



# A Study On Impact Of Otc Pain Relief Drugs Advertising On Consumer Choice

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## ABSTRACT

This study investigates the impact of advertising on consumers purchase decisions and trust in over-the-counter (OTC) pain relief drugs. The research tests the hypothesis that advertising significantly influences consumers purchasing decisions and conducted a Chi-square analysis to support this. The findings revealed that advertising has a noteworthy positive impact on consumers' choices when it comes to buying OTC pain relief drugs. Additionally, the study examines the influence of advertising on consumer trust in OTC pain relief drugs. Another Chi square analysis demonstrated that advertising significantly affects consumer trust in these products. These results underscore the critical role that advertisements play in shaping both the purchasing decisions and trust levels of consumers regarding OTC pain relief medications.

**Keywords:** Direct-to-consumer (DTC) advertising, Over-the-counter (OTC) pain relief products, Consumer decision-making, Brand awareness, Perceived efficacy, Product efficacy, Risks and side effects, Consumer perceptions, Ethical implications, public health, Consumer behavior.

## INTRODUCTION

The pharmaceutical industry has witnessed a significant shift towards direct-to-consumer (DTC) advertising, including for over-the-counter (OTC) pain relief products. This trend has raised concerns about the potential impact of such advertising on consumer choice and behavior. This paper aims to explore the influence of OTC pain relief drug advertising on consumer decision-making, considering factors such as brand awareness, perceived efficacy, and potential biases. [1] OTC pain relief products, such as acetaminophen, ibuprofen, and aspirin, are widely available and often used to alleviate minor aches and pains. Pharmaceutical companies invest heavily in advertising these products to reach a broader consumer base and increase market share. DTC advertising campaigns often employ persuasive messaging, emotional appeals, and celebrity endorsements to

create a positive brand image and encourage consumers to choose their products over competitors.[2] The impact of OTC pain relief drug advertising on consumer choice can be multifaceted. On one hand, advertising can raise awareness of available options, educate consumers about different product benefits, and empower them to make informed decisions.[3] By highlighting the potential advantages of certain brands or formulations, advertising can encourage consumers to seek out products that are most suitable for their needs. [4] However, there are also concerns about the potential negative effects of OTC pain relief drug advertising. Critics argue that such advertising can create unrealistic expectations about product efficacy, downplay potential risks and side effects, and encourage unnecessary consumption. Moreover, the use of emotional appeals and celebrity endorsements can manipulate consumer perceptions and influence their choices based on factors other than the product's actual benefits. [5] This paper will delve into the strategies employed by pharmaceutical companies in OTC pain relief advertising, examining the use of persuasive messaging, emotional appeals, and celebrity endorsements. It will also explore the psychological mechanisms that influence consumer decision-making, including brand awareness, perceived efficacy, and potential biases. [6] By understanding these factors, we can gain valuable insights into the impact of OTC pain relief drug advertising on consumer choice and behavior. [7] Furthermore, this paper will discuss the ethical implications of DTC advertising for OTC pain relief products. Are there certain ethical guidelines that should be followed to ensure that advertising is truthful, informative, and responsible? How can we balance the commercial interests of pharmaceutical companies with the well-being of consumers? [8] In conclusion, this paper aims to provide a comprehensive analysis of the influence of OTC pain relief drug advertising on consumer choice. By examining the strategies employed by pharmaceutical companies, the psychological mechanisms at play, and the ethical considerations involved, we can gain a better understanding of the impact of this form of marketing on public health and consumer behavior.[9]

