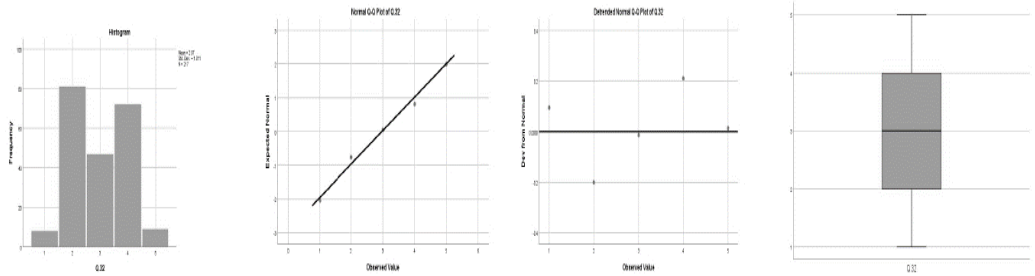
Q.30



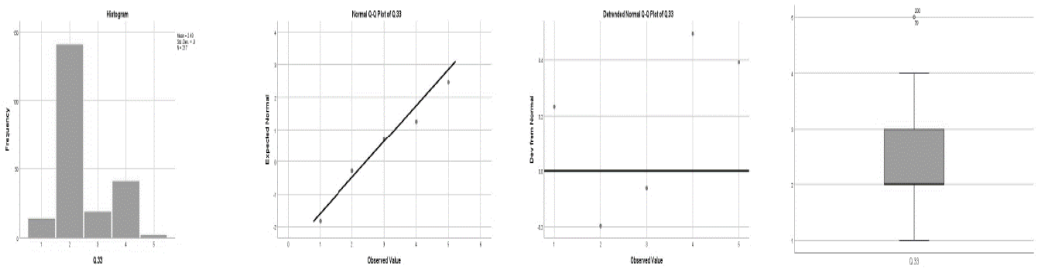
Q.31



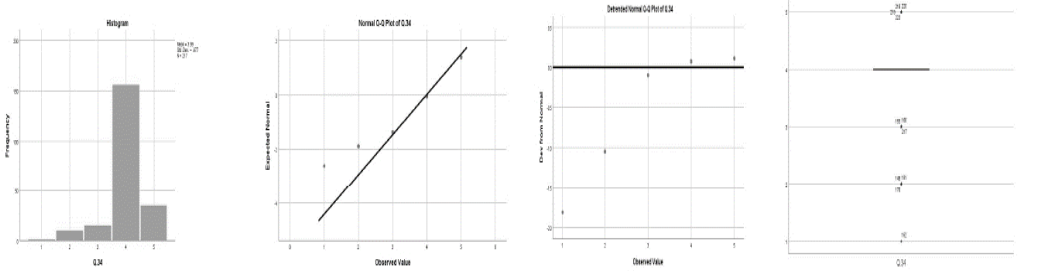
Q.32



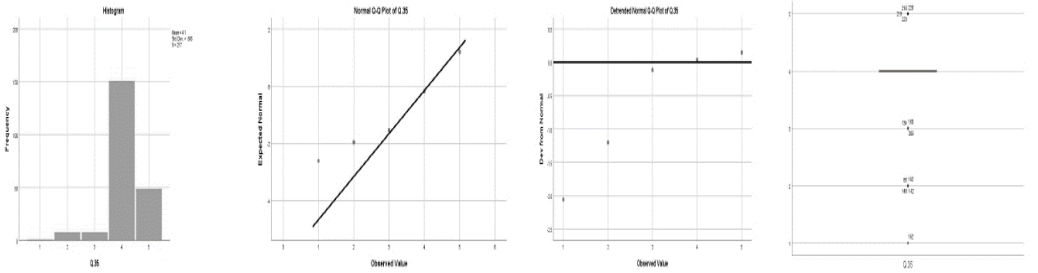
Q.33


Histogram
Frequency
Q.33
Normal Q-Q Plot of Q.33
Expected Normal
Observed Value
Detrended Normal Q-Q Plot of Q.33
Dev from Normal
Observed Value
Q.33

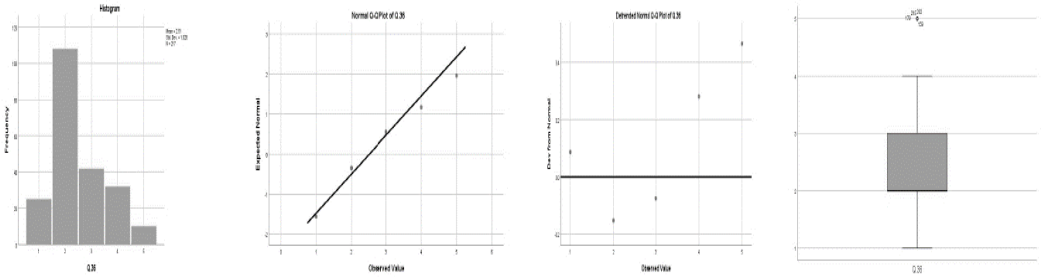
Q.34


Histogram
Frequency
Q.34
Normal Q-Q Plot of Q.34
Expected Normal
Observed Value
Detrended Normal Q-Q Plot of Q.34
Dev from Normal
Observed Value
Q.34

Q.35


Histogram
Frequency
Q.35
Normal Q-Q Plot of Q.35
Expected Normal
Observed Value
Detrended Normal Q-Q Plot of Q.35
Dev from Normal
Observed Value
Q.35

Q.36


Histogram
Frequency
Q.36
Normal Q-Q Plot of Q.36
Expected Normal
Observed Value
Detrended Normal Q-Q Plot of Q.36
Dev from Normal
Observed Value
Q.36

Influence of Medical Practitioners' Practice on the Prescription Behavior for Generic Medicines

Sunil Madan
Ph.D. Research Scholar
Himalayan School of Management Studies
Swami Rama Himalayan University
Jolly Grant, Dehradun 248016, India
sunil.madan@usa.net
Mobile: + 91 9411342100

Dr Som Aditya Juyal
Associate Professor
Himalayan School of Management Studies
Swami Rama Himalayan University
Jolly Grant, Dehradun 248016, India
somadityajuyal@srhu.edu.in
Mobile: + 91 9997490109

Abstract

Purpose: The study is an endeavor to evaluate influence of practice on doctors' behavior towards genericmedicines limiting its mass use. Practice, one factor amongst several, was chosen to evaluate doctors' behavior towards generic medicines. Rising healthcare cost is drawing serious interest towards generic medicines from majority of the countries, developed or developing. In India, out of pocket expenses towards healthcare costs are one of the highest in the world. Besides, affordability is another major challenge in bearing healthcare cost due to its demographics. The alternative to expensive branded medicines is generics, the much talked about in recent times. Generic medicines are being promoted by the government of several countries, doctors in India are being advised to write prescription in generic names. However, there are several challenges in acceptance and usage of generic medicines.

Study design:A questionnaire constructed descriptive, cross-sectional study was conducted in North Indiain 2020 amongst 228 doctors at primary, secondary and tertiary healthcare centers.

Findings: Spearman's rank correlation was computed to evaluate the statistical significance between doctors' practice and prescribing of generic medicines which was found to be positively correlated indicating a significant moderate association between the variables. Practice of doctors has an influence towards prescribing generic medicines which explains limited use of generics.

Research limitations: Articles published earlier than 2007 were not considered for review as they might be irrelevant with the present evolving practices. All the articles in all the databases including some of the paid articles may not have been captured in the search limiting review.

Social implications: The study is of national importance that addresses the challenges around the practice of doctors influencing prescription of generic medicines.

Keywords: generic medicines, generic drugs, knowledge, attitude, practice, doctors, consumers, patients, chemists, government policy

Originality: This is an original study conducted by the authors

Introduction

Doctors perform an important role of a protagonist in the treatment of medical illness of patients by prescribing medicines. It is the decision of a doctor to prescribe medicines in brand or generic names. Generic medicines are being promoted in many countries for affordable access to medicines.

The original or an innovator's drug and its generic alternative are alike, meant to do the same thing (FDA, 2018; WHO, 2021) but have huge price difference. Pharmaceutical companies engaged in generic manufacturing are able to sell medicines at substantial low prices as they are not required to repeat costly clinical trials conducted by the originator.

Along with the originator's brand, several branded generics may be available post patent expiry as substitute to each other, however, there is only one generic name for each medication. Augmentin, for instance, is the brand name for the generic medication amoxicillin plus clavulanic acid which is the original research molecule of GSK, however, besides Augmentin there are several other brands known as *branded generics* available in the Indian market with the same medication such as Bactoclav (Micro Labs), Novaclav (Cipla) and others. Also available at Janaushadhi stores (Indian government supported initiative) is a pure generic of amoxicillin plus clavulanic acid (without a brand name). The strength, dosage, intended use, the way the product is taken into the body, effects, side-effects, safety and risks of generics / branded generics are the same as the innovator's product.

Indian pharmaceutical market is dominated by branded generics, medication in generic name sold under different brand names. Mostly, the branded generic medicines are promoted to doctors for their support in getting prescriptions and are priced higher than the generics (without

any brand name) sold through Janaushadhi (generic drug stores). However, some of the branded generic medicines are not promoted to doctors but offered to chemists at huge discounts making it attractive for them to push or substitute as generics. The price advantage on some of the branded generics has also been found attractive in dispensation at in-house pharmacies of privately managed clinics & secondary care hospitals.

