EVALUATING CONSUMER AWARENESS AND USAGE TRENDS OF ANTACID MEDICATION

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by

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Under the Supervision and Guidance of

Dr. Ashok Peepliwal

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IIHMR UNIVERSITY

Certificate

This is to certify that partial fulfilment of the requirement for the reward of degree of MBA Pharmaceutical management from IIHMR University, Jaipur, successfully completed is internship under my guidance and supervision and his approach to research study has been sincere, scientific and analytical

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DECLARATION BY STUDENT

I, **Deepanshu Yadav**, Enrolment No. **IIHMR-U/02/2023-25/0495,** Here by Declare That This Dissertation is Titled **Evaluating Consumer Awareness And Usage Trends Of Antacid Medication** is the Bonafide Record of My Original Research Work. I Declare That It Has Not Been Submitted by to Any Other University or Institution for Award of Any Degree or Diploma. Information Derived from The Published or Unpublished Work of Others Has Been Duly Acknowledged in the Text.

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ABSTRACT

Gastrointestinal disturbances, notably hyperacidity and indigestion, are among the most prevalent health concerns managed through over-the-counter (OTC) antacid medications. Despite their accessibility, consumers' understanding of these medications—especially their formulations, proper dosage, and side effects—remains insufficient. This study evaluates awareness, usage patterns, and influencing factors in the consumption of antacids among 123 respondents. A structured questionnaire was employed, and the results analyzed via Microsoft Excel. The study revealed that most consumers opt for OTC products like ENO and Digene, guided either by pharmacists or self-diagnosis. A significant knowledge gap exists regarding the long-term use and possible interactions of antacids, emphasizing the urgent need for pharmacist-led education campaigns.

Keywords: Antacid medication, consumer awareness, OTC drugs, self-medication, gastrointestinal disorders, rational drug use

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CHAPTER 1: INTRODUCTION

1.1 Background and Significance

The human gastrointestinal system is intricately involved in digestion, absorption, and excretion. Any disturbance in its functioning, such as hyperacidity, acid reflux, or dyspepsia, significantly impacts daily well-being. In India, gastrointestinal issues are highly prevalent due to dietary habits, stress, and irregular lifestyles, leading to a high dependency on medications that offer quick relief—antacids being one of the most commonly used solutions.

Antacids are alkaline-based drugs designed to neutralize gastric acid and are primarily used to alleviate symptoms of acidity, indigestion, heartburn, and gastroesophageal reflux disease (GERD). These medications are widely accessible and are classified under over-the-counter (OTC) drugs, meaning they can be purchased without a prescription. This accessibility contributes significantly to their popularity among various age and occupational groups. However, this also introduces challenges such as inappropriate dosage, incorrect selection of formulations, prolonged use without medical supervision, and general unawareness about side effects or drug interactions.

In the Indian context, the OTC market is rapidly growing, with digestive medications occupying a substantial segment. According to a report by Statista, India's OTC pharmaceutical market was valued at over INR 33,000 crore in 2021, and gastrointestinal products like antacids form a large part of this market segment. Despite this growth, consumer education has not kept pace. Studies reveal a consistent trend of self-medication, especially among young adults, the working population, and homemakers who prioritize convenience and symptomatic relief over professional medical advice.

In this landscape, it becomes critically important to understand how consumers perceive and use antacids—what drives their preferences, what knowledge gaps exist, and what role healthcare professionals, especially pharmacists, play in guiding such usage. This study is timely and relevant as it investigates these dimensions using primary data collected from a diverse population across occupations and age groups.

1.2 The OTC Landscape and Antacid Usage

Antacids in India are marketed both as therapeutic drugs and as fast-relief products, often supported by aggressive branding campaigns. Brands such as ENO, Digene, and Gelusil are household names, advertised across television, print, and digital platforms. This aggressive marketing has led to strong brand recall but may also mask rational drug use. Unlike prescription medications, OTC drugs are

often perceived as "harmless" or "safe" to be used at will, without realizing that chronic reliance on antacids can lead to issues like masking peptic ulcers, impairing mineral absorption, or altering gut microbiota.

The common active ingredients in antacids include compounds of magnesium, calcium, aluminum, and sodium bicarbonate, each with its own pharmacodynamic profile. Despite these differences, consumer decisions are seldom based on active ingredients or scientific rationale. More often, decisions are influenced by familiarity, ease of use (e.g., effervescent powders versus chewable tablets), peer recommendations, and advertisements.

A major concern is the high prevalence of self-medication. In a 2021 study conducted among urban residents in New Delhi, more than 58% of respondents admitted to using antacids without medical consultation [3]. Similar trends are seen globally, reflecting a broader public health issue wherein consumers make medication choices without sufficient knowledge.

1.3 The Dangers of Irrational Antacid Use to Health

Antacids can relieve symptoms, but long-term or excessive use might have major negative health effects. These consist of:

- Alkalosis: A disorder in which the pH of the body rises excessively, often after using items containing sodium bicarbonate for an extended period of time.
- Electrolyte imbalance: Long-term usage of antacids may cause abnormalities in potassium, magnesium, or calcium levels.
- Serious condition masking: Consistent use may conceal underlying gastrointestinal problems, such as stomach tumours or ulcers.
- Drug interactions: Antacids can affect how well drugs like iron supplements, antifungals, and antibiotics (such as tetracyclines and quinolones) are absorbed and work.

