

Impact of Physician Personality Traits on Drug PrescriptionBehaviour

Authors: Dr. Viswanath BANDI*, Dr. Subrata Kumar Dey**, Dr. Rao O R S ***

**Associate Professor, Koneru Lakshmaiah Education Foundation, Hyderabad, India. (ORCID ID; 0000-0001-7622-2708)

** Associate Professor, Department of Management and Science, Arka Jain University, Jamshedpur, India.

*** Member, Board of Governors, ICFAI University, Jharkhand, India. (ORCID ID; 0000-0002-8214-7078)

Address for correspondence: Dr. Viswanath Bandi, Associate Professor-Marketing, KLU GBS,

JubileeGarden Road-2, Kondapur, Hyderabad., email: viswanathbandi1391977@gmail.com

KEYWORDS

Physician, Prescribing behaviour; Personality traits.

ABSTRACT

Purpose: Our research investigated how physicians' personality traits influence and interplay with other factors guiding their prescribing and medical decisions in a branded generics market like India.

Design/methodology/approach:Our research is based on a conceptual framework and survey questionnaire developed from an extensive literature review on independent variables. Along with the other independent variables like Physician's professional factors, Product-related factors, and product promotion factors, for physician's personality traits as a factor, the survey questionnaire was integrated with HOGAN's MVPI Questions, which were exposed to 171 respiratory physicians for recording their responses. Statistical methods or tools like descriptive personality, and inferential statistics from the latest SPSS 21 version have been employed

Findings: Our findings showed that respiratory physician's product prescribing decisions were significantly influenced by their specific personality traits such as Altruistic traits, Security traits, and Commerce traits apart from other factors such as Physician's professional and pharmaceuticalProduct-related factors.

Practical implications: The findings highlight the critical necessity for a thorough recording of physicians' prescribing practices, which are significantly influenced by their distinct personality traits. Healthcare authorities must prioritize the regular assessment of physicians' psychological wellbeing and overall health. This proactive approach enables physicians to promptly address any health issues in cases of burnout, thereby ensuring the continuous delivery of high-quality patient care. With the government making it, mandatory for all pharmaceutical organizations to follow the uniform product promotion code (UPPC) while promoting products to physicians, marketers need to strategically allocate optimal resources and outreach efforts with tailor-made marketing mix elements that are aligned with the preferences and personality traits of physicians, aimed towards enhancing their clinical knowledge, followed by the development of continuous patient initiatives aiming to improve their awareness, can lead to the development of belief with two-way communication among them leading to better treatment adherence and compliance from patients end. Such dedicated efforts initiated by the marketers, in the long term cancultivate trust and empathy between physicians and patients, laying the robust groundwork for patient-centered disease management. This can enable the development of goodwill or a better perception of pharmaceutical organizational promotional efforts by physicians, which is one of the aims of getting physician's prescriptions for the promoted product.

Paper type: Research Paper

Introduction:

(Tanya M.,2010: Ganesh PP et al.,2014) research has indicated that a physician's prescription decision is complex and multifactorial, involving various stakeholders across the value chain. In this segment, physicians act as an intermediary while prioritizing treatment options that best aid patient recovery and contribute to pharmaceutical organisations' marketing efforts by prescribing brands, they trust for optimal patient outcomes. This entire process highlights the crucial role of trust among physicians and patients, influenced by various factors, and firmly establishes the effectiveness of prescribed treatment regimes. (Hossain MM et al., 2013) Highlighted physicians' crucial role in crafting effective medication plans with the help of a medical tool called prescription (Rx),representing a detailed healthcare roadmap aimed at patient recovery. This prompts pharmaceutical companies to utilize advanced marketing tools



and tactics for their branded generics promotion, impacting physicians' prescription decisions and thus shaping patient care.

Literature Review: (Brezis M et al., 2008) Research emphasized the unique personalities of Israeli physicians and their diverse responses to personal selling factors, revealing a significant correlation between the individual characteristics of physicians and their prescription behaviors. Indeed (Sharma GP et al., 2015) from the Indian experience, asserted that a prescription transcends as an important document, serving as a reflection of various individual characteristics of the physician, such as orientation, attitude, and personality. Thorough research on physicians' prescribing behaviour by (Lemaire et al., 2014: Shah SM et al., 2016), (Majid et al., 2018), and (Kaliswal N et al., 2013) aimed to determine the intricate determinants shaping prescribing decisions, spanning professional variables such as workplace environment, to product-related factors including drug pricing and product promotional tactics, as well as demographic attributes and the nuanced interplay of physicians' personalities in delivering high-quality patient care while ensuring their well-being and professional satisfaction.

One of the landmark studies (Ibrahim A et al., 2013) showed a noteworthy positive influence of physicians' personality attributes, like helpfulness, reliability, and task orientation, on the prescribing behaviour of Jordanian healthcare professionals. This impact was observed in line with other external determinants, including product promotion and various professional factors. (Ahmed RR et al., 2020) highlighted the significant influence of individual physician personalities on behavior, advocating for comprehensive personality assessments, particularly using Hogan MVPI, as this tool covers thought processes, tendencies, stress, and tension, offering insights into motivational attributes guiding their behavior. The authors stressed the importance of evaluating healthcare professionals' personalities to inform clinical decisions. (Viswanath et al, 2020) review stated that Physician's Personality and its Impact on stress, depression, well-being and empathy at work, medical education, patient centricity, and Patient confidence were studied across the world. In addition to this, researchers have extensively examined factors influencing physician prescribing behaviour, spanning various countries including the US, UK, Canada, Malaysia, Pakistan, Nigeria, Saudi Arabia, Jordan, Iran, Greece, and Cyprus.