The regulatory directive to doctors to prescribe generic drugs has not been able to garner full support of medical practitioners mostly in the private sector. The unwillingness in doctors to prescribe generic drugs needs to be acknowledged to understand the influence of knowledge, attitude and prescription behavior amongst them. The study primarily focusses on understanding the practice of medical practitioners towards generic medicines.

Review of literature

Savings in cost is the prime purpose in making generic medicines popular by the governments of several countries. Savings in the range of 9 to 89% has been recognized by multiple studies in developing countries by way of dispensing generics for a prescription in branded medicine (Cameron et al., 2012).

World Health Organization health expenditures data of 2016 shows 65% out-of-pocket expenses (OOPE) of health expenditure in India in comparison to 20% of world average.

65.07% of India's population lived in the rural areas in 2020 (Index Mundi, 2022)where access to healthcare and affordability has been a challenge.

In a study (Billa et al., 2014), it was found that the factors preventing use of generics in India were due to limited therapeutic index drugs (43.5%) and fear of inferior quality (38.5%). At a college in Central India, a good majority of doctors (98.4%) including junior and senior residents, interns and academicians had good awareness of generic medicines but it did not reflect in prescription of generic medicines (Badwaik et al., 2015). The partial availability, poor awareness and attitude of patients regarding quality of generic drugs hinder its widespread acceptance in prescribing and dispensation (Tripathi & Bhattacharya, 2018).

Customers cited their positive experiences with previously used medicines as the main reason for refusing substitution (Heikkila et al., 2007). A higher number of lay people (34.03%) felt negatively about substitution of branded drugs with generics, compared to 24.11% of doctors and 11.04% of pharmacists (Colgan et al., 2015). In a study conducted to determine the

association between the quality of generic drugs and brand equity of branded drugs and to evaluate a doctors' opinion in determining generic drugs for selected indications in India (Sanyal & Datta, 2011), the results showed that the brand equity is affected by the judged quality of branded drugs through the mediating variables, internal (product information) and external (price, product name, country of origin, retailer reputation, advertising level). The results also showed that doctors' experience with quality of medicines used leads to quality expectations of substitutable products.

In a study conducted in Japan (Hoshi & Kimura, 2008) it was revealed that one of the reasons for non-use of generic medicines by patients is due to prescribing of branded medicines by physicians. The factors influencing doctors in their choice of medicines in Malaysia are marketing promotional activities of pharmaceutical companies such as advertisements and product bonuses, socio-economic status of patients and credibility of manufacturers (Chua et al., 2010). In a study on customer loyalty (Bachheti & Saklani, 2013), it was found that both rewards to doctors and striking of close relationships between doctors & medical representatives influence doctors' prescription. Negative perceptions on quality of generic drugs and doctors' oriented promotional activities by pharmaceutical companies for branded drugs is leading to choosing expensive branded drugs in the private sector (Aivalli et al., 2018). The doctors' prescriptions are mainly driven by the marketing activities of the pharmaceutical companies through the regular visits by the medical representatives (Shetti & Khanna, 2019). It was found that the pharmaceutical industry has heavy dependency on doctors for prescription of medication, the doctors make a choice not the patients. Therefore, influencing doctors by pharmaceutical companies is the key to drug sales. Majority of doctors (62%) acknowledge having been influenced by marketing promotional strategies of pharmaceutical companies (Narayan et al., 2020).

Doctors have come to trust over time leading companies like Cipla, Dr Reddy's Lab, Sun Pharma and others which are popular for branded generics. Medical representatives of pharma companies have performed very well in building the trust. Transfer of trust to unknown companies manufacturing generic medicines is not possible who mostly sell products with a brand name without promotion (Soans, 2022).

Pharmaceutical companies engaged in aggressive promotion of branded generic medicines further augments the problem. A major concern regarding safety and effectiveness of generic drugs is due to non-adherence to GMP (Good Manufacturing Practices) by pharmaceutical companies (Roy & Rana, 2018).

Interventions contributing to increase in usage of generic medicines were seen as educating masses, monetary incentives, and larger communication amongst health care professionals and patients (Hassali et al., 2009).

In a study conducted in Iraq, it was found that there were several obstacles to prescribing generic medicines such as doctors' unwillingness to prescribe generic medicines, mix-up over different brands and presence of counterfeit medicines (Sharrad & Hassali, 2011).

In a study (Kamejaliya et al., 2017) conducted at a tertiary care teaching hospital in West India, it was found that the majority of the respondents held the opinion that generic medicines are low in prices because of low-grade quality (71.9%), have unsure efficacy in serious diseases (44.6%), can be prescribed in all diseases (61.9%) and prescription of generic medicines should be mandatory (37%). The doctors preferred brands over generic medicines due to reasons such as concern about efficacy (100%), concern about safety (61.57%), poor availability of generic medicines (57.85%), inadequate availability of information (33.06%). Maximum respondents did not consent to substitution of prescribed branded medicine with a generic one by pharmacist due to doubts about quality, effectiveness and safety of generic medicines and hence, may not desire substitution of former. 80.9% doctors were of thinking that outcome of treatment may not change in substituting a brand-name medicine with an equivalent generic alternative (Gupta et al., 2018).

If a doctor prescribes a medicine in generic name without the brand name, then in all probability, the decision on choice of medicine will be with the chemist who may dispense another branded generic or a generic of suspect quality (Soans, 2022).

Based on the literature review as illustrated previously, the components of the questions for the study have been identified which are given in the Table 1.

Table 1 Components of practice related items with reference to previous studies

Component of practice related items	**Previous Study**
Price-Quality parity of generic drugs	(Badwaik et al., 2015; Kamejaliya et., 2017)
Price- Quality parity of generics at Janaushadhi	
Rewards to doctors for prescribing generics	(Badwaik et al., 2015)
Substitution of branded drugs with generics	(Badwaik et al., 2015; Gupta et al., 2018; Kamejaliya et., 2017)
Liberty to choose generics by patient	(Badwaik et al., 2015)
Hesitation in prescribing in some diseases	(Badwaik et al., 2015)
Influence of personal experiences with medicines	(Badwaik et al., 2015)
Influence by patients' demands)	(Badwaik et al., 2015;Gupta et al., 2018)
Consideration of socioeconomic status of patients for prescribing medicines	(Gupta et al., 2015; Singh et al., 2016)
Easy remembrance of brand names	(Badwaik et al., 2015; Gupta et al., 2018)
Influence of medical reps	(Gupta et al., 2015; Gupta et al., 2018; Badwaik et al., 2015)
Availability of medicines	(Gupta et al., 2015)
Outcome of therapy with switching from brands to generics	(Gupta et al., 2015; Badwaik et al., 2015; Kamejaliya et., 2017; (Gupta et al., 2018)
Comparison of safety & efficacy of generic vs. brand name medicines	(Gupta et al., 2015; Singh et al., 2016; Gupta et al., 2018)
Awareness seminars to prescribe generic drug	(Gupta et al., 2015; Gupta et al., 2018)
Published Literature on generic drugs	(Singh et al., 2016)
Mandatory prescribing of generics	(Kamejaliya et., 2017)

Objective and methodology

The objective of the paper is to evaluate and identify critical areas concerning influence of practice of doctors towards generic medicines with an aim to bring forth recommendations in addressing the regulatory policy / framework. The study also provides understanding of issues around practice which the pharmaceutical companies may look at from the perspective of marketing aspects of generic medicines.

The questionnaire based descriptive observational study was conducted in North India at Dehradun district of Uttarakhand spanning over a year in 2020 among doctors practicing in primary, secondary and tertiary healthcare centers.

Research Design

The basic research design process used in the study is descriptive. Further, the study is cross-sectional in nature so as to describe the statistical significance in association between the variables.

Instrument Development

The steps followed in the development process of the instrument included:

- Identification of questions from various studies.
- Refinement and paraphrasing of items in confirmation with our research objectives
- Critical review of developed questionnaire by select few medical practitioners
- Pilot testing with a select 48 doctors to validate the content and clarity of the questionnaire

The section of the questionnaire included seventeen items on 'practice' and one item on 'prescribing of generic medicines'. All items are in Likert-type scale.

Sampling

The membership list of doctors of Indian Medical Association Uttarakhand located within the talukas of Dehradun district formed the population of the study which comprised 671 doctors. Systematic random technique was used to determine the sample.

Sample size

Assuming the highest variability of 50% and designing for a ± 5% sample error at 95 percent level of confidence, the number of respondents estimated is 179 (Burns & Bush, 2003).

Calculations for sample size (n) was determined as follows:

$$n = (Z_{\alpha/2})^2 pq/d^2 = [(1.96)^2 * (50^2)]/5^2 = 384$$

$$d = Z_{\alpha/2}\sqrt{[(1/n + 1/N)pq]} = 1.96\sqrt{\left[\left(\frac{1}{384} + \frac{1}{671}\right) * (50 * 50)\right]} = 6.2671$$

Where

N = population size,
p = 50% unknown,
q = 50% (100 – p), d = 5%,
α= 5% level of significance.

Minimum sample size

$$= (Z_{\alpha/2})^2 pq/[d^2 + (Z^2_{\alpha/2}\, pq/N)] = 1.96^2 * 50^2/[6.2671^2 + (1.96^2 * 50^2/671)] = 179$$

Type of survey

The questionnaire designed for the study was self-administered amongst medical practitioners with face to face interaction. Due to restrictions imposed during the Covid 19 pandemic, telephonic interviews, email and google-form were also used to collect responses from the

medical practitioners. In all 228 doctors responded to the survey instrument.

