

Pharmaceutical Advertising as Persuasive Discourse: An Interdisciplinary Study of Consumer Attitudes and Self-Medication Behavior

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Abstract

Patients' health behavior has been heavily affected by the rise in exposure to pharmaceutical advertising, specifically in the realm of self-medication. The influence of pharmaceutical advertising on self-medication behavior focusing on the mediating effect of attitude toward self-medication among the general public is examined. The study integrates the Theory of Planned Behaviour (TPB), the Elaboration Likelihood Model (ELM), and Reader-Response Theory to examine pharmaceutical advertising as a persuasive communicative text and to understand how audience responses to such messages contribute to attitude formation and self-medication behaviour. The descriptive and analytical research method was used and data were collected from 167 respondents by conducting an online survey by using a structured set of questions in Vellore district of Tamil Nadu. The authors define pharmaceutical advertising as a multi-dimensional phenomenon that includes informativeness, credibility and persuasiveness. The tested hypothesized relationships were carried out using Structural Equation Modeling (SEM) with AMOS software. The results show that pharmaceutical advertising has a positive and significant influence on attitude towards self-medication which then significantly influences self-medication behavior. The results also showed that there is an indirect effect of advertising via attitude, as attitude was found to mediate relationship between advertising and behavior. Furthermore, descriptive analysis reveals that social media is the main medium of advertisement exposure and self-medication for ordinary illness is prevalent. The study brings a novel approach to the literature, incorporating behavioral and communication viewpoints and provides practical recommendations for planning responsible pharmaceutical advertising strategies.

Keywords: pharmaceutical advertising, self-medication behavior, attitude, theory of planned behavior, elaboration likelihood model, reader-response theory

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1. INTRODUCTION

Self-medication is a well-established public health practice that is common, but complex. Self-medication is the use of medicines by persons to manage diseases that they have diagnosed themselves and for which they do not need a doctor's advice (WHO, 2000). Primarily linked to responsible self-care, it has been increasingly studied for the risks it poses for a proper diagnosis, inappropriate treatment

with drugs, side effects and antimicrobial resistance (Hughes et al., 2001). Self-medication is found to be prevalent in studies performed in developed as well as developing nations, especially in low- and middle-income countries where factors like high access to medicines, economic constraints, time pressure, and previous therapy experiences promote unsupervised medicine use (Katebi et al., 2024; Juneja et al., 2024; Al-Omrani et al., 2023). The results of this study

suggest that self-medication is becoming a “normal” practice to manage health issues in many social contexts.

Over the last few years, there has been an increasing interest in how pharmaceutical advertising influences the use of medicines. Pharmaceutical advertising has been suggested to serve not only as a form of information but also as a persuasive marketing tool that depicts medications as easily available and effective for prevalent health issues (Ventola, 2011; Mintzes, 2012). Advertisements often focus on symptom relief, speed of action, access, and neglect to mention any adverse effects or risks associated with the product (Frosch et al., 2010). Additionally, audience-oriented studies have shown that people will often use pharmaceutical advertising messages when they are making decisions about medicines use, especially when they find their access to healthcare limited or inconvenient (DeFrank et al., 2020; Fogel & Zhuk, 2019). Whereas there is a range of health literacy, the impact of these advertisements seems to be stronger and can help to create a sense of confidence in self-reliant use of medicines (James et al., 2006).

Current research on the topic of pharmaceutical advertising and self-medication has focused on prevalence patterns, levels of exposure, and the features of the ads given (Mintzes, 2012; Ventola, 2011). Simultaneously, the more consumers are exposed to promotional activities of the pharmaceutical industry and the more they are self-medicating, the more important it is to be aware of the effects of advertising on consumer attitudes and medicine-use behaviour. Therefore, the attitude toward self-medication and self-medication behavior relationship together with the pharmaceutical advertising is crucial to understand the current behaviour of the consumers regarding the self-medication. The current study thus aims to investigate the effect of pharmaceutical advertisement on self-medication behavior mediated by attitudes among the general population.