Despite extensive research on factors influencing physician prescribing behaviour, there remains a significant gap regarding the impact of a physician's personality. Existing studies primarily focus on external factors and the quality and psychological attributes of medical representatives. This highlights a notable deficiency in understanding physicians' core values and motives shaping their prescription decisions.

This emphasizes the need for comprehensive studies exploring physicians' personalities, as this understanding not only elucidates motivations and well-being but also establishes a robust foundation for two-way communication in the physician-patient relationship, facilitating improvement with better patient care externally on one end and with the satisfaction of employed interventions internally on the other end by physicians, signifying a transformative shift from disease management to a patient-centric healthcare approach. The collective findings imply the uniqueness of each physician and highlight the importance of



recognising and accommodating individual differences in healthcare strategies and decision-making processes.

A conceptual framework based on literature Review:Prior research predominantly focused on external factors influencing physicians' prescription decisions, with less focus on physicians themselves. However, recognizing the unique nature of each physician, their personality traits yield significant influence on prescribing behavior. These traits, along with product characteristics, Product promotion efforts, and professional considerations, shape prescription practices. Addressing this gap necessitates a comprehensive understanding of their interplay and impact, thereby enhancing our comprehension of how physicians select a specific brand from the numerous alternatives available on the market.

Based on the literature review and the identified gap, a comprehensive framework model has been proposed that includes the integration of all the identified factors for undertaking precise analysis as represented in Figure 1

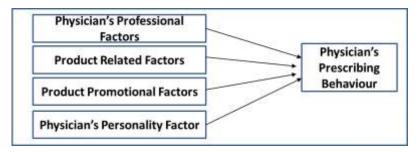


Figure-1 Conceptual Model Framework

This research aims to demonstrate the impact of physicians' personality traits on their prescribing decisions as per the proposed framework. For assessing the physician's personality traits, the questionnaire representing other three factors was integrated with a valid personality instrument, HOGAN's MVPI (Motivations, Values, Preferences Inventory), consisting of 10 scales representing personality dimensions comprising altruism, affiliation, aesthetics, commerce, hedonism, power, recognition, science, security, and tradition.

For over 80 years, these personality traits have been central in motivation literature, serving as the primary tool for directly assessing the values that drive individuals. These findings hold considerable importance, influencing various aspects such as physicians' responsiveness to tailored marketing strategies, leading to efficient resource allocation by marketers, and ultimately contributing to enhanced patient access to affordable care. The objective is to promote physicians' adoption of cost-effective therapeutic interventions, thus advancing disease management toward a patient-centric model.

<u>Hypothesis Formulation.</u> The proposed study will test the following hypotheses. The base premise of these hypotheses is to understand and analyze the factors influencing the prescription behaviour of medicines by respiratory physicians(comprising ENT and Pulmonology) in and around the Hyderabad region by taking anti-allergic drugs as an example.

Hypothesis Formation for Physician's Personality Factors:

- $H3.1_0$ = There is no influence of the Physician's Personality trait factor on Physician's prescribing behaviour.
- H3.1a = There is an influence of the Physician's Personality trait factor on Physician's prescribing behaviour.



Research Methodology: our research study is based on exploratory quantitative research, based on a survey questionnaire derived from literature research consisting of two parts. Part 1 consists of Hogan's MVPI Questionnaire with 200 statements representing 10 personality traits eachwith 20 statements on a 3-point Likert scale. Part 2 statements represent to correspond to the three otherfactors. The sample size was determined from the universe of 347 respiratory physicians in Telangana (one of the states in India) as of March 31, 2017, comprising 184 ENT and 163 chest physicians, registered with IAOHN and ICS. The sample size of 171 physicians was determined as per Kothari's (2004) et al.Data was collected through a researcher-administered questionnaire using the Likert scale, ensuring clarity and simplicity for all respondents. Statistical analysis was conducted employing appropriate tools and techniques, crucial for elucidating the relationships between variables and achieving the study's objectives (Cooley, 1978). This research utilized descriptive and inferential statistics, employing SPSS (21st version), to examine factors influencing physicians' prescription behaviour. Our data analysis comprised two pivotal steps:

Step 1: Independently analyze personality traits and other factors against the dependent variable for dimension reduction.

Step 2: Aggregate components of personality traits and other factors, subjecting them to further descriptive and inferential analysis, including model testing and regression, to determine their significance in explaining prescribing decisions.

Results and Discussion:

<u>Internal Consistency and Reliability:</u> As shown below in Table2, Cronbach's alpha coefficient of physicians' personality traits for their internal consistency has been demonstrated.