The sample data was compiled in excel and analyzed using SPSS 25 for analysis. P values of ≤0.05 <.05 were considered to indicate statistical significance.

Analysis and interpretations

Table 2 summarizes the demographic of the participants. Table 3 includes responses to practice related questions**.** Graphical representation of frequency of responses of the respondents against the practice-related questions is shown in Figure1

Table 2 Demographic details of the participants

		Frequency	Percent
Gender	Male	168	73.7
	Female	60	26.3
	Total	228	100.0
Age Group	<30	4	1.8
	31-40	47	20.6
	41-50	59	25.9
	51-60	39	17.1
	>60	79	34.6
	Total	228	100.0
Healthcare Center Type	Primary Care	56	24.6
	Secondary Care	85	37.3
	Tertiary Care	87	38.2
	Total	228	100.0
Employment	Self-employed	106	46.5
	Govt. Hospital	39	17.1
	Pvt. Hospital	78	34.2
	Charitable Hospital	5	2.2
	Total	228	100.0
Qualification Categorization	UG Degree	27	11.8
	PG Diploma / Degree	184	80.7
	Post PG Degree	17	7.5
	Total	228	100.0
Specialty Categorization	Non-Surgical	128	56.1
	Surgical	100	43.9
	Total	228	100.0

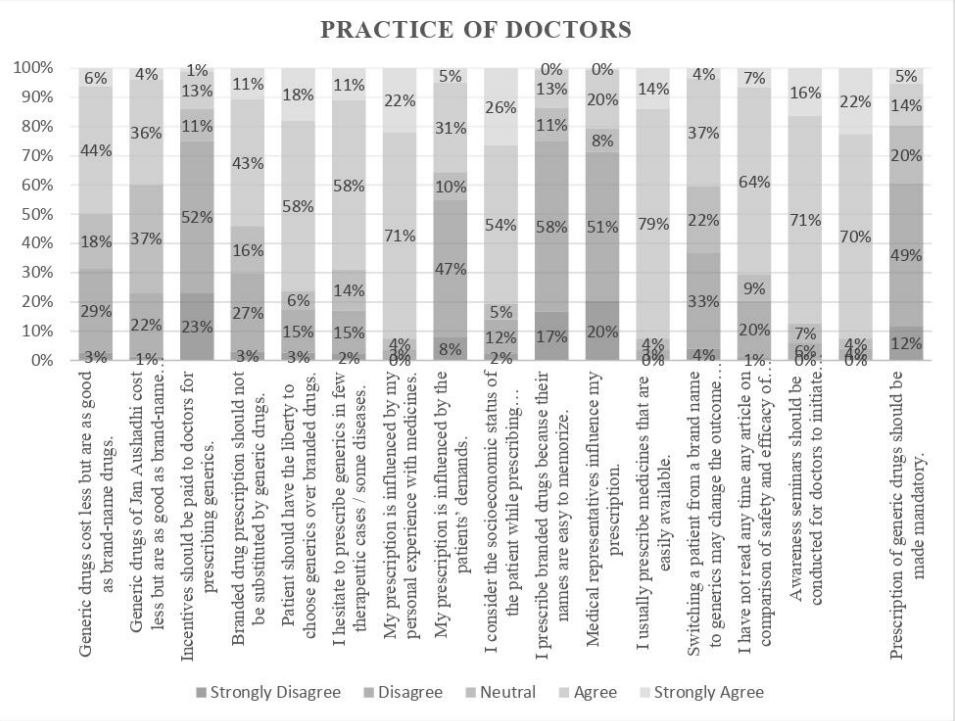
Source: Author's Compilation

Table 3 **Practice related questions along with frequency (numbers and %) of responses**

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Generic drugs cost less but are as good as brand-name drugs.	6	66	42	100	14
	2.6%	28.9%	18.4%	43.9%	6.1%
Generic drugs of Janaushadhi cost less but are as good as brand-name drugs.	3	50	84	82	9
	1.3%	21.9%	36.8%	36%	3.9%
Incentives should be paid to doctors for prescribing generics.	53	118	25	29	3
	23.2%	51.8%	11%	12.7%	1.3%
Branded drug prescription should not be substituted by generic drugs.	7	61	37	99	24
	3.1%	26.8%	16.2%	43.4%	10.5%
Patient should have the liberty to choose generics over branded drugs.	6	34	14	133	41
	2.6%	14.9%	6.1%	58.3%	18%
I hesitate to prescribe generics in few therapeutic cases / some diseases.	5	34	32	132	25
	2.2%	14.9%	14%	57.9%	11%
My prescription is influenced by my personal experience with medicines.	1	7	9	161	50
	0.4%	3.1%	3.9%	70.6%	21.9%
My prescription is influenced by the patients' demands.	18	107	22	70	11
	7.9%	46.9%	9.6%	30.7%	4.8%
I consider the socioeconomic status of the patient while prescribing medicines.	5	27	12	124	60
	2.2%	11.8%	5.3%	54.4%	26.3%
I prescribe branded drugs because their names are easy to memorize.	38	132	26	30	1
	16.7%	58.1%	11.5%	13.2%	0.4%
Medical representatives influence my prescription.	46	116	18	46	1
	20.3%	51.1%	7.9%	20.3%	0.4%
I usually prescribe medicines that are easily available.	1	7	9	179	32
	0.4%	3.1%	3.9%	78.5%	14.0%
Switching a patient from a brand name to generics may change the outcome of the therapy.	9	75	51	84	8
	4.0%	33.0%	22.5%	37.0%	3.5%
I have not read any time any article on comparison of safety and efficacy of generic vs. brand name medicines.	2	44	20	144	15
	0.9%	19.6%	8.9%	64%	6.7%
Awareness seminars should be conducted for doctors to initiate prescription of generic drugs.	1	13	15	162	37
	0.4%	5.7%	6.6%	71.1%	16.2%
Published literature on generic drugs will develop doctor's confidence for its prescription.	1	8	8	159	51
	0.4%	3.5%	3.5%	70%	22.5%
Prescription of generic drugs should be made mandatory.	27	111	45	33	12
	11.8%	48.7%	19.7%	14.5%	5.3%

Source: Author's Compilation

Figure 1 Graphical representation of responses to practice related questions



Source: Author's Compilation

50% of the doctors agree that generic medicines are inexpensive and as efficacious as brand name drugs, however, when it comes to generics at Janaushadhi stores, only 40% of the doctors are in agreement. A point to be noted, 37% of doctors, the highest neutral response amongst practice items, are undecided with regards to quality of generics at Janaushadhi stores.

Majority of doctors (75%) disagree with incentives for prescribing generics. 54% agree with non-substitution of their branded prescription with generic medicines. 76% agree with liberty to patients for choosing generic alternatives over branded drugs. 69% agree with hesitation in prescribing generics in some diseases. Overwhelmingly (93%) agree that their

prescription is influenced with their personal experience with medicines. 55% do not agree to having been influenced in prescribing medicines by patients demands. Overwhelmingly, 80% consider socio-economic status of patients while prescribing medicines. Majority (75%) disagree with prescribing branded drugs due to easy remembrance of brand names. 71% do not get influenced by medical representatives in prescribing medicines. 93% prescribe medicines that are easily available. Responses, 41% (agree) and 37% (disagree) were divided between on change of outcome of therapy with change of medicine to generics. 71% of doctors have not read any article detailing comparison of branded and generic medicine on efficacy and safety. 87% agree with conduct of seminars for doctors for promotion of generic medicines. 92% consented to development of confidence in prescribing generic medicines with published literature. Majority of doctors (61%) disagree with mandatory prescribing of generics.

The responses of doctors towards prescribing generic drugs is shown in table 4.

Table 4 Responses (frequency & %) of doctors towards prescribing generic drugs

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I usually prescribe generic drugs	6	64	66	76	16
	2.6%	28.1%	28.9%	33.3%	7.0%

To find out the statistical significance of how doctors' practice influence their prescription behavior towards generic medicines the research question was framed, "*Does practice of doctors play a significant role in influencing them in prescription generic medicines?"* Spearman's rank correlation was computed to assess the statistical significance between doctors' practice and prescribing of generic medicines. A positive correlation was found between the two variables, $r(221)= 0.45$, $p < 0.01$ Test results are given in table 5

Result of the Spearman correlation indicated that there was a significant moderate association between doctors' practice and prescription of generic medicines. It may be concluded that the practice being followed by doctors plays a significant role in influencing them in prescribing less of generic medicines.

Table 5 Spearman test results

			Practice items	Prescription of generic medicine
Spearman's rho	Practice items	Correlation Coefficient	1.000	.450**
		Sig. (2-tailed)	.	.000
		N	221	221
	Prescription of generic medicines	Correlation Coefficient	.450**	1.000
		Sig. (2-tailed)	.000	.
		N	221	221

**. Correlation is significant at the 0.01 level (2-tailed).

According to the analysis of the responses, a good percentage of respondents were found to be having practice that favors branded medicines. As per the Kruskal-Wallis test, no change in practice was found between male and female doctors, in different age groups of doctors, doctors practicing at different healthcare centers (primary, secondary, tertiary), in different employment status (self-employed, govt. hospital, pvt. Hospital), doctors qualified with UG degree, PG diploma/degree, Post-PG degree and having non-surgical & surgical practice.

A mixed response, major similarities and few contrasts, was observed in comparison to previous studies.

Majority of doctors in this study and previously conducted disagree with quality of low-priced generics at par with branded medicines (Billa et al., 2014; Badwaik et al., 2015; Kamejaliya et al., 2017; Tripathi & Bhattacharya, 2018;Aivalli et al., 2018; Roy & Rana, 2018).