2. REVIEW OF LITERATURE

2.1 Self-Medication Behavior

Behzadifar et al., 2020 reported self medication to be a major problem among students in the world. The study emphasises the importance of targeted educational measures that will increase awareness on the possible risks of self-medication. Additionally, it highlights the importance of implementing stricter regulations and effective monitoring systems to control the sale and distribution of pharmaceutical drugs. Aziz et al. (2018) found that a significant number of people were able to get medications over the counter and many of these were taken without consulting a professional. The study also pointed out

that some consumers routinely used pharmacies for self-medication, suggesting that they were self-medicating regularly without any consultation. Badiger et al (2012) reported that self-medication was common for minor ailments; and another important reason for not seeking a doctor was the lack of time.

2.2 Pharmaceutical Advertising and Consumer Behavior

According to the World Self-Medication Industry (WSMI, 2019), Advertising of non-prescription medicines can contribute to enhancing public awareness by encouraging individuals to take responsibility for their own health. In certain cases, such advertisements support public health initiatives by promoting preventive care and self-care practices. Easwaran et al. (2025) reported that the majority of students relied on community pharmacists as their primary source of information for self-medication, followed by social media and internet-based platforms. Ryvak et al. (2017) found that a substantial proportion of individuals purchased self-medication drugs based on information obtained from advertisements. The study supports the existence of a direct influence of pharmaceutical advertising on individuals' inclination toward medication use. Lazareva et al. (2015) observed that a significant portion of commercial airtime is devoted to pharmaceutical advertisements, highlighting the strong presence of drug promotions. The authors emphasize that such extensive advertising acting an important role in influence the level of self-medication among individuals.

2.3 Attitude toward Self-Medication

From the results of the study carried out by Ajagu et al. (2026), the students exhibited good knowledge of self-medication and generally a positive attitude towards it especially in the use of antibiotics. However, there were some lack of understanding of the proper way to use it. The research emphasizes the necessity of better educational treatments which can produce responsible attitudes. Demographic factors were seen to significantly affect attitudes towards self-medication, with significant differences being seen between male and female and between fields of study (Easwaran et al., 2025). Alnuhait et al. (2024) found that the participants were exposed to drug advertisements rather frequently, with many participants reporting being exposed on a regular basis. Most of the ads were well-received as informative. The results of Abuhamdah and Naser (2024) revealed that there was a high degree of agreement among participants on their attitudes towards self-medication, suggesting that individuals had different levels of positive attitudes towards self-

medication. Tkachenko (2024) conducted a study in which they investigated the problem of self-medication among young people and their attitudes towards it. The results show that people self-medicate for a variety of reasons, such as lack of access to doctors' appointments, time pressures, and people using self-diagnosis and then self-prescribing, to seek relief for their symptoms with medication and prevention strategies.

Although previous studies have looked at self-medication behavior and the impact of pharmaceutical advertising separately, there has been a lack of empirical research that investigates these combined effects. This especially is true of the mediating role of attitude between pharmaceutical advertisements and self-medication behavior, which has not yet been sufficiently studied and thus represents an important research gap in the study of self-medication behavior.

2.4 Theoretical Background of the Study

The study is based on the Icek Ajzen Theory of Planned Behavior (TPB) that suggests people attitude is a significant factor in affecting their behavioral intention and behavior. In the context of the present study, this is expected that attitude towards self-medication would have a significant impact on self-medication behavior. Furthermore, Petty and Cacioppo (1986) suggested the Elaboration Likelihood Model (ELM) that helps explain central and peripheral route processing of pharmaceutical advertisements. Attitudes are assumed to be affected by the key dimensions of advertising (informativeness, credibility, and persuasiveness) and to affect the behaviour outcomes.

Based on this, the study builds on Reader-Response Theory as developed by Louise Rosenblatt and Stanley Fish, which allows for an understanding of pharmaceutical advertising as a text that is actively constructed by audiences and not simply received. The message and the reader's prior experiences, beliefs, and social context are seen as components that combine to create interpretation (Rosenblatt, 1978; Fish, 1980). The study is a multi-disciplinary approach that draws on literature, communication theory and behavioral sciences to account for the effect of advertising on attitudes and ultimately self-medication behavior.

2.5 Objectives of the Study

To examine the general perception and practices related to self-medication among the general public.

To analyze the association between gender and selected categories of self-medication practices among the general public.

To examine the impact of pharmaceutical advertisement dimensions on self-medication behavior, emphasizing the mediating effect of attitudes in terms of self-medication.

2.6 Hypotheses for the Study

Based on the review of literature and the identified research gap, the following hypotheses are formulated to examine the relationships among pharmaceutical advertising, attitude toward self-medication, and self-medication behavior.