Personality Trait	Aesthetics	Affiliation	Altruistic	Commerce	Hedonism	Power	Recognition	Science	Security	Tradition	Overall
Cronbach alpha	0.84	0.61	0.57	0.75	0.65	0.64	0.81	0.67	0.70	0.54	0.93

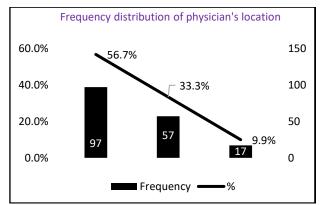
(Table 2: Cronbach alpha for physician's personality trait components)

Demographics Analysis:

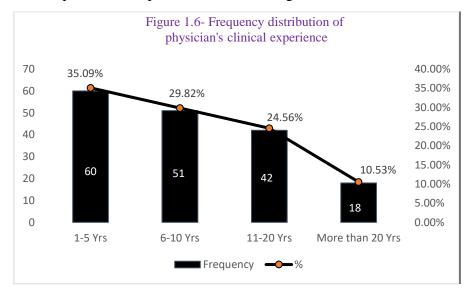
Physician Respondent Profile: Figure 1 illustrates those 97 physicians (56.73%) hail from metropolitan areas, followed by 57 physicians (33.34%) from extra-urban areas, and the remaining 17 physicians (10%) from rural locales.

Figure 1 Frequency distribution of Physician's location of respondents, N = 171



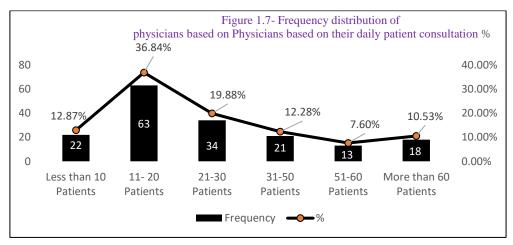


Physician's clinical experience: The demographic profile of the physician respondents based on clinical experience is represented in below Figure 1.6.



Physician Experience Distribution: The sample revealed that 60 physicians (approximately 35%) had 1–5 years of experience, followed by 29.8% with 6–10 years, 24.56% with 11–20 years, and around 10% with over 20 years of experience, reflecting a diverse range of experience levels among physicians.

<u>Physician's Practice set-up:</u> Physician Practice Settings: Out of the sample, 66 physicians (38.6%) operate clinics, followed by 37 (21%) in government hospitals, and 68 (39.8%) in private or corporate hospitals, as illustrated in Figure 1.7.





<u>Step-1: Analysis of Physician's Personality trait factors constituting HOGAN's MVPI: Aesthetics Personality Trait:</u>

Kaiser-Meyer-Olkin (KMO) Test KMO is a standard test conducted to estimate the adequacy of each variable and to test the variance proportion among variables, whose values range from 0 to 1, as shown in Table 2

Table 2 KMO and Bartlett's Test (Aesthetics)

Kaiser-Meyer-Olkin Measure of S	ampling Adequacy	0.815
	Approx. Chi-Square	1052.04
Bartlett's Test of Sphericity	df Sig.	190 .0000

As shown in the table, the value of KMO is 0.815, and in Bartlett's test of sphericity, the value of significance is less than 0.05, confirming that the variables under consideration are significantly correlated and could be treated as adequate to take forward with factor analysis, which could further be applied to the collected data as represented in Table 2.1.

Table 2-1- Total variance explained (Aesthetics): Factor Analysis

Rescaled	Extraction Sum; of Squared Loadings		Rotation Sums of Squared	Loadings
Component	Cumulative %	Total	% Variance	Cumulative %
1	28.688	3.441	17.204	17.204
2	36.991	2.716	13.578	30.782
3	44.76	1.888	9.438	40.22
4	50.751	1.605	8.023	48.243
5	56.095	1.357	6.785	55.028
6	61.013	1.197	5.985	61.013

Extraction Method: PrincipleComponent Analysis

Interpretation: The above table clearly showed that six factors were extracted, comprising aesthetic traits of physician personality, all together explaining 61% of the total characteristics related to aesthetic traits as represented in the below Table 2.2.

Table-2-2 Rotated Component Matrix ^a (Aesthetics)

	Tuest = 2 Itelates compensation				(1 10 5 611 0 6						
1		2		3		4	4				6
S	L	S	L	S	L	S	L	S	L	S	L
V177	.768	V227	.469	V34	.885	V98	.785	V90	.732	V46	.790
V218	.719	V86	.759	V58	.752	V128	.737	V149	.449	V197	429
V62	.659	V101	.739								
V176	.649	V144	.569								
V209	.565	V204	.529								
V227	.510	V163	.479								
V206	.453	V197	.405								
V204	.417										

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 6 iterations.

A study of the correlation was performed, which showed the relationship between the physician's aesthetic personality trait component factors influencing the physician's



prescribing behaviour, the result of which is shown in the below table.2.3 contains the Correlation matrix for Physician's Aesthetic Personality trait factors

	28	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
28	•	0.395	0.07	0.173	0.065	0.455	0.497
Factor1	0.395		0.5	0.5	0.5	0.5	0.5
Factor2	0.07	0.5		0.5	0.5	0.5	0.5
Factor3	0.173	0.5	0.5		0.5	0.5	0.5
Factor4	0.065	0.5	0.5	0.5		0.5	0.5
Factor5	0.455	0.5	0.5	0.5	0.5		0.5
Factor6	0.497	0.5	0.5	0.5	0.5	0.5	

The result showed a positive correlation between Physician's Aesthetic factors affecting their prescribing behaviour at a 95% confidence level and a 0.05 significance level.