In this study 71% of doctors disagree with getting influenced by medical representatives in prescribing medicines which is in major contrast to another study (Narayan et al., 2020) in which 62% of doctors acknowledge having been influenced by medical representatives. However, multiple studies have shown that the promotional marketing strategies by pharmaceutical companies is influencing doctors in prescribing branded medicines (Chua et al., 2010; Bachheti & Saklani, 2013; Aivalli et al., 2018; Shetti & Khanna, 2019).

69% of doctors in this study compared with 44.6% in previously conducted (Kamejaliya et al., 2017) agreed with hesitation in prescribing generics in some serious diseases.In the study 41% agreed and 37% disagreed on change of outcome of therapy with change of medicine to generics in comparison to another study (Gupta et al., 2018) in which 80.9% doctors were of

thinking that outcome of treatment may not change in substituting a brand-name medicine with an equivalent generic.

Overwhelmingly, 93% doctors agree that their prescription is influenced with their personal experience with medicines and majority (54%) disagree with non-substitution of their branded prescription with generic by the chemists which was found to have similarity with the studies (Heikkila et al., 2007; Sanyal & Datta, 2011; Colgan et al., 2015; Kamejaliya et al., 2017).

Study was found to have commonality with the other study on consideration of socio-economic status of patients (Chua et al., 2010) & availability of products (Kamejaliya et al., 2017; Tripathi & Bhattacharya, 2018) by doctors while prescribing medicines.

Majority of doctors in this study disagree with incentives for prescribing generic medicines whereas in a study (Chua et al., 2010; Bachheti & Saklani, 2013) it is revealed that product bonuses / rewards influence doctors in their choice of medicines.

Majority of the doctors (71%) in the study have not read any article detailing comparison of branded and generic medicine on efficacy and safety, one reason for doctors (33.06%) preferring branded medicines is due to inadequate availability of information.

Over 60% of doctors in this study and previously conducted (Kamejaliya et al., 2017) do not agree with mandatory prescribing of generics.

Limitations

Articles published earlier than 2007 were not considered for review as they might be irrelevant with the present evolving practices. All the articles in all the databases including some of the paid articles may not have been captured in the search limiting complete review. Policy directives, initiatives, programs, schemes introduced in recent years by the government might have an effect on views of doctors.

Conclusion

Practice being followed by doctors has an influence on prescribing of generic medicines. Low prescription of generic medicines can be explained by practice of doctors favoring prescription of branded medicines due to factors such as hesitation in prescribing generics in all the diseases, satisfying experience with the previously prescribed medicines, availability, change in outcome

with generic substitution, unavailability of information showing comparison of data on efficacy & safety between generics & brands and marketing promotional activities by pharmaceutical companies.

Recommendation

Regulatory & marketing intervention in following areas is recommended that may lead to wider acceptance and usage of generic medicines.

I. Quality of generics may be demonstrated at par with innovators' product.
II. Availability of generics may be widespread improving reach and affordable accessibility.
III. Periodic testing of branded generics & generics (Janushadhi) samples from the different market regions may be conducted.
IV. Educational /promotional campaigns supplemented with published literature showing comparison of efficacy & safety between generics and brands for diseases including critical or serious may be planned & implemented.

Scope of further research

Further research is needed in the following areas:

i. To explore different interventions amongst doctors to nurture a positive attitude and patronage for generic medicines.
ii. To evaluate regulatory policy framework for registration, labeling, pricing structure, distribution & marketing of generics that may build confidence in doctors towards prescribing generic medicines.
iii. Building a trust in generics of unknown companies in absence of promotion by medical representatives is an area that needs to be explored from marketing perspective of generics.

Declarations

Conflict of interest

The authors disclose no conflict of interest.

Funding

The study received no funding from any agency in public, private or not-for-profit sectors.

References

Aivalli, P. K., Elias, M. A., Pati, M. K., Bhanuprakash, S., Munegowda, C., Shroff, Z. C., & Srinivas, P. N. (2018). Perceptions of the quality of generic medicines: implications for trust in public services within the local health system in Tumkur, India. *BMJ Global Health, 2*:e00064. https://doi:10.1136/bmjgh-2017-000644

Bachheti, M., & Saklani, A. (2013). What Affects Customer Loyalty: Trust, Rewards, or Relationship Management? In proceedings of the 2013 Conference of Academy of Marketing (Cardiff).

Badwaik, R. T., Chopade, S. S., Mahajan, H. M., & Honrao, R. (2015). Prescribers views on generic medicines: A study on knowledge, attitude and practice. *J Cont Med A Dent*, *3*(2), 27-32.

Billa, G., Thakkar, K., Jaiswar, S., & Dhodi, D. (2014). A Cross-Sectional Study to Evaluate the Awareness and Attitudes of Physicians Towards Reducing the Cost of Prescription Drugs, Mumbai. *Applied Health Economics and Health Policy, 12 (2)*:125–137.

Burns, A. C., & Bush, R. F. (2003). *Marketing Research: online research applications* (4th Edition). Prentice Hall

Cameron, A., Mantel-Teeuwisse, A. K., Leufkens, H. G., & Laing, R.O. (2012). Switching from originator brand medicines to generic equivalents in selected developing countries: How much could be saved? *Value Health, 15*:664–73.

Chua, G. N., Hassali, M. A., Shafie, A. A., & Awaisu, A (2010). A survey exploring knowledge and perceptions of general practitioners towards the use of generic medicines in the northern state of Malaysia. *Health Policy*, *95*(2-3): 229 - 235

Colgan, S., Faasse, K., Martin, L. R., Stephens, M. H., Grey, A., & Petrie, K. J. (2015). Perceptions of generic medication in the general population, doctors and pharmacists: a systematic review. *BMJ Open* 5:e008915. https://doi:10.1136/bmjopen-2015-008915

FDA (2018, December 31) *Generic Drugs: Questions & Answers* https://www.fda.gov/drugs/frequently-asked-questions-popular-topics/generic-drugs-questions-answers

Gupta, R., Malhotra, A., & Malhotra, P. (2018). A study on assessment of awareness on generic drugs among doctors in a tertiary care teaching hospital in north India. *International Journal of Research in Medical Sciences. 6*(4):1362-1367.

Gupta, S. K., Nayak, R. P., & Vidyarthi, S. K. (2015). A study on the knowledge, attitude, and practice of generic medicines among the doctors in a tertiary care teaching hospital in South India. *Natl J Physiol Pharm Pharmacol 5*:39-44.

Hassali, M. A., Wong, Z. Y., Alrasheedy, A. A., Saleem, F., Mohamad Yahaya, A.H., & Aljadhey, H. (2014). Does educational intervention improve doctors' knowledge and perceptions of generic medicines and their generic prescribing rate? A study from Malaysia. *SAGE Open Med. 2*

Heikkilä, R., Mäntyselkä, P., Hartikainen-Herranen, K., & Ahonen, R. (2007). Customers' and Physicians' opinions of and experiences with generic substitution during the first year in Finland. *Health Policy, 82*(3):366–374.

Hoshi, S., & Kimura, H. (2008). Questionnaire on the awareness of generic drugs among outpatients and medical staff. *Drug Discoveries & Therapeutics*, *2*(3):194–199.

Index Mundi (2022, June 11) *India – Rural population*

https://www.indexmundi.com/ facts/india/rural-population

Kamejaliya, D. Z., Kapadia, J. D., Desai, C. K., & Desai, M. K. (2017). Knowledge, Attitude and Practice of Resident Doctors for use of Generic Medicines at a Tertiary Care Hospital. *Journal of Young Pharmacists, 9*(2): 263-266.

Narayan, M., Mohanty, B., & Kumar, M. (2020). Examining the Effect of Marketing Promotional strategies of Pharmaceutical Companies on Doctors' Prescription Behaviour. *Research J. Pharm. and Tech.; 13*(10):4888-4894.

Roy, V., & Rana, P. (2018). Prescribing generics: All in a name. *Indian Journal of Medical Research,147*(5): 442–444.

Sanyal, S. N., & Datta S. K. (2011). The effect of perceived quality on brand equity: an empirical study on generic drug. *Asia Pacific Journal of Marketing & Logistics, 23* (5): 604 - 6025

Sharrad, A. K., & Hassali, M. A. (2011). Consumer perception on generic medicines in Basrah, Iraq: preliminary findings from a qualitative study. *Res Social Adm Pharm*, *7*(1):108–112.