H1: There is a significant association between gender and pharmaceutical advertising and self-medication practices.

H2: Pharmaceutical advertising positively influences attitude toward self-medication.

H3: Attitude toward self-medication positively influences self-medication behavior.

H4: Attitude toward self-medication mediates the relationship between pharmaceutical advertising and self-medication behavior.

2.7 Conceptual Model of the Study

Based on the insights derived from the review of literature, the study proposes a research framework to examine the correlation between pharmaceutical advertising and self-medication behavior. Pharmaceutical advertising is considered as a multidimensional construct comprising informativeness, credibility, and persuasiveness. The model further incorporates attitude toward self-medication as a mediating variable that influences behavioral outcomes. Figure 1 depicts the proposed research model for illustrating the relationships that exist.

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Figure 1: Conceptual Model of the Study

3 RESEARCH METHODOLOGY

3.1 Participants and procedure

The current study uses a descriptive and analytical research approach to investigate the influence of pharmaceutical advertising on self-medication behavior, with the mediating role of attitude toward self-medication among the general public. A purposive sampling technique was employed, wherein only individuals who practice self-medication were considered as respondents for the study. The data were obtained using an online survey by structured questionnaire from the respondents of

Vellore district, comprising of 167 respondents. The questionnaire has four parts: measuring pharmaceutical advertising, attitude toward self-medication, self-medication behavior and demographic details.

3.2 Measurement of Study Variables

The construct of pharmaceutical advertising was operationalised as a second-order (higher-order) construct with three first-order (lower-order) dimensions: informativeness, credibility and persuasiveness. The measurement items were modified from MacKenzie, Lutz and Belch (1986), and were adapted to the context of pharmaceutical advertising and self-medication. Four items were used to measure each of these dimensions on a five-point scale (ranging from 1 = Strongly Disagree, to 5 = Strongly Agree). Representative items for informativeness were “Pharmaceutical advertisements contain information about medicines that is useful to me” and “I find pharmaceutical advertisements credible” and for persuasiveness were “Pharmaceutical advertisements affect my choice of medicines.” These three dimensions were then modeled as aspects of the more abstract concept of pharmaceutical advertising.

The attitude towards self-medication was assessed by 6 items adapted from the Theory of Planned Behavior proposed by Ajzen (1991, 2002). Items had been slightly adapted to reflect the context of self-medication and measured the positive or negative perceptions of self-medication held by the respondents. The five-point Likert scale used was from 1 (Strongly Disagree) to 5 (Strongly Agree). A representative item was “Self-medication is a good way to manage minor illnesses.” The items measured respondents' perceptions of the acceptance, ease of use, effectiveness and appropriateness of self-medication.

A self-medication behaviour measure was used which was based on WHO (2000) conceptualization of self-medication and adapted to the context of the present study. The respondents were asked on a five-point scale ranging from "Never" to "Always" to describe how often they engaged in self-medication behaviours. An example item was 'I take medicines without talking to a doctor'. The measure included medicines not taken with medical advice, using past experience, reusing old prescriptions and using over the counter medicines without medical advice. Items were slightly modified in terms of wording to make them relevant to the pharmaceutical advertising and self-medication context.

3.3 Statistical Analysis

Cronbach's alpha was used to determine the reliability of the constructs for internal consistency. Data analysis techniques used include descriptive

statistics (percentage, mean, and standard deviation), chi-square test and Structural Equation Modeling (SEM) in AMOS (2023) to examine the hypothesized relationships between the variables tested, including the mediation analysis. Participants were asked to participate in the study voluntarily, their answers were confidential, and their responses were only used to deepen the study of academic research.

4 ANALYSIS AND RESULTS

Table 1 Demographic Profile and Behavioral Patterns of Respondents

Variable	Option	Frequency	Percentage
Gender	Male	78	46.7
	Female	89	53.3
Age Group (in Years)	Less than 25	24	14.4
	25-35	23	13.8
	35-45	91	54.5
	45-55	28	16.8
	Above 55	1	.6
Educational Level	School Level	4	2.4
	Undergraduate	86	51.5
	Postgraduate	59	35.3
	M.Phil	10	6.0
	Ph.D	8	4.8
Occupation	Student	27	16.2
	Employed	73	43.7
	Self-employed	34	20.4
	Homemaker	33	19.8
Sources of Exposure to Pharmaceutical Advertisements	Television	34	20.4
	Social media	66	39.5
	Online websites/apps	29	17.4
	Pharmacy/medical stores	15	9.0
	Newspapers/Magazines	23	13.8
Pharmaceutical Advertisement Frequency	Very Often	12	7.2
	Often	76	45.5
	Sometimes	59	35.3
	Rarely	20	12.0
	Never	0	-
Influential Pharmaceutical Advertisement	Doctor/pharmacist endorsed ads	56	33.5
	Celebrity/influencer ads	48	28.7
	Informational/educational	40	24.0