Table- 8 Regression Analysis for Physician's Aesthetic Personality trait component factors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
7	.000 ^g	.000	.000	.761

According to above Table 2.4, the value of R squared and R was found to be 0.00, meaning that the variation in the prescribing behaviour of physicians is not being impacted by their aesthetic personality traits.

This can be attributed mainly to their nature of working hard in their daily routine spanning long working hours, tight schedules lead to a paucity of time allocating to themselves for working towards improving or spending time on their interests like music, art, and other traits constituting aesthetics, which often leads emotional, low on accomplishment and depersonalization as shown in previous research conducted by (Roger C et al, 2012).

Table-2.5 ANOVA Test for Coefficient for

Physician's Aesthetic Personality trait component factors

Model	Unstandardized c	oefficients	Unstandardized coefficients		
	В	Std Error	Beta	t	Sig
7 (Constant)	4.45	0.058		76.52	0

a. Dependent Variable 28

As shown in the above analysis in the form of Table 2.5, the significance and the model that best explain physicians' aesthetic personality traits in their prescribing behaviour were assessed at a 95% confidence interval or 5% level of the significance level chosen for the study. Thus, the p-value should be less than 0.05. In the above table, it is 000. Therefore, the result is significant.

Conclusion of the Impact of a Physician's Aesthetic Personality Trait: From the above analysis, a physician's aesthetic personality trait exhibited a weak correlation with a significant model consisting only of the dependent variable.



We conclude that the aesthetic trait of a physician's personality does not influence their prescribing behaviour and will not be part of the aggregate analysis.

"Our analysis systematically examined all personality traits in sequence to pinpoint the key components influencing physicians' prescribing decisions. Table 10 provides a concise summary of these findings and outlines our next steps."

Table 2.6: Impact of Physicians' personality Traits on their prescribing behavior

Parameter	Aesthetics	Affiliation	Altruistic	Commerce	Hedonism	Power	Recognition	Science	Security	Tradition
кмо	0.815	0.622	0.597	0.768	0.585	0.554	0.78	0.584	0.645	0.603
Total factors	6	7	8	5	8	7	7	8	7	8
Varience exlained	61%	56%	59%	51%	61%	60%	60%	61%	60%	65%
Model No	7	4	6	4	1	6	7	8	5	8
Significant	Yes	Yes	yes	Yes	Yes	yes	yes	yes	yes	yes
Factor Components	0	7	7	6	8	10	8	9	10	2
Positive effect	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Step-1: Summary of Analysis of Physician's Personality trait factors constituting HOGAN's MVPI: Preliminary research has shown that except for the aesthetic personality trait, all the remaining traits, like affiliation, altruism, commerce, hedonism, power, recognition, science, security, and tradition, have shown an impact on physician's prescription decision-making processes.

Implications of Individual Factors Analysis: From the above analysis, it has been shown that the following factors are influencing the prescription behaviour of the respiratory physicians who participated in this research study, as shown in Table 3.

Factors Under Investigation along with the No of components	Influencing Components Significantly	Not- Influencing Significantly		
Physician's Professional factors	YES (3)			
Pharmaceutical Promotion factors	YES (2)			
Product related factors	YES (3)			
Physician's Personality	Affiliation-9, Altruistic-3, Commerce-9, Hedonism-8, Power-5, Recognition-5, science-2, Security-5, Tradition-2.	Aesthetics		

Step 2: Analysis with aggregate factors for Hypothesis and Model Testing: "To test our hypotheses, we condensed individual influencing factors into aggregate factors for all personality traits and external variables. We then utilized descriptive statistics, multiple regression (ANOVA), and t-tests for model testing and hypothesis validation."

<u>Descriptive Statistics:</u> Table 4 presents descriptive data for all aggregate variables, including the mean of each question and an overall mean of 2.90. This indicates that responses generally lean towards "agree" and "strongly agree. "Table4, shows the descriptive data of all the aggregate variables, the mean of each question, and the mean of all questions (2.90) in other words frequency of the answers is more towards agree and strongly agree.

E	actor	DV28	9	3	9	8	5	5	2	5	2
1.0	actor		Affiliation	Altruistic	Commerce	Hedonism	Power	Recognition	Science	Security	Tradition



Mean	4.4503	2.58	2.419	1.980	2.2	2.53	2.357	2.70	2.357	2.473
SD	0.7605	0.344	0.456	0.451	0.365	0.333	0.476	0.462	0.472	0.589

Table 4: Descriptive statatics

Regression Analysis: Table 5 shows the coefficient determinants for R, R^2 , and R^2 - Adj. In Model 1, R is 0.701, indicating a significant relationship between the variables. The R^2 value of 0.491 reveals that 49.1% of the variance in physician prescription behavior is explained by the independent variables, including the physician's personality, professional factors, pharmaceutical product attributes, and promotional influences. "The model exhibits a substantial effect size, aligning with Cohen's guidelines for interpreting effect sizes in social/behavioral sciences (Cohen, 1992; Cohen, 1988).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.701	.49	.452	.56288

Residual Statistics: testing the significance of each one of the physician's personality traits as shown in the below Table6