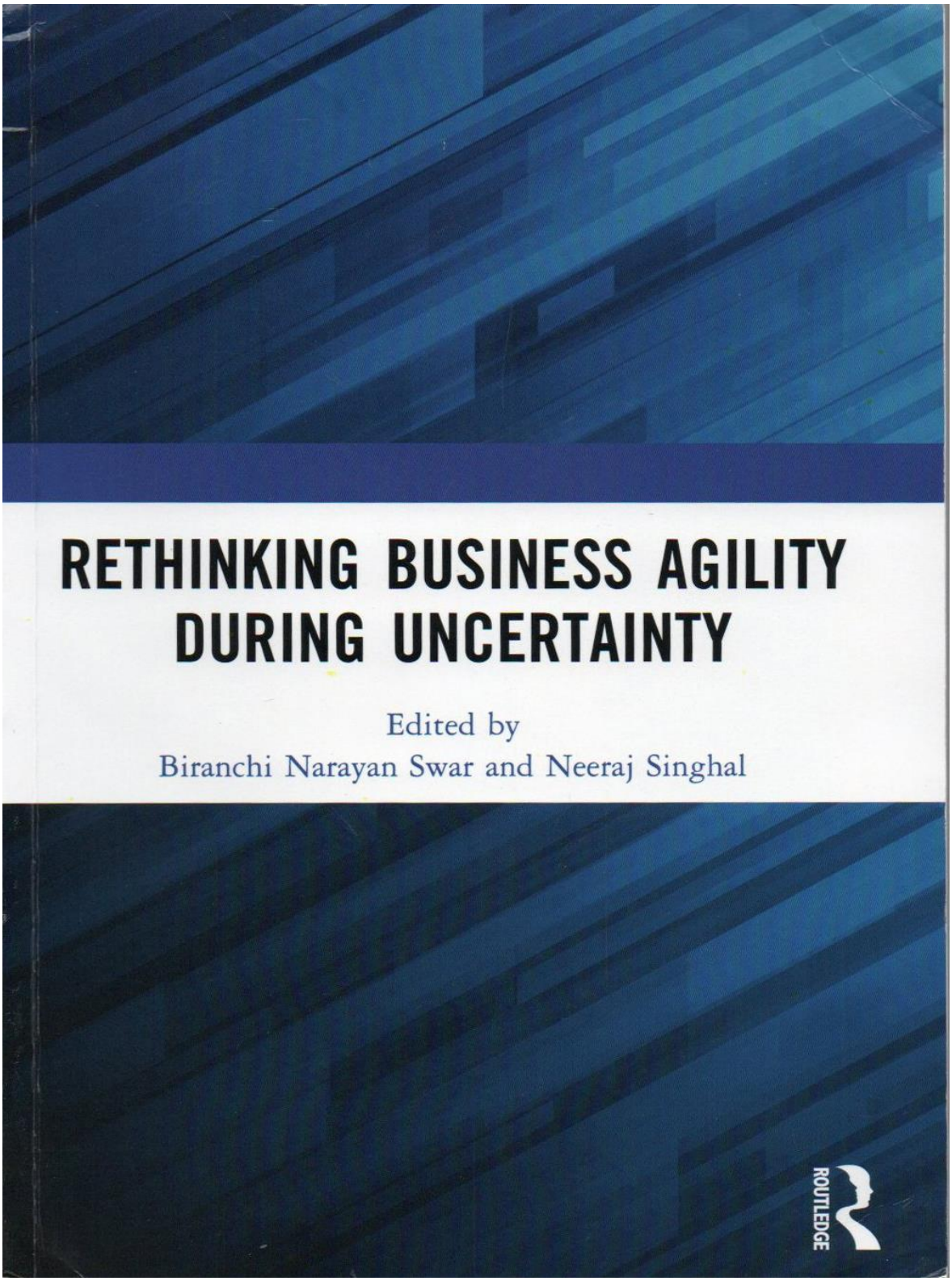
Shetti, G., & Khanna, V. T. (2019). Role of Prescriptions in the Pharmaceutical Market: A Willingness to prescribe study of the Generic drugs. *BVIMSR's Journal of Management Research*, *11*(2), 124-130.

Singh, K. R., Phatak, A. M., & Sathe, M. A. (2016). Beliefs and attitudes of generic versus original drugs among doctors in a tertiary-care hospital in Western India. *National Journal of Physiology, Pharmacy and Pharmacolog, 6*(4): 276-281

Soans, A. (2022, April 14) *Quality, not price, the key issue when prescribing generic drugs in India*. https://thewire.in/health/drugs-generics-branded-health

Tripathi, S., & Bhattacharya, S. (2018). Patient Perception about Generic vs. Branded Medicines Prescribed in a Tertiary Care Hospital in Northern India-A Descriptive Study. *Indian Journal of Pharmacy Practice*, *11*(2).

WHO (2021, June 8) *Drug information from WHO*. http://www.who.int/medicines/publications/druginformation/WHO_DI_30-3_GenericMedicines.pdf


RETHINKING BUSINESS AGILITY
DURING UNCERTAINTY
Edited by
Biranchi Narayan Swar and Neeraj Singhal
ROUTLEDGE

Rethinking Business Agility During Uncertainty

Patron

Prof. (Dr.) Atmanand
Director, MDI Murshidabad

Edited by

Biranchi Narayan Swar
Professor of Marketing and Dean-Continuing Education,
Management Development Institute, Murshidabad, India

Neeraj Singhal
Assistant Professor in Strategic Management area,
Management Development Institute, Murshidabad, India

Routledge
Taylor & Francis Group
New York London

MDI MURSHIDABAD | Management Development Institute

3 Influence of medical practitioners' knowledge on the prescription behavior for generic medicines

Sunil Madan and Som Aditya Juyal*

Himalayan School of Management Studies, Swami Rama Himalayan University, Jolly Grant, Dehradun 248016, India, E-mail: sunil.madan@usa.net, somadityajuyal@srhu.edu.in

*Corresponding Author

Abstract

Purpose: The study is an attempt to uncover key areas related to knowledge limiting the mass use of generic medicines. Knowledge of medical practitioners, one factor among several, was chosen to evaluate the prescription behavior of doctors toward generic medicines. The study is of national importance that addresses the issue of low generic prescriptions despite high out-of-pocket expenses and majority of the population living in the rural area with low income.

Study design/methodology: A descriptive, cross-sectional study using a self-administered questionnaire was conducted among 228 doctors practicing in primary, secondary, and tertiary healthcare centers of Dehradun district in 2020.

Findings: Spearman's rank correlation computed to assess the association between knowledge and prescription of generic medicines was found to be positively correlated between the two variables indicating a significant association between them.

Keywords: generic medicines, generic drugs, knowledge, attitude, practice, doctors, consumers, patients, chemists, government policy

Introduction

Generic medicines, offering an alternative to expensive medicines, are being promoted by the Government of India. Medical practitioners are being advised to write prescription in generic names, however, there are several challenges in its mass use.

Medicines are available under two names: a brand name and a chemical name of a drug (generic name). Generic medicines are introduced on the expiry of the patent of a drug. The originator of a new drug protects its intellectual property rights by covering its innovation (newly discovered molecule) under patent (legal protection). Patent holders have the exclusive right to manufacture, market, and eventually profit from the drug. The exclusive right provides an opportunity to the innovator to recoup its investment in research and development in discovery of a novel drug with a market free of price controls.

World Health Organization (WHO) has defined the commonly understood terms "generic drug" or "generic medicine" meaning a pharmaceutical product, which does not require an authorization from an innovator company to manufacture and is marketed after the patent has expired. Generic medicines are usually

interchangeable with an original product of an innovator (Drug information on generic medicines, 2018 and FDA questions answers, 2018). The generic medicine is meant to do the same thing as the originator drug but is much cheaper than the branded medicines. The expensive clinical trials are not required to be conducted by the generic manufacturers because of which they are able to sell medicines at low prices.

There is only one generic name for each medication, but several brands available as substitute to each other. The brand name is usually the largest writing on the packet. Augmentin, for instance, is the brand name for the generic medication amoxicillin plus clavulanic acid. Generic medicines are exactly the same in pharmacological effects as their brand-name counterparts, which means the strength, dosage, intended use, route of administration, effects, side effects, safety, and risks are the same as the innovator product. For example, paracetamol is the generic name for well-known popular branded medicines like Crocin and Calpol.

Generic drugs sold under different brand names, classified as "Branded Generics" dominate the Indian pharmaceuticals market. The branded generic medicines are promoted to doctors for their support in getting prescriptions and are priced higher than the generics (without any brand name) sold through Jan Aushadhi Kendras (Generic Drug Stores). However, there are pharmaceutical companies who are not promoting some of the branded generic medicines to doctors but offering to chemists (or pharmacists) at huge discounts making it attractive for them to push or substitute as generics.

Price comparison of a few leading brands and their generic alternative available at Jan Aushadhi Kendras for which the price is fixed by the department of Government of India is given in Table 1.

Doctors play an important role in treating the medical illness of patients by prescribing medicines. Prescribing branded medicines or by generic names is the decision of a doctor. Generic prescribing is being promoted in many countries to reduce the cost of treatment Billa et al. (2014).

The directive toward a legal framework to make doctors prescribe generic drugs followed by advisories issued by Medical Council of India (MCI) asking medical practitioners to prescribe medicines by generic names has failed to gather full support of medical practitioners mostly in the private sector. Doctors so far seem unwilling to prescribe medicines in generic name. Therefore, it is important to acknowledge the unwillingness in doctors to prescribe generic drugs by understanding the knowledge, attitude, intension, and prescription behavior among them. This study primarily focuses on understanding the knowledge of medical practitioners toward generic medicines.

Review of literature

Affordability is the main reason to make generic medicines popular by the government. For a long time, generic medicines have been recognised as a way to reduce healthcare expenses Bera and Mukherjee (2012). Multiple studies have confirmed that savings in the range of 9–89% can be achieved in developing countries by way of substituting originator brands by low-priced generic medicines Cameron et al. (2012).

Table 1 Price comparison between brands and generic alternatives.