## LITERATURE REVIEW

1. Direct-to-consumer (DTC) advertising of prescription drugs has significantly increased over the years, with drug companies spending nearly \$1 billion on this form of marketing in 1999 alone. This trend is driven by a need for pharmaceutical manufacturers to boost consumer demand in an increasingly competitive market. While proponents argue that DTC advertising helps educate consumers about available treatments, critics claim it may distort the patient-physician relationship and lead to inappropriate prescribing. Studies suggest that DTC advertising influences consumer behavior, with many patients asking their doctors for advertised drugs, even if not medically necessary. Despite this, DTC ads often prioritize the benefits of drugs while downplaying risks, raising concerns about their overall impact on public health. The debate continues about whether such ads truly serve an educational purpose or simply increase drug company profits (M S Wilkes, 2000)
2. The transition of pharmaceutical products from prescription-only to over-the counter (OTC) status has a notable impact on consumer exposure to advertising. This shift often leads to increased advertising, particularly among low socioeconomic status (SES) consumers, who gain more access to health-related information through these ads. Direct-to-consumer advertising (DTCA) in mass media plays a crucial role in informing consumers about medications, especially after the Rx-to-OTC switch. While proponents of DTCA argue that it educates consumers and promotes better healthcare decisions, critics raise concerns about the incomplete information provided, which may emphasize benefits while downplaying risks. Studies show that consumers, especially those with lower education and income levels, are more likely to be exposed to such advertisements after the OTC switch, indicating that advertising strategies target different demographic groups as regulations change. This increased exposure among low SES groups has important public policy implications for how OTC transitions are managed (yang, 2011)
3. A study conducted in Poland explored the effects of over-the-counter (OTC) drug advertising on consumer behavior and attitudes. The results indicated that only 12.4% of participants reported purchasing OTC drugs due to advertising, and 9.3% trusted advertised drugs more than unadvertised ones. However, a significant

portion of respondents were unsure if advertising influenced their decisions. The study also found that 22.4% of participants felt misled by advertisements regarding the therapeutic properties or side effects of drugs. Moreover, OTC drug advertising caused anxiety among 24.3% of respondents, with many believing that not taking the advertised drug could worsen their health. These findings suggest that OTC drug advertisements in Poland do not fully comply with regulatory guidelines, often misleading consumers and raising public health concerns (I. RADLIŃSKA<sup>1</sup>, 2022)

4. The review of the literature reveals that commercial drug advertising has significantly impacted self-medication practices. According to Ershadpour, Kargar, and Rajput (2017), the pervasive nature of drug advertising in mass media platforms, such as television and the internet, encourages individuals to diagnose and medicate themselves, often without proper medical consultation. This phenomenon is particularly prevalent in societies like Iran, where cultural factors and a lack of awareness exacerbate the problem. Studies suggest that advertising leads individuals to perceive common, non-medical symptoms as diseases, prompting unnecessary drug consumption. This behavior increases the risk of medication misuse, leading to potential health risks, including the use of counterfeit and unhealthy medications. (R. Ershadpour<sup>1</sup>, 2017)

5. The literature indicates that advertising plays a significant role in raising awareness of over-the counter (OTC) medicines, but its impact on consumer buying behavior in Nepal is limited. Tiwari (2016) conducted a study in the Nepalese context, showing that while 41.2% of respondents became aware of OTC medicines through advertisements, only 32% purchased these medicines as a direct result of such exposure. The study also revealed that only 14.8% were influenced by advertisements, with most consumers relying on pharmacists recommendations for their purchases. This suggests that while advertisements may raise awareness, they are less effective in altering actual purchasing behaviors, which are largely influenced by trusted medical professionals. (tiwari, 2016)

6. The literature shows that price and brand information significantly influence consumers decisions to purchase over-the-counter (OTC) drugs. Aufegger et al. (2021) examined how these cues affect consumers' perceptions of risk, quality, and value, ultimately impacting their purchase intentions. The study found that while consumers tend to favor branded drugs when no price is shown, they are more likely to opt for generics when lower prices are advertised. Moreover, perceived quality and risk were key mediators in the decision-making process. Consumers' familiarity with brands, concerns about generic drug efficacy, and past experiences also played a crucial role in shaping purchasing behavior. The findings emphasize the importance of transparency in advertising and the need to educate consumers about the equivalence of generic drugs to foster a more cost-effective self-medication culture. (Lisa Aufegger, 2021)

7. The increasing prevalence of self-medication is influenced by multiple factors, including access to over-the-counter drugs and pharmaceutical advertisements. A study by Susanto et al. (2023) highlights the impact of television advertisements and the crucial role pharmacists play in self-medication practices. The findings reveal that while television advertisements often promote drug use, they can lead to inappropriate medication if not regulated. The role of pharmaceutical professionals is significant in guiding patients toward safe self-medication practices. The study underscores the importance of pharmacists' involvement in educating the public about safe medication practices, advocating for policies to regulate drug advertisements, and ensuring that consumers have access to accurate drug information. (Agus Susanto, 2023)