		Unstan	dardized	Standardized		
	Model	Coefi	ficients	Coefficients	t	Sig.
	В	Std. Error	Beta			
	(Constant)	1.195	.622		1.922	.056
	9Affiliation	.228	.150	.104	1.523	.130
	3Altruistic	222	.108	133	-2.048	.042
	9Commerce	254	.115	151	-2.206	.029
1	8Hedonism	037	.146	018	254	.800
1	5Power	.244	.140	.107	1.746	.083
	5Recognition	.113	.109	.071	1.035	.302
	2Science	.117	.105	.071	1.114	.267
	5Security	257	.113	160	-2.270	.025
	2Tradition	.028	.079	.022	.354	.724

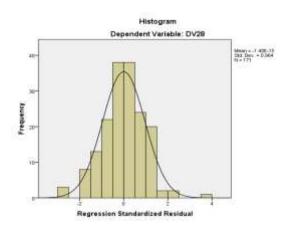
Tal Res sta

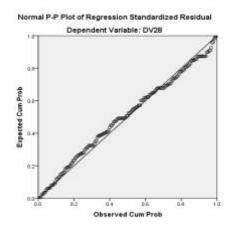
Tab 8: Res ion Equ

Below Table 6,7,8represents the residual statistics from the regression equation. In this section, residual statistics indicate that all the components are normal with standard variance

	Minimum	Maximum	Mean	Std.
				Deviation
Impact of F	hysician Personality T	raits on Drug Prescr	iptionBehaviou	r
SEEJPHVo	lume XXV S1, 2024, IS	SN: 2197-5248;Post	ed:05-11-2024	
Predicted Value	1.9662	5.3603	4.4503	.53285
Std. Predicted Value	-4.662	1.708	.000	1.000
Residual	-1.66896	2.24291	.00000	.54265
Std. Residual	-2.965	3.985	.000	.964

The following charts and histogram show that these conditions are confirmed on residuals. As indicated from the below charts (figure 5 and 6) residual values demonstrate normal distribution.





1 Hypothesis-4 (Physician's Personality Factor- Affiliation):

- 1.1_0 = There is no influence of the Physician's Personality trait called Affiliation on Physician's prescribing behaviour.
- 1.1a = There is an influence of the Physician's Personality trait called Affiliation on Physician's prescribing behaviour

P (Significance Value) = 0.130 is more than 0.05

		ndardized fficients	Standardized Coefficients	t	Sig.
	В	Std. Error	Beta		
(Constant)	1.195	.622		1.922	.056
1 9Affiliation	.228	.150	.104	1.523	.130

Failed to reject the Null Hypothesis to accept the same

2 Hypothesis (Physician's Personality Factor- Altruistic):

- 2.1_0 = There is no influence of the Physician's Personality trait called Altruistic on the Physician's prescribing behaviour.
- 2.1a = There is an influence of the physician's Personality trait called the Altruistic trait on the Physician's prescribing behaviour



Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	В	Std. Error	Beta		,	
	(Constant)	1.195	.622		1.922	.056
1	3Altruistic	222	.108	133	-2.048	.042

P (Significance Value) =0.042 is less than 0.05

Rejected the Null Hypothesis to accept the Alternative Hypothesis

3 Hypothesis (Physician's Personality Factor- Commerce):

- 3.1_0 = There is no influence of the Physician's Personality trait called commerce on the Physician's prescribing behaviour.
- 3.1a = There is the influence of Physician's Personality trait called Commerce on the Physician's prescribing behaviour

Model		ndardized fficients	Standardized Coefficients t		Sig.
	В	Std. Error	Beta		,
(Constant)	1.195	.622		1.922	.056
1 9Commerce	254	.115	151	-2.206	.029

P (Significance Value) =0.083 is more than 0.05

Failed to reject the Null Hypothesis to accept the same

4 Hypothesis (Physician's Personality Factor- Hedonism):

- 4.1_0 = There is no influence of Physician's Personality trait called Hedonism on Physician's prescribing behaviour.
- 4.1a = There is an influence of Physician's Personality trait called Hedonism on Physician's prescribing behaviour

P (Significance Value) =0.800 is more than 0.05

Model		ndardized fficients	Standardized Coefficients	t	Sig.	
	В	Std. Error	Beta			
(Constant)	1.195	.622		1.922	.056	
1 8Hedonism	037	.146	018	254	.800	

Failed to reject the Null Hypothesis to accept the same

5 Hypothesis- (Physician's Personality Factor- Power):

- 5.1_0 Hypothesis = There is no influence of the Physician's Personality trait called Power on the Physician's prescribing behaviour.
- 5.1a = There is an influence of a Physician's Personality trait called Power on the physician's prescribing behaviour.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
			Std. Error	Beta		•	
(Constant)	1.1	95	.622		1.922	.056	
1 5Power	.2	44	.140	.107	1.746	.083	

P (Significance Value) =0.083 is more than 0.05



Failed to reject the Null Hypothesis

6 Hypothesis (Physician's Personality Factor- Recognition):

 6.1_0 = There is no influence of a Physician's Personality trait called Recognition on physician prescribing behaviour.

6.1a = There is an influence of the Physician's Personality trait called Recognition on physicians prescribing behaviour

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	В	Std. Error	Beta		
(Constant)	1.195	.622		1.922	.056
1 5Recognition	.113	.109	.071	1.035	.302

P (Significance Value) =0.302 is more than 0.05

Failed to reject the Null Hypothesis

7 Hypothesis-10 (Physician's Personality Factor- Science):

 7.1_0 = There is no influence of the Physician's Personality trait called Scienceon physicians prescribing behaviour.