	Brands			*Generics*			*Price difference*
Category	*Brand name*	*Company name*	*Price MRP (Rs)*	*Generic name*	*Company name*	*Price MRP (Rs)*	*Generic vs. brand % (app.)*
Anti-infective	Augmentin	GSK	18.88 per tablet	Amoxicillin 500 mg and Clavulanic acid 125 mg	BPPI	8.71 per tablet	↓54%
	Ceftum	GSK	98.00 per tablet	Cefuroxime Axetil 500 mg film-coated tablet	BPPI	10.45 per tablet	↓89%
Antidiabetic	Glycomet	USV	1.58 per tablet	Metformin 500 mg tablet	BPPI	0.40 per tablet	↓75%
	Huminsulin	Eli Lilly	148.00 per inj.	Insulin Injection IP 40 IU/mL inj.	BPPI	68.00 per inj.	↓54%
Drugs for central nerve system	Pregacip M	Cipla	13.50 per capsule	Pregabalin 75 mg + ethylcobalamin 750 mcg Tablet	BPPI	2.80 per capsule	↓79%
	Tegretol	Novartis	1.14 per tablet	Carbamazepine 200 mg tablet	BPPI	0.70 per tablet	↓39%
Drugs for cardio vascular system	Cilacar	JB Chemicals	12.81 per tablet	Cilnidipine 20 mg tablet	BPPI	1.80 per tablet	↓86%
	Olmesar	Macleods	9.65 per tablet	Olmesartan 20 mg tablet	BPPI	1.33 per tablet	↓86%

Source of information: Online pharmacies and Jan Aushadhi Kendras

Out-of-pocket payments were estimated at 62% of total health expenses in 2014 in India where according to a survey, only 15% of the population is covered by health insurance, healthcare expenses are borne by 85% of Indians who pay out of their own pockets Trends in catastrophic health expenditure in India (2018). Almost all the countries in the world, rich or poor, are taking more interest with the rising healthcare costs. Branded generics available at high prices leading to affordability issues dominate the Indian market. Over 65% of India's population lives in rural areas Indian demographic profile (2018), out of which over 37% is either close to the poverty line or below it. According to a WHO report, a majority of Indian population (nearly 68%) has either inadequate availability or no access to essential medicines. Additionally, free medicine's availability in public healthcare services has fallen from 17.8% to 5.9% for outpatient and 31.2% to 8.9% for inpatient over two decades, according to a 2011 Public Health Foundation of India study.

In a study conducted in Japan Hoshi and Kimura (2008) to assess the awareness of generic medicines among outpatients and medical staff, it was concluded that in addition to the promotion of generic medicines in the media, medical practitioners and pharmacists should endorse use of generic drugs to enhance its acceptance among patients. One of the reasons for patients not using generic medicines is due to prescribing of branded medicines by physicians.

In a study conducted in Turkey Toklu et al. (2012) to assess knowledge and attitudes toward generic medicines of patients, pharmacists, and physicians, it was found that patients, pharmacists, and doctors have insufficient knowledge about generic medicines. It was seen there is no association between acceptance of generic drugs and demographics such as age, gender, and income (excluding education). However, a negative association was found between acceptance of generic drugs and education level, that is, acceptance of generic substitution is unlikely with more highly educated patients.

In a study conducted in Italy Fabiano et al. (2012) to collect information regarding family pediatricians' perception of generic medicines and generic prescribing, it was found that only 37.2% of respondents had sufficient knowledge and 32.6% of the doctors had good knowledge of generic medicines. One of the factors hindering prescribing of generic medicines was the insufficient knowledge of generic medicines.

The fostering of close relationship between doctors and pharma companies managed through medical representatives (MRs) has been known the world over which works both ways—companies assisting doctors increase in their knowledge of company's product and doctors giving feedback to companies to develop new and more effective medicines. Such collaboration benefits patients and society through improved health care. In a study on customer loyalty Bachheti and Saklani (2013), it was found that both rewards to doctors and striking of close relationships between doctors and MRs influence doctors' prescription.

Major reasons for preferring of branded medicines by resident doctors are due to concerns about efficacy, safety, and availability of generic medicines. In a study Kamejaliya et al. (2017), conducted at a tertiary care teaching hospital in West India, it was found that the doctors preferred brand over generic medicine due to reasons such as concern about efficacy (100%), concern about safety (61.57%),

poor availability of generic medicines (75.85%), adequate information not available (33.06%). Majority of respondents did not agree to substitution of brand medicine with a generic one by pharmacist due to doubts about quality, effectiveness, and safety of generic medicines and hence, may not desire substitution of former.

The generic drug can considerably bring down the cost involved in the treatment but without compromising efficacy and safety. The generic drug must prove to be bioequivalent with their branded counterparts. The possible and immediate effect of this decision will be that the unethical or commission-based prescription by the doctors will be hampered Chaturvedi (2017).

In a study to explore doctors' perceptions and understanding (knowledge, attitude, and practice) about generic medicines at a tertiary care hospital in North India Gupta et al. (2018), it was concluded that 62.9% of doctors agreed to generic drugs were intended to be interchangeable with a branded medicine; 77.5% of doctors had awareness on the conduct of bioequivalence studies between the generic medicine and their branded counterparts; 88.8% of the doctors agreed to teaching the significance of generic medicines in early part of internship; 80.9% doctors were thinking that outcome of treatment may not change in switching from a brand-name to generic drug. However, due to concerns expressed by a portion of participants, further effort is required on how interventions both for doctors and public may lead to rise in the awareness and acceptability of generic medicines.

Numerous studies have been carried out globally exploring perception, knowledge, attitude, practice, and so on, of generic medicines among population, patients, pharmacists, and prescribers of generic medicines.

Most of the studies conducted are in developed countries, further studies mostly in developing countries are required. Considering demographics and other factors, the need for cost savings and the decision-making process for prescribing generic medicines is more in developing countries.

Most of the studies conducted to assess perception, knowledge, attitude, and so on, are focused on patients, customers, and population; however, limited studies are available focused on doctors.

The studies available on the perception of doctors toward generic medicines, largely limited to a few tertiary care hospitals in India were mostly pilot in nature but were able to offer initial findings and valuable understandings to encourage further research in this under-researched area.

Based on the literature review as illustrated previously, the questions for the study have been identified which are given in Table 2.

Objective and methodology

The objective of the paper is to find out the relationship between knowledge and prescription of generic medicines by the doctors and bring forth suggestions including marketing aspects of generic medicines that the pharmaceutical companies need to take into consideration that may lead to increase in prescribing of generic medicines.

A descriptive, cross-sectional study using self-administered questionnaire was conducted among 228 doctors practicing in primary, secondary, and tertiary healthcare centers of Dehradun district in 2020.

Table 2 Knowledge construct.

Component	*Previous studies*	*Items of questions*
Composition, dose, indications	Gupta et al. (2015) Gupta et al. (2018)	Composition, dose, and indications of generic medicines are the same as branded/innovator medicine.
Therapeutically equivalence	James et al. (2018)	All generic products of a particular medicine that are rated as generic equivalents are therapeutically equivalent to each other.
Interchangeability	Gupta et al. (2015) Badwaik et al. (2015) Gupta et al. (2018)	Generic drugs are usually intended to be interchangeable with an innovator/ branded drug.
Generic introduction	Gupta et al. (2015) Badwaik et al. (2015) Gupta et al. (2018)	Generic drugs can be only marketed after the expiry date of the patent of innovator.
Jan Aushadhi awareness	Badwaik et al. (2015) Gupta et al. (2015) Gupta et al. (2018)	I have limited awareness about the *Jan Aushadhi* scheme of Government of India.
IMA guidelines awareness	Badwaik et al. (2015) Gupta et al. (2015) Gupta et al. (2018)	I am aware of Indian Medical Council guidelines to prescribe medicines by generic names in place of brand names.
Bioequivalence	Hassali et al. (2014) James et al. (2018)	A generic medicine is bioequivalent to a brand name medicine.

Source: Author compilation.

The questionnaire designed for the study included seven items related to knowledge in Likert-type scale.

The sample data were compiled in excel and analysed using SPSS 25 for analysis. *P* values of ≤ 0.05 were considered to indicate statistical significance.

Analysis and interpretations

Table 3 summarizes the demographics of the participants.

Frequency of responses of the respondents against the knowledge-related questions is shown in Table 4.

A majority of doctors, 78.5%, agreed to have knowledgeable about dosage, composition, and indications of generic medicines being identical to branded or innovator medications; 46.5% of respondents have the knowledge that all generics are therapeutically equivalent to each other. The majority of doctors, 66.7%, know that generics can be interchanged with innovator/branded medicines. Less than 50% of doctors (43.4 %) are aware that generic drugs can only be marketed after the patent expires; 54.2% of doctors know little or nothing of Jan Aushadhi scheme; 89.9% of doctors are aware of the guidelines given by Indian Medical Council guidelines to prescribe medicines by generic names. Less than 50% of the doctors (46.4%) know that generic medicines are bioequivalent to brand-name medicines.

Table 3 Demographic details of the participants.

		Frequency	*Percent*
Gender	Male	168	73.7
	Female	60	26.3
	Total	228	100.0
Age group	<30	4	1.8
	31–40	47	20.6
	41–50	59	25.9
	51–60	39	17.1
	>60	79	34.6
	Total	228	100.0
Healthcare center type	Primary care	56	24.6
	Secondary care	85	37.3
	Tertiary care	87	38.2
	Total	228	100.0
Employment	Self-employed	106	46.5
	Govt. hospital	39	17.1
	Pvt. hospital	78	34.2
	Charitable hospital	5	2.2
	Total	228	100.0
Qualification categorization	UG degree	27	11.8
	PG diploma/degree	184	80.7
	Post PG degree	17	7.5
	Total	228	100.0
Specialty categorization	Nonsurgical	128	56.1
	Surgical	100	43.9
	Total	228	100.0

Source: Author compilation.