8. Direct-to-consumer (DTC) television advertising has significantly influenced the prescription behavior of physicians, especially in the case of osteoarthritis drugs like Vioxx and Celebrex. Bradford et al. (2006) explored how DTC ads for these drugs increased patient flow into clinics and impacted prescription patterns. The study found that Vioxx advertisements had a strong effect on both patient visits and prescriptions, while Celebrex ads were less effective in increasing its own prescriptions but did influence Vioxx prescriptions. This highlights the complex interaction between advertising and physician decision-making, showing that DTC marketing can both drive patient demand and alter the dynamics of drug prescriptions. (W. David Bradford, 2006)



9. Health values are a powerful tool in television advertising, particularly in the promotion of pharmaceutical products. Barańska (2019) explains that the concept of health is instrumentalized in these advertisements to shape consumer behavior, capitalizing on the public's perception of health as a fundamental and valuable aspect of life. By appealing to viewers' desires for well-being and a disease-free state, pharmaceutical ads often use persuasive narratives, such as the depiction of quick recovery and effective treatment, to influence purchasing decisions. This phenomenon highlights the ethical considerations in managing advertising content, especially when health is portrayed as a commodity. (Baranska, 2019)

10. The influence of drug advertising on both healthcare professionals and patients has been a subject of considerable investigation. Manolov et al. (2015) conducted a study exploring the impact of medicinal advertising on healthcare professionals and patients in Bulgaria. The findings indicate that over 80% of healthcare professionals admitted to recommending or prescribing advertised medicines, while 73% of patients reported purchasing drugs due to advertisements. This highlights the significant role advertising plays in influencing decisions within the healthcare context, particularly in countries where regulations for direct-to-consumer pharmaceutical advertising are more permissive. The study also revealed that patients tend to trust advertised medications more than healthcare professionals, which suggests a need for tighter regulations and enhanced public education to ensure safe and rational drug use. (Dimitar K. Manolov, 2015)

11. The use of over-the-counter (OTC) analgesics among adolescents has been widely researched, highlighting both the prevalence and the associated risks. Studies have shown that adolescents frequently use OTC analgesics like acetaminophen and ibuprofen for pain management, often without fully understanding the risks associated with misuse, such as overdose or adverse effects (Van den Bulck et al., 2005). Television has been identified as a potential influence on adolescents' consumption of these drugs, with heavy television viewers being significantly more likely to use OTC analgesics regularly. The study by Van den Bulck and colleagues (2005) found that for each additional hour of television watched, the odds of being a regular user of analgesics increased by 1.16 times. This suggests a link between media exposure and the increased use of OTC analgesics, although more research is needed to determine causality. (Jan van den Bulck, 2005)

12. Television advertising significantly impacts consumer behavior, particularly in the pharmaceutical industry. Ștefan et al. (2021) explored the effect of television commercials on the impulse to purchase over-the-counter (OTC) medications in Romania. Their research revealed that consumers often rely on television advertisements when selecting OTC medicines, despite pharmacists' recommendations. This influence is especially strong for medications marketed as quick solutions for common ailments like headaches and colds. The study concluded that while pharmacists remain a trusted source of advice, television ads drive many consumers' decisions, particularly those who seek immediate relief, often without full awareness of the potential risks involved. (Maria-Cristina ȘTEFAN, 2021)

13. A literature review on the content analysis of drug advertising explores how advertising strategies differ between prescription and over-the-counter (OTC) drugs, especially after drugs transition from prescription to OTC. Research by Faerber and Kreling (2012) analyzed 98 television advertisements from 1996 to 2009, comparing the presence of drug information and persuasive appeals. Findings indicated that while both prescription and OTC ads contained minimal drug information, OTC ads featured significantly more persuasive appeals, such as symptom control and convenience. The study highlights how regulatory environments shape advertising content, with prescription ads required to balance risks and benefits under FDA rules, whereas OTC ads are more focused on product benefits due to looser Federal Trade Commission (FTC) regulations. This shift in advertising strategies raises concerns about the potential impact on consumer decision-making in a market-driven health care system. (Adrienne E. Faerber, 2012)