Types	educational ads		
	Discount/promotional offers	23	13.8
Frequency of Self-Medication Practice	Always	18	10.8
	Often	33	19.8
	Sometimes	85	50.9
	Rarely	31	18.6
	Never	-	-
Main reason for self-medication	Influence of advertisements	67	40.1
	Cost-effective	39	23.4
	Easy availability of medicines	40	23.9
	Saves time	21	12.6
Types of Medicines Used for Self-Medication	Pain relievers		
	Users	75	44.9
	Not users	92	55.1
	Cold and cough medicines		
	Users	125	74.9
	Not users	42	25.1
	Fever medications		
	Users	103	61.7
	Not users	64	38.3
	Antibiotics		
	Users	73	43.7
	Not users	94	56.3
	Vitamins/Supplements		
	Users	66	39.5
	Not users	101	60.5

Table 1 depicts the demographic profile and behavioral patterns of respondents.

Demographic Profile of Respondents

With regard to the demographic profile of respondents there is a slight dominance of females (53.3%) over males (46.7%). The majority of respondents are aged between 35 to 45 years (54.5%) and the least number of respondents are above 55 years old (0.6%). Most of the respondents have under-graduate educational qualification (51.5%) followed by post-graduate (35.3%) and school level education (2.4%). Concerning job, more than 43.7% of the respondents are employed and 16.2% of respondents are students. The sample is mainly composed of middle aged, educated and working people.

Exposure to Pharmaceutical Advertising

Analysis of exposure to pharmaceutical advertising indicates that social media marketing is the biggest source (39.5%) while pharmacy or medical store advertising is relatively the smallest (9.0%). 45.5%

noticed ads often, and none said that they never notice ads. For advertisement influence, doctor/pharmacist endorsed ads are perceived as the most influential (33.5%), followed by celebrity/influencer endorsed ads (28.7%), and then promotional/discount ads (13.8%). The results indicate that the digital platforms have an important influence on the respondents, as do credibility-based endorsements.

Self-medication practices of Respondents

The results of the self-medication practices show that the majority of the respondents said that they self-medicate sometimes (50.9%) and a smaller percentage said that they self-medicate always (10.8%). Advertisements (40.1%) is major reason for self-medication and, while saving time (12.6%) is the least influential reason. As far as the kinds of medication they use, the most frequently used medications are cold and cough (74.9%) and fever (61.7%), with vitamin supplements being the least used (39.5%). Moderate engagement is also reflected in the use of antibiotics (43.7%) and pain relievers (44.9%). Overall, the findings suggest a high level of self-medication with medicines, and that this practice is heavily influenced by medicines being advertised and easily available.

Table 2: Gender-wise Association with Pharmaceutical Advertising and Self-Medication Practices

Criteria	Option	Male	Female	Total	Chi-square value	P value
Source of Exposure to Pharmaceutical Advertisements	Television	11	23	34	28.955	<0.001
	Social media	22	44	26		
	Online websites/apps	18	11	29		
	Pharmacy/medical stores	6	9	15		
	Newspapers/Magazines	21	2	23		
Influencer	Doctor/pharmacist	21	35	56	9.8	<0.001

tial Pharm aceutic al Adverti sement Types	rmacist endorsed ads				82	02 0
	Celebrity/i nfluencer ads	28	20	48		
	Informatio nal/educati onal ads	14	26	40		
	Discount/pr omotional offers	15	8	23		
Main reason for self- medica tion	Influence of advertisem ents	22	45	67	42. 16 4	<0. 00 1
	Cost- effective	28	11	39		
	Easy availability of medicines	28	12	40		
	Saves time	0	21	21		
Types of Medici nes Used for Self- Medica tion	Pain relievers				60.	<0. 00 1
	Users	60	15	75	62	
	Not users	18	74	92	5	
	Cold and cough medicines				11. 81 9	<0. 00 1
	Users	6 8	57	12 5		
	Not users	1 0	32	42		
	Fever medication s				6.3 39	0.0 12
	Users	5 6	47	10 3		
	Not users	2 2	42	64		
	Antibiotics				11. 62 5	0.0 01
	Users	4 5	28	73		
	Not users	3 3	61	94		
	Vitamins/Supplements				1.7 53	0.1 85
	Users	3 5	31	66		
	Not users	4	58	10		