With an aim to find out the statistical significance between knowledge (generic medicines) and prescription, a research question was framed, *does knowledge of generic medicines play a significant role in influencing doctors in prescribing generic medicines?* Spearman's rank correlation coefficient was computed to assess the statistical significance between knowledge (generic medicines) and prescription.

A positive correlation was found between the two variables, $r\ (225) = 0.41$, $p < 0.001$ indicating significant moderate association between knowledge of generic medicines in doctors and prescription of generic medicines. Thus the finding supports knowledge of generic medicines plays a significant role in influencing doctors in prescribing generic medicines. Spearman test results are summarised in Table 5.

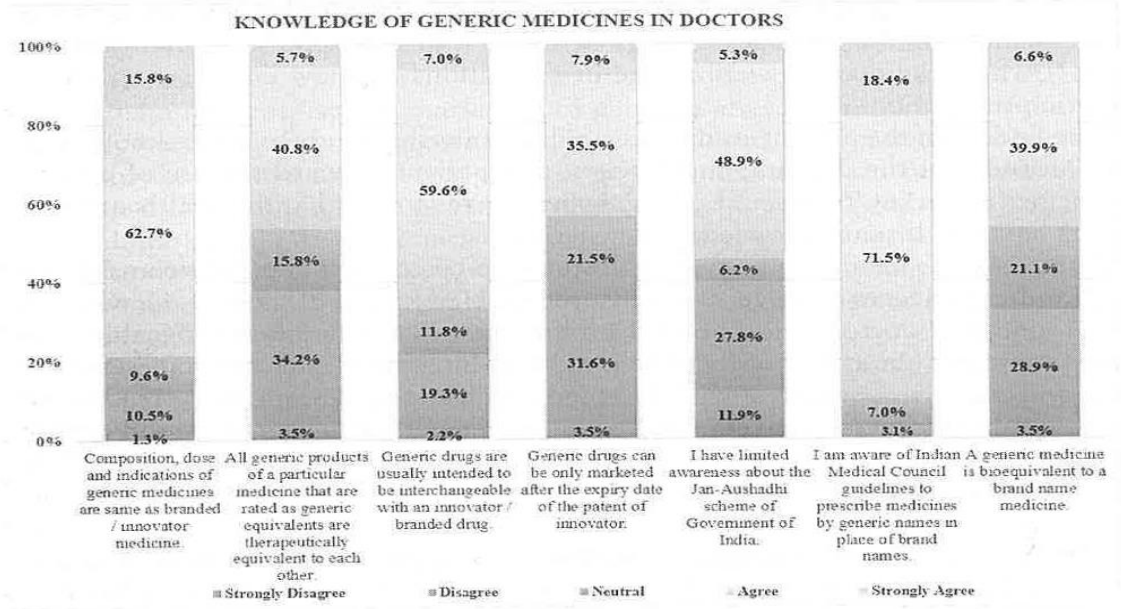
Table 4 Knowledge-related questions along with frequency (numbers and %) of responses.

Questions	*Strongly disagree*	*Disagree*	*Neutral*	*Agree*	*Strongly agree*
Composition, dose, and indications of generic medicines are the same as branded/innovator medicine.	3	24	22	143	36
	1.3%	10.5%	9.6%	62.7%	15.8%
All generic products of a particular medicine that are rated as generic equivalents are therapeutically equivalent to each other.	8	78	36	93	13
	3.5%	34.2%	15.8%	40.8%	5.7%
Generic drugs are usually intended to be interchangeable with an innovator/branded drug.	5	44	27	136	16
	2.2%	19.3%	11.8%	59.6%	7.0%
Generic drugs can be only marketed after the expiry date of the patent of innovator.	8	72	49	81	18
	3.5%	31.6%	21.5%	35.5%	7.9%
I have limited awareness about the *Jan-Aushadhi* scheme of Government of India.	27	63	14	111	12
	11.9%	27.8%	6.2%	48.9%	5.3%
I am aware of Indian Medical Council guidelines to prescribe medicines by generic names in place of brand names.	0	7	16	163	42
	0.0%	3.1%	7.0%	71.5%	18.4%
A generic medicine is bioequivalent to a brand name medicine.	8	66	48	91	15
	3.5%	28.9%	21.1%	39.9%	6.6%

Source: Author compilation.

According to the analysis of the responses, it can be concluded that doctors have insufficient knowledge of generic medicines. However, there is no difference in knowledge of generic medicines among doctors serving at primary, secondary, and tertiary healthcare centers as results of Kruskal–Wallis test showed no statistical significant difference among doctors at different healthcare centers (primary, secondary, and tertiary), $H(225) = .087$, $p = .957$. No statistical significant difference in knowledge of generic medicines in male and female doctors was found, $H(225) = .582$, $p = .446$ and in different age groups, $H(225) = 10.276$, $p = .036$. However, statistical significant difference was found in different employment status (self-employed, govt. hospital, pvt. hospital) of doctors $H(225) = 10.643$, $p = .014$; with different levels of education (UG degree, PG diploma/degree, post-PG degree) in doctors, $H(225) = 9.781$, $p = .008$ and doctors having nonsurgical and surgical practice $H(225) = 5.611$, $p = .018$.

The findings of the study have similarity and contrast to another study that was conducted to explore awareness of generic drugs among doctors at a teaching hospital Gupta et al. (2018). Majority of the doctors in both the studies had agreed to intended interchangeability of brands with generic medicines and composition, dose, and indications of generics being sane as branded medicine. However, contra response was



Source: Author compilation.

Table 5 Spearman test results.

			Knowledge items	*Prescription of generic medicines*
Spearman's rho	Knowledge items	Correlation coefficient	1.000	.411**
		Sig. (two-tailed)		0.000
		N	227	227
	Prescription of generic medicines	Correlation coefficient	.411**	1.000
		Sig. (two-tailed)	0.000	
		N	227	228

**Correlation is significant at the 0.01 level (two-tailed).
Source: Author compilation.

observed in marketing of generics after patent expiry of innovator product wherein majority of the doctors in the present study had given a contra or neutral response indicating inadequate knowledge, also awareness of Jan-Aushadhi scheme in the present study was found to be low. Better awareness of generics in a tertiary care teaching hospital may be due to more focus on generics being a government medical college. However, due to inadequate knowledge, further effort is required on how interventions for doctors may grow awareness and acceptability of generic drugs.

The response, 89.9% of doctors being aware of Indian Medical Council guidelines to prescribe medicines by generic names, has been found to be higher as compared

with the response of 73.5% in another study on evaluation of knowledge, attitude, and practice for use of generic drugs at tertiary care hospital Kamejaliya et al. (2017) where the doctors were aware of regulations and law enforcement about generic prescription.

The finding of the present study was similar to another study to assess knowledge and attitudes of the doctors, pharmacists, and patients toward the use of generic medicines in Turkey Toklu et al. (2012) where it was found that the healthcare providers have inadequate knowledge of generic drugs.

There is some similarity between the study on customers' and physicians' opinions and experiences with generic substitution Heikkilä et al. (2006), in which it was found that doctors had knowledge that generics can be interchangeable with innovators, but about half of them believed that interchangeable medicines are less safe and effective compared with branded medications. The primary reason for generic substitution is to save money, and it is generally considered a good reform measure. Customers cited their positive experiences with previously used medicines as the main reason for refusing substitution. Wider acceptability of generics by customers is also vital of its increased usage.

With an aim to build confidence among doctors, pharmacists, and consumers, the government must promote awareness on the quality of generics Aivalli et al. (2018). In a study to assess the price and quality of brands and branded generics Singal et al. (2011), it was found unexpectedly that price difference for generics to patient was not high but margins to chemists were very high for branded generics, however, quality was found to be the same. The study highlights the need to change policy on drug pricing, control markups, conduct tests, and extensively advertise quality of generics.

Over 50% of the respondents either disagreed or remained neutral on bioequivalence of generic with the brand name medicine. The generic drug can considerably bring down the cost involved in the treatment as can be seen in Table 1 but without compromising efficacy and safety. The generic drug must prove to be bioequivalent with their branded counterparts for its acceptability for mass prescription by the medical practitioners.

In the present study, it has been found that the medical practitioners have sufficient knowledge of generic medicines as compared with brands in areas such composition, dose and indications, intended interchangeability, and awareness of government regulation. However, low patronage in prescribing medicines in generic names by medical practitioners may be due to insufficient knowledge of generics in areas such as therapeutically equivalence, limited awareness of Jan-Aushadhi scheme, and bioequivalence.

The study focuses on the subjects' responses and not their actual behavior while prescribing medicines and is limited to select district which may limit the extrapolation of findings to the entire country.

Conclusion

Knowledge of generic medicines in medical practitioners has an influence on generic medicines. Knowledge on areas such as awareness of guidelines given by MCI to

prescribe medicines in generic names, generics being same as brands/innovator medicine in composition, dose and indications, and interchangeability of branded/innovator medicines by generics has been found to be adequate. However, concerns remain in areas such as marketing of generics after patent expiry of innovator medicine, therapeutically equivalence, bioequivalence, and limited awareness of Jan-Aushadhi scheme. Low prescription of generic medicines can be explained by overall insufficient knowledge of generic medicines in doctors. Educational, regulatory, and marketing interventions to address the concerns are required.

Quality with a focus on bioequivalence of generics demonstrating quality at par with the branded medicines seems to be the way forward augmented with strengthening of regulatory environment and promotion.