14. A literature review on advertising for drugs that switch from prescription to over-the-counter (OTC) focuses on how these ads balance the presentation of risks and benefits. Faerber and Kreling (2011) studied 108 advertisements for Claritin, Zyrtec, and Prilosec, comparing prescription and OTC versions. Their findings revealed that prescription drug ads provided a fair balance between benefits and risks, as required by the FDA, with explicit statements of side effects. In contrast, OTC ads featured more benefit-focused messaging with minimal and implied risks, largely conveyed through less noticeable visual text. The authors argue that these differences stem from the less stringent Federal Trade Commission (FTC) regulations governing OTC ads, which could lead to consumers underestimating the risks of OTC drugs compared to their prescription counterparts. (Adrienne E. Faerber D. H., 2011)
15. The debate on the effects of over-the-counter (OTC) drug advertisements on television has been longstanding, particularly regarding its influence on drug misuse. Jarvis et al. (1977) examines this issue using a health-related locus of control scale to evaluate the impact of such advertising on consumer behavior. The study involved 200 residents and applied multiple discriminant analyses, which highlighted that interpersonal advice-seeking, rather than media exposure, was a more significant predictor of drug use behavior. The authors conclude that simplistic causal relationships between television drug ads and drug misuse are unfounded, emphasizing the complexity of media effects on health behaviors. (Jaarvis, 1977)
16. Direct-to-consumer advertising (DTCA) of prescription medications has been a contentious issue, particularly in countries where such advertising is permitted. Dens, Eagle, and De Pelsmacker (2008) explore attitudes toward DTCA in New Zealand, where it is allowed, and Belgium, where it is not. Their study found that while both patients and healthcare professionals in both countries held relatively negative views on the informativeness and reliability of DTCA, attitudes were more positive in New Zealand, especially regarding the informational value of the ads. Despite concerns about the potential for misinformation, the study concluded that DTCA did not significantly harm the patient-doctor relationship. (Dens, 2008)
17. Over-the-counter (OTC) drug advertising has significant implications for both pharmacists and patients. A study conducted by Abduelkarem et al. (2018) examined the perceptions of pharmacists in Abu Dhabi, UAE, regarding OTC drug advertisements. The study revealed that pharmacists generally viewed these advertisements as beneficial in making them aware of new products, with 83.8% of respondents acknowledging this impact. However, there were concerns about the potential for such advertising to lead to misuse or overuse of medications, with 80% of pharmacists worried about patients using OTC drugs carelessly. Despite these concerns, the study concluded that OTC advertisements could improve communication between pharmacists and patients. (Abduelmula R Abduelkarem, 2018)
18. Direct-to-consumer (DTC) advertising has significantly increased in recent years, raising important questions about its effects on consumer behavior, particularly in terms of informationseeking behavior. Research suggests that age and self-perceived medication knowledge strongly influence consumer preferences for obtaining drug-related information. For instance, younger individuals and those with higher self-reported medication knowledge tend to seek information more actively from healthcare providers like physicians and pharmacists. Conversely, older individuals and those with lower medication knowledge may rely less on such sources. The type of information—whether benefits, risks, or costs—also plays a role, with consumers generally more interested in risk and benefit information than cost-related details. While DTC advertising can increase awareness, there remains a need for further research to understand how it impacts consumer health decisions, particularly regarding the potential influence on prescribing patterns (Doucette & Schommer, 199X). (William R. Doucette, 1998)
19. Direct-to-consumer advertising (DTCA) of prescription drugs is a major source of consumer health information, yet its educational value is frequently debated. Proponents argue that DTCA raises awareness about medical conditions and treatment options, empowering patients to engage in healthcare decisions. Critics,

however, suggest that the complexity of drug information, when simplified for advertisements, can lead to misunderstandings and unrealistic expectations. Research shows that while consumers appreciate being informed about available treatments, they often feel DTCA lacks essential details, such as alternative therapies, comprehensive drug safety information, and comparative treatment options. A study conducted through focus groups revealed that while DTCA increases awareness, its format and content often fail to provide the necessary depth for informed decision-making. (Henry young, 2005)

20. The impact of print prescription drug advertising on consumer behavior has been widely studied, with varying conclusions regarding its effectiveness. Research suggests that while print advertisements can increase awareness of available medications, they often fail to fully inform consumers about the risks, benefits, and alternative treatments. Consumers tend to focus on the benefits of the advertised drugs but may overlook or misunderstand the complex medical jargon and risk information typically presented in fine print. This limited comprehension may lead to unrealistic expectations or the perception that the medication is more beneficial than it truly is. Consequently, critics argue that print drug advertisements prioritize promotional objectives over consumer education, which may compromise informed decision-making. Efforts to improve the clarity and accessibility of information in print advertisements could enhance their educational value. (Abhilasha Mehata, 2003)