7.1a = There is an influence of a Physician's Personality trait called Science on the Physician's on physicians prescribing behaviour.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		В	Std. Error	Beta		
	(Constant)	1.195	.622		1.922	.056
1	2Science	.117	.105	.071	1.114	.267

P (Significance Value) =0.267 is more than 0.05

Failed to reject the Null Hypothesis

8 Hypothesis (Physician's Personality Factor- Security):

 8.1_0 = There is no influence of the Physician's Personality trait called Security on Physician's prescribing behaviour.

8.1a = There is an influence of the Physician's Personality trait called Security on Physician's prescribing behaviour

Model		ndardized efficients	Standardized Coefficients	t	Sig.
	В	Std. Error	Beta		
(Constant)	1.195	.622		1.922	.056
1 5Security	257	.113	160	-2.270	.025

P (Significance Value) =0.025 is less than 0.05

Rejected the Null Hypothesis to accept the Alternative Hypothesis

9 Hypothesis-12 (Physician's Personality Factor- Tradition):

 9.1_0 = There is no influence of the Physician's Personality trait called Tradition on Physician's prescribing behaviour.

9.1a = There is an influence of the Physician's Personality trait called Tradition on physicians prescribing behaviour



Model		ndardized efficients	Standardized Coefficients	t	Sig.
	В	Std. Error	Beta		_
(Constant)	1.195	.622		1.922	.056
1 2Tradition	.028	.079	.022	.354	.724

<u>P (Significance Value)</u> =0.724 is more than 0.05 Failed to reject the Null Hypothesis.

Summary of Research Findings: Our conceptual model accounts for 49.1% of the variance in prescription behavior, aligning with Cohen's (1988) guidelines for effect size. Physicians embody a multifaceted persona, integrating altruism, commerce, and professional security. Their commitment to patient welfare fosters trusts and positive referrals, enhancing their impact globally. Balancing altruism with financial prudence, they navigate healthcare's commercial aspects while upholding ethical standards. Additionally, their pursuit of financial stability and social recognition drives strategic career decisions. This comprehensive understanding underscores the complexity of modern medical practice, emphasizing physicians' crucial role as stewards of health in society.

Conclusions: This study advances our understanding of the complex factors influencing physicians' prescribing decisions, revealing that personality traits significantly impact these behaviors. Unlike previous research focusing solely on external stimuli, this work highlights the intrinsic diversity among physicians. Our findings underscore the importance of personality in shaping medical decision-making apart from guiding their good health, particularly among specialists managing chronic conditions. By providing a novel framework, our research paves the way for future studies to explore these uncharted dynamics further. Our research indicates conforming to guidelines for ethical promotional practices, aiming to enhance patient care with physician's health and thereby improving overall healthcare standards.

Limitations of the research:Our study explored how respiratory specialists in and around Hyderabad manage chronic conditions like asthma and allergic rhinitis. We focused on their prescribing behavior for oral antiallergic drugs (fexofenadine or levocetirizine) combined with montelukast, aiming to understand their prescription dynamics.

Key Points:

- Participants included 171 respiratory physicians of both genders from diverse practice settings: private clinics, government hospitals, medical colleges, corporate hospitals, and private medical colleges.
- Their responses provided valuable insights into prescribing behaviors in respiratory medicine.

Scope of further Research:Our study evaluated the impact of various factors on the prescribing behavior of respiratory specialists. Based on our findings, we suggest several future research directions:

1. **Chronic vs. Acute Treatment**: Comparing the prescribing habits of physicians managing chronic conditions with those treating acute illnesses could validate our model and provide a broader understanding of prescribing behaviors.



- 2. **Geographical Variance**: Expanding research to other regions, such as state capitals or Tier 1 cities, would reveal regional differences in prescribing habits, enhancing our model with diverse insights.
- 3. **Subconscious Influences**: Investigating the subconscious factors influencing prescribing decisions, possibly through neuroeconomic studies by pharmaceutical organizations, would offer a deeper understanding of the cognitive elements involved.

Exploring these areas will refine our understanding of prescribing behavior and aid in developing comprehensive models of physician decision-making.

Acknowledgments: Sincere thanks to Hogans System, USA for allowing me to use their inventory model.

Funding: None

References:

- 1) Abulhaj, E., ELSamen, A. A., & Alabbadi, I. (2013). Investigating the factors affecting doctor's prescribing behavior in Jordan: Antihypertensive drugs as an example. European Journal of Social Sciences, 38(3), 380-391.
- 2) Aldin Sharifnia, S. H., Mohammadzadeh, M., Arzani, G., Salamzadeh, J., Abolfazli, S. A., Zali, A., &Khoshdel, A. R. (2018). Main factors affecting physicians' prescribing decisions: The Iranian experience. Iranian journal of pharmaceutical research: IJPR, 17(3), 1105.
- 3) Al Shamsi, H. S., Al Kabbani, T. S., Almutairi, A. G.et al. (2019). Factors Influencing Prescribing Decisions Among Primary Health Care Physicians in Al-Buraimi Governorate, Oman. Mashrafi, S.S. Global Journal of Health Science, 11(4), 1–12.
- 4) Alvanzo H, A. H., Cohen, G. M., &Nettleman, M. (2003). Changing physician behavior: Half-empty or half-full? Clinical Governance: An International Journal, 8(1), 69–78.
- 5) Ananya, O. C. (2018). To Study the influence of a Physician's personality type on the perception of the patient: JMSCR, 6, 4, 753–764.
- 6) Avituv-Frenkel, E., Israeli, D., Gold, A., Serfaty, D., Strous, D., &R. A. E. L. (2020). Minor gifts from pharmaceutical companies to doctors: A comparison between psychiatry and general medicine. Indian Journal of Medical Ethics, 5(2).
- 7) Bandi, V., & Prof.Rao, O. (2019). Factors Influencing Drug Prescription Behavior of Physicians in India. Pharmaceutical Reviews, 7, 57–62
- 8) Bandi, V., & Rao, O. R. S. (2020). INTERNATIONAL JOURNAL OF RESEARCH IN PHARMACEUTICAL SCIENCES.
- 9) Biswas, K., &Ferdousy, U. K. (2016). Influence of pharmaceutical marketing on prescription behavior of physicians: A cross-sectional study in Bangladesh. Journal of Accounting and Marketing, 5(2), 1–4.
- 10) Brandl, K., Mudambi, R., &Scalera, V. G. (2015). The spectacular rise of the Indian pharmaceutical industry. Entrepreneur and innovation exchange.
- 11) Buusman, A., Andersen, M., Merrild, C., &Elverdam, B. (2007). Factors influencing GPs' choice between drugs in a therapeutic drug group. A qualitative study. Scandinavian Journal of Primary Health Care, 25(4), 208–213.



- 12) Davari, M., Khorasani, E., & Tigabu, B. M. (2018). Factors influencing prescribing decisions of physicians: A review. Ethiopian Journal of Health Sciences, 28(6), 795–804.
- 13) Devi, P. U. M., Rao, B. S., & Shekhar, B. R. (2017). Service Quality in the pharmaceutical supply chain: A case study concerning a major Indian pharmaceutical company. *International Journal of Services Sciences*, 6(2), 147–161.
- 14) Dickov, V., Mitrovic, D., &Kuzman, B. (2011). Analyzing the pharmaceutical industry. National Journal of Physiology, Pharmacy and Pharmacology, 1(1), 1.
- 15) Duberstein, P., Meldrum, S., Fiscella, K., Shields, C. G., &Epstein, R. M. (2007). Influences on patients' ratings of physicians: Physicians demographics and personality. Patient Education and Counseling (patient ed), 65(2), 270–274.
- 16) Duberstein, P. R., Chapman, B. P., Epstein, R. M., McCollum, K. R., &Kravitz, R. L. (2008). Physician personality characteristics and inquiry about mood symptoms in primary care. Journal of General Internal Medicine, 23(11), 1791–1795.
- 17) Feigin, S., Owens, G., & Goodyear-Smith, F.(2014). Theories of human altruism: A Systematic review. Journal of Psychiatry and Brain Functions. 1(1),1-9,
- 18) Fickweiler, F., Fickweiler, W., & Urbach, E. (2017). Interactions between physicians and the pharmaceutical industry generally and sales representatives specifically and their association with physicians' attitudes and prescribing habits: A systematic review. BMJ Open, 7(9), e016408. https://doi.org/10.1136/bmjopen-2017-016408
- 19) Gallan, A. S. (2004). Factors that influence physicians' prescribing of pharmaceuticals: A literature review. Journal of Pharmaceutical Marketing and Management, 16(4), 3–46.
- 20) Gupta, S., Khajuria, K., Khajuria, V., &Kumar, N. (2018). Comparative study of the impact of marketing strategies of pharmaceutical houses on prescription practices of doctors rural vs urban. International Journal of Basic and Clinical Pharmacology, 7(5), 1016–1019.
- 21) Gyaneshwari. (2015). Influence of pharmaceutical marketing on Prescription practices of physicians. Paripax Indian Journal of Research, 4(9), 133–134.
- 22) Hiebler-Ragger, M., Fuchshuber, J., Dröscher, H., Vajda, C., Fink, A., &Unterrainer, H. F. (2018). Personality influences the relationship between primary emotions and religious/spiritual wellbeing. Frontiers in Psychology, 9, 370.
- 23) Hossain, M. M., Kawsar, S., Tanmy, T. T., &Yousuf, A. (2013). Assessment of influencing factors on prescription practices of physicians in Bangladesh. International Research Journal of Pharmacy, 4(8), 112–116.
- 24) Ibrahim, I. A. Y., &Bélanger, C. H. (2015). Pharmaceutical representatives and prescription decisions by physicians in Saudi Arabia. Journal of Marketing Management, 3, 69–79.
- Joshi, H. N. (2003). Analysis of the Indian pharmaceutical industry. Pharmaceutical Technology, 30, 74– 94.
- 26) Kaiser, H.F. (1974). An index of factorial simplicity. Psychometrika, 39(1), 31-36.
- 27) Karagianni, D. (2006). A segmentation study of physicians' personal values, drug prescription criteria, and preferred marketing communications elements.
- 28) Kasliwal, N. (2013). A study of psychosocial factors on doctors prescribing behaviour-an empirical study in India. IOSR Journal of Business and Management, 13(2), 5–10.