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Sources of Exposure to Pharmaceutical Advertisements

The Chi-square analysis indicates a statistically significant association between gender and sources of exposure to pharmaceutical advertisements ($\chi^2 = 28.955$, $p < 0.001$) presented in Table 2. This suggests that male and female respondents differ in their preferred media channels for accessing pharmaceutical advertisements. The variation in responses implies that gender plays an important role in determining the medium through which individuals are exposed to such advertisements.

Influential Pharmaceutical Advertisement Types

The results reveal a significant association between gender and the type of pharmaceutical advertisements perceived as most influential ($\chi^2 = 9.882$, $p < 0.020$). This demonstrates a considerable gender disparity in respondents' perceptions of the most influential advertising formats. The findings highlight that gender-based preferences exist in terms of advertisement appeal and effectiveness.

Main Reason for Self-Medication

A significant association is observed between gender and the main reason for engaging in self-medication ($\chi^2 = 42.164$, $p < 0.001$). These suggest that there are differences in the reasons for self-medication behavior between male and female respondents. The differences indicate that there are underlying reasons that differ, such as convenience, accessibility or external factors such as advertising.

Types of Medicines Used for Self-Medication

From the analysis it is found that there is significant relationship between the use of most medicines in self-medication with gender. Specifically, significant relationships are found between the usage of the pain relievers, cold and cough medicine, fever medicine and antibiotics ($p < 0.05$) suggesting that there is a difference in usage between males and females. However, there was no significant association found for vitamin or supplement use ($p > 0.05$), indicating that this category is used in the same way among males and females. In general, the results show that gender is a factor influencing the use of medicines for self-medication, except for a few medicines.

Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) was used to determine the underlying factor structure of the construct of pharmaceutical advertising. Principal Component Analysis (PCA) with Varimax rotation and Kaiser normalization were used for the analysis. The results showed a clear three factors, including informativeness, credibility, and persuasiveness in the context of pharmaceutical advertising, which are conceptually consistent with the theoretical dimensions of pharmaceutical advertising.

The factor loadings for all the items on the corresponding factors were satisfactory, ranging from > 0.50 which means good construct validity (Hair et al., 2010). There were no significant cross-loadings, and items were well distributed across the three factors, validating the distinctiveness of the factors found. The solution showed stability with the factor solution after 6 iterations in the rotation. In general, the EFA results are congruent with the multidimensional structure of pharmaceutical advertising and support the use of this construct as consisting of three sub-dimensions for subsequent analyses.

Measurement Model Assessment

Building on the results of the EFA, CFA was conducted to validate the measurement model and assess construct reliability and validity. The model comprised five latent constructs, namely informativeness, credibility, persuasiveness, attitude toward self-medication, and self-medication behavior.

The standardized factor loadings of all observed variables were found to be within the acceptable range, indicating that the items adequately represent their respective latent constructs. The standardized factor loadings ranged from 0.552 to 0.873, indicating acceptable to strong item reliability, as values above 0.50 are considered adequate for construct validity (Hair et al., 2010). The outcome of the CFA confirmed that all measurement items loaded significantly on their intended constructs.

Pharmaceutical advertising was modeled as a higher-order construct reflected by three first-order dimensions—informativeness, credibility, and persuasiveness. All of the loadings of these dimensions on the higher-order construct were statistically significant and validated the hierarchical structure of pharmaceutical advertising. This suggests that the three dimensions are a comprehensive representation of the effectiveness of pharmaceuticals advertising.

Cronbach's alpha and composite reliability (CR) were used to check the internal consistency of the constructs. The values yielded were above the suggested value of 0.70 thus indicating satisfactory reliability. The convergent validity was validated by Average Variance Extracted (AVE), the results of which were all higher than the required value of 0.50, which shows that the constructs have a significant ability to explain the variance in the indicators.