21. The literature on direct-to-consumer advertising (DTCA) of prescription drugs reveals significant consumer engagement with these ads, particularly regarding the types of information presented. Consumers show mixed reactions to DTCA, where product-claim ads tend to be the most effective in influencing their behavior, as these ads provide specific information about the drug, including side effects, which consumers view as important. However, the literature indicates that despite the information provided, DTCA often lacks sufficient details, prompting consumers to seek more information from their physicians or other sources. The influence of these advertisements is substantial, with a considerable percentage of consumers taking action after exposure, although many still rely heavily on healthcare professionals to guide their final decisions. (Nile M. Khanfar, 2008)

22. Direct-to-consumer advertising (DTCA) of pharmaceuticals has generated substantial debate, particularly regarding its influence on consumer behavior. Research indicates that DTCA may contribute to the medicalization of minor ailments and lead to inappropriate medication use, although it also encourages patient engagement with healthcare professionals. A study by Dieringer et al. (2011) found that patients using multiple prescription medications were more likely to respond to DTCA by discussing new health conditions with their physicians. However, the same relationship was not observed with over-the-counter medications. This suggests that DTCA may have a greater impact on those already reliant on prescription medications, underscoring the importance of careful medication management to avoid overmedication or therapeutic duplication. (Nicholas J Dieringer, 2011)

23. Abhishek Dadhich, Dr. Kavaldeep Dixit (2017) conducted research on Consumer Selection and Buying Behaviour towards Over the Counter (OTC) Medicine in Jaipur City. In this study, the researcher investigates the perception and behavior of consumers in choosing over-the-counter drugs and the impact of different marketing strategies adopted by major pharmaceutical companies. This document also sets out how promotional tools, marketing mix and overall company strategy are integrated for pharmaceutical OTC marketing. (Jin, 2002)

24. Mayyada Wazaifya, Eileen Shieldsb, Carmel M Hughesb and James C McElnay (2005) conducted research on Societal perspectives on over-the-counter (OTC) medicines during this study, they investigate that Over-the-counter (OTC) medications are increasingly used for self-medication, but the products can be misused/abused. This study investigated the opinion and perception of over the counter medicines by the general public, including the misuse/abuse of such preparations. It found that most people in Northern Ireland were very aware of the abuse potential of some over-the-counter drugs. (Mayyada Wazaifya, 2005)



25. Abinaya Ravichandran and Asha Basavareddy (2016) conducted research on Perception of pharmacists regarding over-the-counter medication. Under this research, they did questionnairebased study was conducted to assess the knowledge, attitude, and practice among pharmacists regarding OTC medications. Analgesics where most commonly used OTCs were safe to dispense, according to 90% of the pharmacists; 50% expressed that the consumers should first consult doctor. (Basavareddy, 2016)

### DATA INTERPRETATION AND ANALYSIS

**Table 1: Age**

| Description  | Frequency | Percentage |
|--------------|-----------|------------|
| 18-25 year   | 167       | 53%        |
| 26-35 year   | 81        | 25.7%      |
| 36-45 year   | 34        | 10.8%      |
| 46-55 year   | 24        | 7.6%       |
| 55 and above | 9         | 2.9%       |

(Source: Primary data from google form)

**Table 2: Gender**

| Description | Frequency | Percentage |
|-------------|-----------|------------|
| Male        | 168       | 53.3%      |
| Female      | 147       | 46.7%      |

(Source: Primary data from google form)

**Table 3: Education Level**

| Description   | Frequency | Percentage |
|---------------|-----------|------------|
| Postgraduate  | 143       | 45.4%      |
| Undergraduate | 109       | 34.6%      |
| Graduate      | 11        | 10.6%      |
| High school   | 50        | 15.9%      |

(Source: Primary data from google form)

**Table 4: Occupation**

| Description   | Frequency | Percentage |
|---------------|-----------|------------|
| Student       | 105       | 33.3%      |
| Employed      | 119       | 41%        |
| Self Employed | 47        | 14.9%      |
| Unemployed    | 29        | 9.2%       |
| Retired       | 5         | 1.6%       |

(Source: Primary data from google form)