- 29) Kopel, J. (2018). Physician personality and patient confidence. Southwest Respiratory and Critical Care Chronicles, 6(26), 30–36.
- 30) Kotwani, A., Wattal, C., Katewa, S., Joshi, P. C., &Holloway, K. (2010). Factors influencing primary care physicians to prescribe antibiotics in Delhi India. Family Practice, 27(6), 684–690.
- 31) Krunal, V., Solanki, S., &Inumula, K. M. (2020). Impact study of various pharmaceutical promotional practices on Indian Doctor's prescription behavior. European Journal of Molecular and Clinical Medicine, 7(8).
- 32) Kumar, A., Juluru, K., Thimmaraju, P. K., Reddy, J., &Patil, A. (2014). Pharmaceutical market access in emerging markets: Concepts, components, and future. Journal of Market Access and Health Policy, 2(1), 25302.
- 33) Kumar, R. (2016). To study the prescription behavior of physicians regarding brand and a generic name. International Journal of Basic and Clinical Pharmacology, 5(4), 1327–1330.
- 34) Lemaire, J. B., &Wallace, J. E. (2014). How physicians identify with predetermined personalities and links to perceived performance and wellness outcomes: A cross-sectional study. BMC Health Services Research, 14(1), 616
- 35) McPhilemy, J. J., Siddiqi, A., Piuzzi, N., & Chen, A. F. (2020). Personality assessment and emotional intelligence in orthopedic surgery residency selection and training. *JAAOS-Journal of the American Academy of Orthopaedic Surgeons*, 28(10), 395-409.
- 36) Murshid, M. A., &Mohaidin, Z. (2017). Models and theories of prescribing decisions: A review and suggested a new model. Pharmacy Practice, 15(2), 990.
- 37) Murshid, M. A., Mohaidin, Z., &Yen Nee, G. Y. (2016). The influence patient's characteristics "requests and expectations" on physician prescribing behavior: A review. International Journal of Pharmaceutical and Healthcare Marketing, 10(4), 390–411.
- 38) Rosenstein, A. H. (2017). The impact of stress, burnout, and personality on physician attitudes and behaviors that impact patient care. Psychology and Behavioral Science International Journal, 3(1), 1–3.
- 39) Rose, S. L. (2013). Patient advocacy organizations: Institutional conflicts of interest, trust, and trustworthiness. Journal of Law, Medicine and Ethics, 41(3), 680–687.
- 40) Sarma, P. G. (2015). Psychiatrists' prescriptions. Telangana Journal of Psychiatry, 1(1), 21.
- 41) Scheepers, R. A., Lombarts, K. M., Van Aken, M. A., Heineman, M. J., & Arah, O. A. (2014). Personality traits affect teaching performance of attending physicians: Results of a multi-center observational study. PLOS ONE, 9(5), e98107.
- 42) Shamimulhaq, S., Ahmed, R., Ahmad, N., Khoso, I., & Vishnu, P. (2014). Factors influencing prescription behavior of physicians. The Pharma Innovation [Journal], ISSN,
- 43) Taneja, G. (2008). Impact of pharmaceutical industry promotion mix on doctor's prescribing behaviour. Asia Pacific Business Review, 4(4), 82–95.
- 44) Tan, N. C., Tay, I. H., Ngoh, A., &Tan, M. (2009). Factors influencing family physicians' drug prescribing behaviour in asthma management in primary care. Singapore Medical Journal, 50(3), 312–319.
- 45) Theodorou, M., Tsiantou, V., Pavlakis, A., Maniadakis, N., Fragoulakis, V., Pavi, E., &Kyriopoulos, J. (2009). Factors influencing prescribing behaviour of physicians in Greece and Cyprus: Results from a questionnaire-based survey. BMC Health Services Research, 9(1), 150



- 46) Tiwari, P. M., Bimal, A., Gupta, L., Gupta, A., Gupta, R., &Rohit, S. (2015). Factors influencing patients' preference and confidence in a surgeon. Ind. J. Bas Appl. med Res, 4(4), 693–697.
- 47) Virji, A., &Britten, N. (1991). A study of the relationship between patients' attitudes and doctors' prescribing. Family Practice, 8(4), 314–319.
- 48) Waheed, K. A., Jaleel, M., &Laeequddin, M. (2011). Prescription loyalty behavior of physicians: An empirical study in India. International Journal of Pharmaceutical and Healthcare Marketing.
- 49) Wazana, A. (2000). Physicians and the pharmaceutical industry: Is a gift ever just a gift? JAMA, 283(3), 373–380.
- 50) Wiedyaningsih, C., Hakimi, M., Soenarto, Y., &Suryawat, S. (2016). The use of the theory of planned behavior to predict factors influencing physicians' decision to prescribe extemporaneous compounding dosage forms for pediatric outpatients. Asian Journal of Pharmaceutical and Clinical Research, 288–291.
- 51) Williams, C. (2007). Research methods. Journal of Business and Economics Research, 5(3), 65–72.
- 52) Yuguero Torres, O., Esquerda Aresté, M., Marsal Mora, J. R., &Soler-González, J. (2015). Association between sick leave prescribing practices and physician burnout and empathy. PLOS ONE, 10(7), e0133379.