The discriminant validity was also supported by comparing the square root of the AVE with the inter-construct correlation, ensuring construct validity. Moreover, the model fit indices suggest the measurement model was a good fit with the observed data, supporting the adequacy of the measurement model.

Structural Model Analysis

The hypothesized relationships between constructs were tested by using the structural model. The results are shown in Table 3.

Table 3: Structural Model Path Estimates

Path	(β)	S.E	C.R	p-value	Decision
Pharmaceutical Advertising $\rightarrow$ Attitude towards self-medication (H2)	0.819	0.098	10.696	<0.001	Supported
Attitude towards self-medication $\rightarrow$ Self-medication behavior (H3)	0.672	0.299	11.681	<0.001	Supported

The results show that the attitude towards self-medication has a strong positive impact towards the pharmaceutical advertising ($\beta = 0.819$, $p < 0.001$); thus, supporting H2. Furthermore, attitude towards self-medication significantly affected self-medication behavior ($\beta = 0.672$, $p < 0.001$) and this finding supported H3. The findings indicate pharmaceutical advertising positively influences the attitudes of exposed individuals and that these attitudes result in greater self-medication behavior.

The coefficient of determination (R^2) suggests that pharmaceutical advertising accounts for 67% of the variability in attitude, and attitude accounts for 45% of the variability in self-medication behavior, and this

means that there is a high level of explanatory power. The study path diagram is shown in Figure 2.

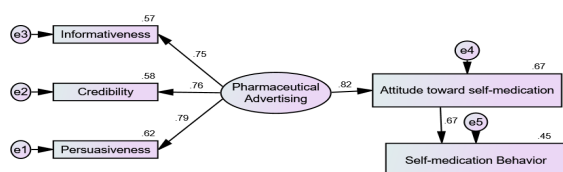


Figure 2: Structural Path Model of the Study

Mediation Analysis

A bootstrap analysis with 2000 resamples was undertaken to investigate the mediation effect of attitude towards self-medication. Table 4 summarises the results.

Table 4: Direct, Indirect, and Total Effects of Structural Model Paths

Path	Direct Effect (β)	Indirect Effect (β)	Total Effect (β)	95% CI	Result
Pharmaceutical Advertising → Attitude towards self-medication (H2)	0.819	-	0.819	[0.708, 0.898]	Supported
Attitude towards self-medication → Self-medication behavior (H3)	0.672	-	0.672	[0.497, 0.786]	Supported
Pharmaceutical Advertising → Self-medication behavior	0.000	0.550	0.550	0.357, 0.695]	Supported (Indirect)

n					
behavior (H4)					

Results show that through the mediator of attitude ($\beta = 0.550$, $p < 0.001$), pharmaceutical advertising has a significant indirect impact on self-medication behaviour. The results of the bootstrap confidence interval (0.357 to 0.695) also exclude the null value, which further supports the significance of the mediation effect.

Because the direct pathway between pharmaceutical advertising and self-medication behavior was not part of the proposed model, the results suggest full mediation, with attitude toward self-medication playing a completely mediating role between the two.

5 DISCUSSION AND IMPLICATIONS

5.1 Summary of Findings

The results show that the respondents are an active and educated majority that can affect their interaction with health-related information. Digital media, especially social media, is the main driver of exposure to pharmaceutical advertising - credible sources such as healthcare professional endorsements have a greater impact on respondents. The advertisements are seen fairly often, indicating that they are a regular part of daily life. Most respondents sometimes use self-medication medicines, reflecting a balanced but frequent use of self-care medicine. Different types of medicines have varying levels of use with treatments for common ailments like cold, cough and fever having the highest level of use with comparatively low use for other medicines. Media influences and practical aspects are important to the overall formation of self-medication behaviors.

The results of the chi-square analysis indicated that gender significantly influences exposure to pharmaceutical advertisements, perception of types of advertisements, self-medication motives and types of medicines used. The results suggest that modern media channels like TV or social media, as well as doctor/pharmacist-endorsed and informational advertising, are more effective at influencing the female respondents, reflecting greater levels of responsiveness to credible and informative promotional tactics. Advertisement influence and time saving motives have a greater effect on females' self-medication behavior. On the other hand, male respondents showed a greater relationship to the use

of different medicines, mainly pain relievers and antibiotics and anti-cold medicines, suggesting a greater tendency to taking medicine. Results overall highlight that females' behaviour is more related to advertisement exposure and persuasion, whereas males' behaviour is more related to actual medicine use patterns.