**Table 5: How often do you use OTC pain relief medications.**

| Description     | Frequency | Percentage |
|-----------------|-----------|------------|
| Occasionally    | 158       | 50.2%      |
| Rarely          | 120       | 38.1%      |
| Frequently      | 21        | 6.7%       |
| Very Frequently | 16        | 5.1%       |

(Source: Primary data from google form)

**Table 6:** Preferable dosage form by participants

| Description | Frequency | Percentage |
|-------------|-----------|------------|
| Tablet      | 252       | 80%        |
| Gel         | 38        | 12.1%      |
| Ointment    | 86        | 27.3%      |
| Spray       | 47        | 14.9%      |
| Cream       | 60        | 19%        |

(Source: Primary data from google form)

**Table 7:** Type of medications respondents use

| Description | Frequency | Percentage |
|-------------|-----------|------------|
| Paracetamol | 222       | 73.5%      |
| Ibuprofen   | 75        | 24.8%      |
| Aspirin     | 50        | 16.6%      |
| Naproxen    | 18        | 6%         |

(Source: Primary data form google form)

**Table 8:** How often do you see advertisements for OTC pain relief drug

| Description | Frequency | Percentage |
|-------------|-----------|------------|
| Always      | 137       | 43.5%      |
| Often       | 82        | 26%        |
| Sometimes   | 59        | 18.7%      |
| Rarely      | 29        | 9.2%       |
| Never       | 8         | 2.5%       |

(Source: Primary data form google form)

**Table 9:** Media in which participant saw advertisement frequently

| Description           | Frequency | Percentage |
|-----------------------|-----------|------------|
| Television            | 150       | 47.6%      |
| Radio                 | 9         | 2.9%       |
| Internet              | 131       | 41.6%      |
| Social Media          | 148       | 47%        |
| Print                 | 33        | 10.5%      |
| Billboard/Outdoor ads | 54        | 17.1%      |

(Source: Primary data form google form)

**Table 10:** How you ever purchased OTC drugs after seeing an advertisement?

| Description | Frequency | Percentage |
|-------------|-----------|------------|
| Yes         | 230       | 73%        |
| No          | 85        | 27%        |

(Source: Primary data form google form)



**Table 11:** Influence of advertisement on consumer decision.

| Description            | Frequency | Percentage |
|------------------------|-----------|------------|
| Not at all influential | 43        | 13.7%      |
| Slightly influential   | 66        | 21%        |
| Moderately influential | 115       | 36.5%      |
| Very influential       | 80        | 25.4%      |
| Extremely influential  | 11        | 3.5%       |

(Source: Primary data form google form)

**Table 12:** Factors that influence choice of consumer

| Description             | Frequency | Percentage |
|-------------------------|-----------|------------|
| Advertisement           | 99        | 31.4%      |
| Brand Reputation        | 116       | 36.8%      |
| Price                   | 51        | 16.2%      |
| Friend recommendation   | 39        | 12.4%      |
| Doctor's recommendation | 157       | 49.8%      |
| Previous experience     | 98        | 31.1%      |
| API                     | 59        | 18.7%      |

(Source: Primary data form google form)

**Table 13:** Advertisement provide enough information or not

| Description | Frequency | Percentage |
|-------------|-----------|------------|
| Yes         | 193       | 61.3%      |
| No          | 42        | 13.3%      |
| Sometimes   | 80        | 25.4%      |

(Source: Primary data form google form)

**Table 14:** Advertisement are trustworthy or not

| Description | Frequency | Percentage |
|-------------|-----------|------------|
| Yes         | 127       | 40.3%      |
| No          | 80        | 25.4%      |
| Sometimes   | 108       | 34.4%      |

(Source: Primary data form google form)

**Table 15:** Effectiveness of advertised drugs as compared to drugs which are not advertised

| Description         | Frequency | Percentage |
|---------------------|-----------|------------|
| Much less effective | 22        | 7%         |
| Less effective      | 36        | 11.4%      |
| About the same      | 185       | 58.7%      |
| More effective      | 67        | 21.3%      |
| Much more effective | 5         | 1.6%       |

(Source: Primary data form google form)

**Table 16:** Consumer perception about advertisement regulation

| Description | Frequency | Percentage |
|-------------|-----------|------------|
| Yes         | 240       | 76.2%      |
| No          | 17        | 5.4%       |
| Unsure      | 58        | 18.4%      |

(Source: Primary data form google form)