Perspective of pharma companies in the marketing of generics is an area that needs to be looked into. In addition to manufacturing and distribution, brand management strategy and promotion to doctors have been an area of focus of many leading companies to obtain the prescription by its brand name. The strategy on brand management enables companies to differentiate products from others. The question arises, how a pharma company can differentiate products in generic names? In other words, how generics need to be promoted to doctors? Prescription in generic names will be filled by chemists who will like to dispense those identical products on which they can make more money and not necessarily the generic medicine being promoted of a particular companyBranded Generics (2018).

Holistic approach encompassing regulation, manufacturing, marketing, distribution, dispensation of generic medicines addressing the concerns of patients, medical practitioners, chemists, and pharma companies is required.

References

1. Aivalli, P. K., Elias, M. A., Pati, M. K., Bhanuprakash, S., Munegowda, C., Shroff, Z. C., and Srinivas, P. N. (2018). Perceptions of the quality of generic medicines: implications for trust in public services within the local health system in Tumkur, India. BMJ Glob. Health. 2:e00064.
2. Bachheti, M. and Saklani, A. (2013). What affects customer loyalty: trust, rewards, or relationship management? In: Proceedings of the 2013 Conference of Academy of Marketing (Cardiff).
3. Badwaik, R. T., Chopde, S. S., Mahajan, H. M., and Honrao, R. (2015). Prescriber's Views on Generic Medicines: A Study on Knowledge, Attitude and Practice. Journal of Contemporary Medicine and Dentistry 3(2):27–32
4. Bera, A. and Mukherjee, A. (2012). The importance of generic drugs in India. Int. J. Pharmaceut. Chem. Biol. Sci. 2(4):575–587.
5. Billa, G., Thakkar, K., Jaiswar, S., and Dhodi, D. (2014). A cross-sectional study to evaluate the awareness and attitudes of physicians towards reducing the cost of prescription drugs, Mumbai. Appl. Health Econ. Health Policy. 12(2):125–137.
6. Branded generics—acknowleding the wrinkles. Retrieved December 31, 2018, from https://www.livemint.com/Opinion/uCfPWtPGfJxFgpzPM5IMrN/Branded-generics-Acknowledging-the-wrinkles.html
7. Cameron, A., Mantel-Teeuwisse, A. K., Leufkens, H. G., and Laing, R. O. (2012). Switching from originator brand medicines to generic equivalents in selected developing countries: How much could be saved? Value Health. 15:664–673.

8. Chaturvedi, S. (2017). Generic drug prescription: possible issues, impacts and consequences. Pharma Tutor, 5(5):5–8.
9. Gupta, R., Malhotra, A., and Malhotra, P. (2018). A study on assessment of awareness on generic drugs among doctors in a tertiary care teaching hospital in north India. Int. J. Res. Med. Sci. 6(4):1362–1367.
10. *Drug information on generic medicines*. Retrieved December 31, 2018, from https://www.who.int/medicines/publications/druginformation/WHO_DI_303_GenericMedicines.pdf?ua=1
11. Fabiano, V., Mameli, C., Cattaneo, D., Delle, F. A., Preziosa, A., Mele, G., Clementi, E., and Zuccotti, G. V. (2012). Perceptions and patterns of use of generic drugs among Italian family pediatricians: first round results of a web survey. Health Policy. 104(3):247–252.
12. *FDA questions answers*. Retrieved December 31, 2018, from https://www.fda.gov/drugs/resourcesforyou/consumers/questionsanswers/ucm100100.htm
13. Gupta, S. K., Nayak, R. P., and Vidyarthi, S. K. (2015). A study on the knowledge, attitude, and practice of generic medicines among the doctors in a tertiary care teaching hospital in South India. Natl. J. Physiol. Pharm. Pharmacol. 5:39–44.
14. Hassali, M. A., Wong, Z. Y., Alrasheedy, A. A., Saleem, F., Mohamad Yahaya, A. H., and Aljadhey, H. (2014). Does educational intervention improve doctors' knowledge and perceptions of generic medicines and their generic prescribing rate? A study from Malaysia. SAGE Open Med. 2:1–8.
15. Heikkilä, R., Mäntyselkä, P., Hartikainen-Herranen, K., and Ahonen, R. (2007). Customers' and physicians' opinions of and experiences with generic substitution during the first year in Finland. Health Policy. 82(3):366–374.
16. Hoshi, S. and Kimura, H. (2008). Questionnaire on the awareness of generic drugs among outpatients and medical staff. Drug Discov. Therapeut. 2(3):194–199.
17. *Indian demographic profile 2018*. Retrieved January 01, 2019, from https://www.indexmundi.com/india/demographics_profile.html. India Demographics Profile 2018
18. James, P. B., Bah, A. J., Margao, E. K., Hanson, C., Kabba, J. A., and Jamshed, S. Q. (2018). Exploring the knowledge and perception of generic medicines among final year undergraduate medical, pharmacy, and nursing students in Sierra Leone: a comparative cross-sectional approach. Pharm. (Basel). 6(1): 1–12.
19. Kamejaliya, D. Z., Kapadia, J. D., Desai, C. K., and Desai, M. K. (2017). Knowledge, attitude and practice of resident doctors for use of generic medicines at a tertiary care hospital. J. Young Pharm. 9(2):263–266.
20. Singal, G. L., Nanda, A., and Kotwani, A (2011). A comparative evaluation of price and quality of some branded versus branded—generic medicines of the same manufacturer in India. Ind. J. Pharmacol. 43(2):131–136.
21. Singh, K. R., Phatak, A. M., and Sathe, M. A. (2016). Beliefs and attitudes of generic versus original drugs among doctors in a tertiary-care hospital in Western India. Natl. J. Physiol. Pharm. Pharmacol. 6(4):276–281.
22. Toklu, H. Z., Dulger, G. A., Hidiroglu, S., Akici, A., Yetim, A., Gannemoglu, H. M., and Gunes, H. (2012). Knowledge and attitudes of the pharmacists, prescribers and patients towards generic drug use in Istanbul, Turkey. Pharm. Pract. (Granada). 25(35):36–45.
23. Trends in catastrophic health expenditure in India. Retrieved December 31, 2018, from https://www.who.int/bulletin/volumes/96/1/17-191759/en/ Trends in catastrophic health expenditure in India: 1993 to 2014.

Appendix E

Certificate of Paper Presentations

Certificate
of Participation

This certificate is presented to

Sunil Madan

for presenting paper titled

Influence of Medical Practioners' attitude on the prescription behavior for generic medicines.

in **National Conference on Management in the VUCA World,** organised on **11 & 12 Decemeber, 2021** by **Department of Management Studies,** Graphic Era Deemed to be University, Dehradun.

Dean Management, Department of Management Studies

Head of the Department Department of Management Studies

Convener, National Conference on Management in the VUCA World

Graphic Era
Deemed to be University
DEHRADUN

V U C A

MDI Management Development Institute
MURSHIDABAD

2nd International Conference on Changing Business Paradigm, (ICCBP-2022)
(Theme- Rethinking Business Agility during Uncertainty)

21st - 23rd January, 2022

CERTIFICATE OF PARTICIPATION

This is to certify that **Sunil Madan**

of Ph.D. Research Scholar, Himalayan School of Management Studies, Swami Rama Himalayan University, Jolly Grant, Dehradun

has contributed & presented a paper entitled Influence of Medical Practioners' knowledge on the prescription behavior for generic medicines

in ICCBP 2022 organized by Management Development Institute Murshidabad, West Bengal, India.

Prof. (Dr.) Biranchi Narayan Swar
Dean-Continuing Education
Conference Chair

Dr. Neeraj Singhal
Assistant Professor
Conference Chair

Prof. (Dr) Atmanand
Director
Patron
DEBASIS GUPTA

MDI Management Development Institute
MURSHIDABAD

2nd International Conference on Changing Business Paradigm, (ICCBP-2022)
(Theme- Rethinking Business Agility during Uncertainty)

21st - 23rd January, 2022

CERTIFICATE OF BEST PAPER

This is to certify that **Sunil Madan**

of Ph.D. Research Scholar, Himalayan School of Management Studies, Swami Rama Himalayan University, Jolly Grant, Dehradun has presented a paper entitled Influence of Medical Practioners' knowledge on the prescription behavior for generic medicines

in ICCBP 2022 organized by Management Development Institute Murshidabad, West Bengal, India and adjudged as the Best Paper in the Track Marketing

Prof. (Dr.) Biranchi Narayan Swar
Dean-Continuing Education
Conference Chair

Dr. Neeraj Singhal
Assistant Professor
Conference Chair

Prof. (Dr) Atmanand
Director
Patron

DEBASIS GUPTA

MDI Management Development Institute
MURSHIDABAD

3rd International Conference On Changing Business Paradigm, (ICCBP-2023)

Theme: Reinventing Management Through Sustainability, Innovation And Analytics.

05th - 07th January, 2023 In Online Mode

CERTIFICATE OF PARTICIPATION

This is to certify that **Sunil Madan**

of Ph.D. Research Scholar, Himalayan School of Management Studies, Swami Rama Himalayan University, Jolly Grant Swami Ram Nagar, Dehradun 248016, India *has contributed and presented a paper entitled* Influence of medical practioners' practice on the prescription behavior for generic medicines

in ICCBP 2023 organized by Management Development Institute Murshidabad, West Bengal, India.

DEBASIS GUPTA

Prof. (Dr.) Biranchi Narayan Swar	*Prof. (Dr) Atmanand*	*Dr. Neeraj Singhal*
Dean-Continuing Education	Director	Assistant Professor
Conference Chair	Parton	Conference Chair