The bootstrap mediation analysis shows that the attitude of individuals toward self-medication is influenced strongly by pharmaceutical advertising, and the latter also strongly influences the attitude of the individuals towards self-medication. The results are clear that attitude is one of the extremely important linking factors that transmits the effect of advertising. Importantly, the impact of pharmaceutical advertising on behaviour is indirect and via the attitudinal pathway. This indicates that the change in perception and mindset is an important factor in converting advertising awareness to real practice of self-medication. In general, self-medication attitude is the most significant mediator between self-medication variables and behavioral outcomes.

5.2 Discussion of Findings

Overall, the findings of the present study are similar to those of previous studies on pharmaceutical advertising and self-medication. Digital media, especially social media, is also a leading media source for being exposed to, which is consistent with previous research that has documented the increasing role of online health information and direct to consumer advertising in health-related choices (Ventola 2011; Korda & Itani 2013). The greater effect of the healthcare professional endorsement found in this study also corroborates past research that has focused on the importance of credibility based advertising in the healthcare arena (Huh & Becker, 2005).

Results of this study also support the findings of previous studies. This is in line with previous literature that suggested gender differences regarding health behavior patterns, with males being more inclined toward using medicines (Bertakis et al., 2000). But, this seems to contradict some previous research that showed men to be more sensitive to promotional influences, which suggests a possible change in media consumption patterns.

The findings of mediation offer important theoretical support for the attitude-behaviour models like Theory

of Planned Behavior (TPB) (Ajzen, 1991) that state that attitude is a key determinant of behaviour. Results of full mediation suggest that there is no direct causal link between pharmaceuticals advertising and self-medication, but rather an indirect link through shaping of attitudes.

5.3 Managerial Implications

The results provide a number of practical implications for pharmaceutical marketers, healthcare providers, and policy makers. First, as digital media (particularly social media) is a major source of exposure, it is important that digital campaigns are targeted and provide accurate and engaging health information. Credibility is important, and ads from doctors or pharmacists and those with clear, educational information will be more effective – so firms should allocate resources to communicating with expertise, and not just promotion.

Second, the gender differences are striking and indicate that segment marketing approaches should be considered. Campaign information aimed at the female audience should include trustworthy, informative and time-saving elements, while the campaigns for male audience should highlight responsibility for use and awareness about the consumption of medicines, especially popular medicines.

Third, the complete mediation effect of attitude indicates that simply boosting exposure to an advertisement isn't enough. Rather, advertisement managers should plan campaigns that would have a positive impact on the attitude of self medication to ensure safety and responsible use, emphasizing the risks, dosage and need for professional consultation.

Finally, the close cooperation of policymakers and healthcare institutions with advertisers is required to guarantee ethical promotion practices since advertising strongly affects self-medication behavior. Educational interventions and guidelines can help balance the effectiveness of the promotion with public health safety to ensure that greater exposure does not result in misuse of medicines.

6 CONCLUSION

The study approached the concept of pharmaceutical advertising as an aggregation of persuasiveness, informativeness and credibility, and used the Theory of Planned Behavior to evaluate attitude toward self-

medication while self-medication behavior was measured by frequency of practice. The results indicate that the impact of the advertising is mediated by the effect on the attitude, which subsequently translates to self-medication behavior, thus showing that the advertising effect is exclusively through the attitudinal pathway. This highlights the importance of perception and evaluation in converting exposure to ad to actual health behaviour. The overall finding of the study suggests that the persuasive, informative and credible advertising, along with the favorable attitude plays a significant role in influencing self-medication practices and the need for responsible communication strategies to achieve the promotion of safe and rational use of medicines.

6.1 Limitations of the Study

The study is conducted in Vellore district only and the results may not be applicable to other geographical areas. The data were obtained from self-reported responses to an online survey where the interpretation of responses and the respondent bias were a possibility. The study also neglects other potential psychological and social factors that might affect self-medication behavior, and attaches primary attention to some dimensions of pharmaceutical advertising.

6.2 Scope for Further Research

Further research could be conducted in other areas and among other population groups to increase the generalizability of the study. Other variables like health literacy, peer influence, digital health awareness or risk perception can also be included in the researchers' study to get a deeper understanding of self-medication behavior.

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