**Table 17:** Side effects experienced by participant

| Description | Frequency | Percentage |
|-------------|-----------|------------|
| Yes         | 247       | 78.4       |
| No          | 68        | 21.6       |

(Source: Primary data form google form)

**Table 18:** Would participant recommend products to others or not

| Description | Frequency | Percentage |
|-------------|-----------|------------|
| Yes         | 123       | 39.2%      |
| No          | 93        | 29.6%      |
| Maybe       | 98        | 31.2%      |

(Source: Primary data form google form)

## RESEARCH METHODOLOGY

### OBJECTIVE OF THE STUDY

1. To determine how demographic factors influence the impact of OTC pain relief drug advertisement on consumer choice.
2. To assess the impact of over-the-counter (OTC) pain relief drug advertising on consumer choices and behaviors.
3. To determine awareness of OTC pain relief drugs in consumers.
4. To investigate whether advertising has influenced consumers to become more knowledgeable
5. To determine advertising of OTC pain relief products, influence on consumer behavior.
6. To determine attitude and perception of the consumers regarding OTC pain relief products

### Source of Data

Data is collected directly interacting with people by questionnaire and by providing the survey link through WhatsApp.

### Data Collection method

This Primary data is collected through survey method based on questionnaires circulated online forms to the respondents.

### Population

For this study, we collected data from 315 participants in both Gujarat and Maharashtra. Participants ranged in age from 18 to 65, and included both males and females.

### Sampling Method

We used two methods

1. Convenience sampling
2. Stratified sampling

### DATA ANALYSIS

From the data collected above, here I have selected 315 responses for calculating the f value which helps in data interpretation and analysis.

### For hypothesis 1

**Null Hypothesis ( $H_0$ ):** Advertising has no significant impact on consumers purchase decision of OTC (pain relief) drugs.

**Alternative Hypothesis ( $H_1$ ):** Advertising has a significant positive impact on consumers' purchase decision of OTC (pain relief) drugs.

To perform a chi-square analysis, we need to create a contingency table that shows the frequencies of each response category. Then we can calculate the chi-square statistic to test our hypotheses. Here is the contingency table based on the provided data:

| Response Category      | Frequency |
|------------------------|-----------|
| Very influential       | 71        |
| Slightly influential   | 82        |
| Moderately influential | 93        |
| Not at all influential | 66        |
| Extremely influential  | 8         |

**Table no. 19**

Now, let's calculate the chi-square statistic using this table. We need to calculate the expected frequencies for each response category under the null hypothesis ( $H_0$ ) and then use the formula for the chi-square statistic:

Now we can calculate the chi-square statistic:

| Response Category      | Observed (O) | Expected (E) | (O-E) <sup>2</sup> /E |
|------------------------|--------------|--------------|-----------------------|
| Very influential       | 71           | 64           | 0.766                 |
| Slightly influential   | 82           | 64           | 5.063                 |
| Moderately influential | 93           | 64           | 13.188                |
| Not at all influential | 66           | 64           | 0.063                 |
| Extremely influential  | 8            | 64           | 46.313                |
| Total                  | 320          | 320          | 65.393                |

**Table no. 20**

The chi-square statistic is 65.393. Now we compare this value to the critical value from the chi-square distribution table with  $k-1$  degrees of freedom ( $df=5-1=4$ ) at a significance level of 0.05.

The critical value for  $df=4$  and  $\alpha=0.05$  is 9.488.

Since  $65.393 > 9.488$ , we reject the null hypothesis ( $H_0$ ) and accept the alternative hypothesis ( $H_1$ ). Therefore, advertising has a significant positive impact on consumers' purchase decisions of OTC (pain relief) drugs.

**Conclusion:** Advertising has a significant positive impact on consumers' purchase decisions of OTC (pain relief) drugs.

## Hypothesis 2

**Null Hypothesis ( $H_0$ ):** Advertisement of OTC pain relief drugs significantly influence consumer trust.

**Alternative Hypothesis ( $H_1$ ):** Advertisement of OTC pain relief drugs significantly influence consumer trust.

Let's begin by creating a contingency table based on the given data:

| Response Category | Frequency |
|-------------------|-----------|
| Yes               | 150       |
| Sometimes         | 124       |
| No                | 106       |

**Table no. 21**



Now, we'll perform a chi-square analysis. We'll calculate the expected frequencies for each category under the null hypothesis ( $H_0$ ), assuming the responses are equally likely:

| Response Category | Observed (O) | Expected (E) | (O-E) <sup>2</sup> /E |
|-------------------|--------------|--------------|-----------------------|
| Yes               | 150          | 126.67       | 4.95                  |
| Sometimes         | 124          | 126.67       | 0.06                  |
| No                | 106          | 126.67       | 3.45                  |
| Total             | 380          | 380          | <b>8.46</b>           |

**Table no 22**

The chi-square statistic is 8.46. We compare this value to the critical value from the chi-square distribution table with  $k-1$  degrees of freedom ( $df=3-1=2$ ) at a significance level of 0.05.

The critical value for  $df=2$  and  $\alpha=0.05$  is 5.991.

Since  $8.46 > 5.991$ , we reject the null hypothesis ( $H_0$ ) and accept the alternative hypothesis ( $H_1$ ). Therefore, advertisement of OTC pain relief drugs significantly influences consumer trust.

**Conclusion:** Advertising of OTC pain relief drugs significantly influences consumer trust

## FINDINGS

### Hypothesis 1: Impact of Advertising on Consumer Purchase Decisions.

To test the hypothesis that advertising has a significant positive impact on consumers' purchase decisions of OTC pain relief drugs, we conducted a chi-square analysis based on the collected data.

#### Findings:

**Chi-Square Analysis:** We calculated the chi-square statistic to compare observed frequencies against expected frequencies under the null hypothesis (no Data significant impact).

- o Calculated chi-square statistic: 65.393
- o Critical value ( $df = 4, \alpha = 0.05$ ): 9.488

**Conclusion:** Since the calculated chi-square statistic (65.393) is significantly higher than the critical value (9.488), we reject the null hypothesis and accept the alternative hypothesis. Therefore, we conclude that advertising has a significant positive impact on consumers' purchase decisions of OTC pain relief drugs.

### Hypothesis 2: Impact of Advertising on Consumer Trust.

To test the hypothesis that advertising of OTC pain relief drugs significantly influences consumer trust, we conducted another chi-square analysis based on the collected data.

## Findings:

**Chi-Square Analysis:** We calculated the chi-square statistic to compare observed frequencies against expected frequencies under the null hypothesis (responses are equally likely).

- o Calculated chi-square statistic: 8.46
- o Critical value ( $df = 2$ ,  $\alpha = 0.05$ ): 5.991

**Conclusion:** Since the calculated chi-square statistic (8.46) is higher than the critical value (5.991), we reject the null hypothesis and accept the alternative hypothesis. Therefore, we conclude that advertisements of OTC pain relief drugs significantly influence consumer trust

## LIMITATION

Study Limitations Data from just 315 respondents from Gujarat and Maharashtra are included in the study. Furthermore, convenience and stratified sampling was employed. It is possible that a research sample is not entirely representative of the population under study.

1. The use of a questionnaire may have skewed the data.
2. Information is gathered from a randomized sample.
3. The unwillingness of people to share information.
4. It is possible that a research sample is not entirely representative of the population under study.
5. The research area was constrained.

## CONCLUSION

Our analysis reveals a significant impact of advertisements for OTC pain relief drugs on consumers' purchase decisions and trust. This highlights the crucial role that effective advertising strategies play in the pharmaceutical market. By employing persuasive messaging and targeted marketing, advertisers have the potential to shape consumer behavior and preferences. A substantial portion of consumers respond positively to advertisements, often leading to increased trust and a higher likelihood of choosing advertised products. This underscores the power of wellcrafted advertising campaigns to influence consumer choices and perceptions. Moreover, the impact of advertisements varies across different demographic segments. For instance, age groups and genders exhibit distinct responses to advertising messages, suggesting that a one-size-fits-all approach may not be effective. Tailored advertising strategies that consider the unique preferences and characteristics of diverse demographic groups can enhance the overall effectiveness of marketing efforts. Understanding these variations allows pharmaceutical companies to design and implement advertising campaigns that resonate more deeply with specific target audiences, ultimately driving better outcomes for both consumers and the industry. In conclusion, our study emphasizes the importance of strategic and well-targeted advertising in the pharmaceutical market. By recognizing and addressing the diverse responses of different demographic segments, advertisers can create more impactful campaigns that positively influence consumer behavior and trust in OTC pain relief products.

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