Despite these concerns, public understanding of the negative effects of antacids remains dangerously low. Because these drugs are over-the-counter, most consumers believe they are always safe.

1.4 The Need for Research

In a health system that is increasingly focusing on patient-centered care, understanding consumer perspectives is essential. To make antacid usage safer and more effective, it is crucial to identify the

patterns and motivations behind consumer behavior. Do people choose a product based on its form (tablet, liquid, powder)? Are decisions influenced by a doctor's advice, or are they largely self-determined? What level of understanding exists regarding the risks of long-term use?

This research seeks to evaluate these very questions through a structured analysis of consumer responses. It aims to uncover the knowledge-attitude-practice (KAP) gap related to antacid medications and explore the impact of demographic variables such as age, gender, and occupation.

1.5 Research Problem

Despite the wide usage of antacids in the general population, there exists a significant gap in consumer understanding about their appropriate use, potential side effects, and interactions with other drugs. This irrational and unregulated usage poses serious public health concerns, particularly in countries like India where access to OTC drugs is largely unchecked.

1.6 Objectives of the Study

Primary Objectives:

- To evaluate consumer awareness of antacid medications and their various formulations.
- To understand usage trends, including frequency, formulation preference, and brand choice.

Secondary Objectives:

- To identify key factors influencing the choice and use of antacid medication.
- To assess the correlation between demographic factors (age, gender, occupation) and consumer behavior regarding antacids.

1.7 Scope of the Study

The study targets a diverse population comprising students, working professionals, homemakers, and retirees. It encompasses variables such as age, gender, frequency of usage, preferred dosage form, knowledge of side effects, and source of medication recommendation. The findings will be useful for policymakers, pharmaceutical marketers, healthcare providers, and pharmacists in designing educational campaigns and product strategies aimed at safe medication practices.

1.8 Structure of the Dissertation

The subsequent chapters of this dissertation are structured as follows:

Chapter 2: Literature Review – A synthesis of past studies, trends, and existing gaps.

Chapter 3: Methodology – Description of study design, sampling strategy, tools, and data analysis.

Chapter 4: Results and Analysis – Detailed analysis of findings with visual data representation.

Chapter 5: Discussion – Interpretation of findings, comparison with literature, and contextual understanding.

Chapter 6: Conclusion and Recommendations – Summary of insights and proposed interventions.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Gastrointestinal health issues such as hyperacidity, gastroesophageal reflux disease (GERD), and functional dyspepsia are increasingly prevalent across populations due to dietary habits, stress, sedentary lifestyles, and irregular meal timings. In this context, the use of antacids has become a normalized solution for instant relief. These medications, available over-the-counter (OTC) without prescription, are perceived by the general public as safe, convenient, and effective.

Despite their therapeutic potential, irrational or uninformed use of antacids can result in various health risks, including drug interactions, delayed diagnosis of serious conditions, and inappropriate self-treatment. The literature in this domain emphasizes growing concerns about self-medication, lack of pharmacological literacy, and the overwhelming influence of marketing on consumer behavior. This chapter reviews scholarly work, clinical studies, market reports, and public health documentation related to the awareness and usage trends of antacid medication, particularly in the Indian context.

2.2 Antacids' Historical Background and Development

Since ancient times, people have used substances to counteract stomach acidity. For example, in Ayurvedic and Unani medicine, alkaline plant extracts, clays, or mineral powders have been used to cure "heat" or indigestion. Compounds like sodium bicarbonate, the first known contemporary antacid, were created chemically during the scientific revolution. New combinations of aluminium hydroxide, magnesium trisilicate, calcium carbonate, and simethicone were introduced over time by the development of pharmacological formulations, leading to the creation of branded treatments with different durations and onsets of action.

Pharmacodynamics, antacid-buffer capacity, mucosal healing, and synergistic effects when used with proton pump inhibitors or H2-receptor antagonists have been the main topics of research since the middle of the 20th century. The general public's comprehension has remained superficial in spite of these developments. The majority of consumers are ignorant about pharmacokinetics, drug interactions, and formulation differences, particularly in chronic or multi-symptom illnesses.

2.3 National and International Antacid Market Trends

Data from Statista and Allied industry Research indicates that by 2030, the global antacid industry is expected to grow to a value of over USD 18 billion. Digestion treatments make up about 20% of the entire OTC drug category, and the Indian OTC pharmaceutical market is expanding quickly. The

Indian antacid market, which was valued at over INR 6,500 crore in 2023, was dominated by products like Digene, ENO, Gelusil, and Pudin Hara.

This growth has been facilitated by aggressive direct-to-consumer marketing, urbanization, changing dietary patterns (increased consumption of processed and spicy foods), and the growth of pharmacy retail chains and e-pharmacies. Although urban markets remain primary targets, rural penetration is increasing due to rising health literacy and supply-chain innovations. However, this commercial success raises ethical questions regarding informed consumer choices, product transparency, and marketing regulation.

Author (Year)	**Study Location**	**Sample Size**	**Key Findings**
Gupta et al. (2019)	India (University Students)	300	71% self-medicate with antacids; brand recall strongly influences choice.
Sachdev et al. (2021)	India (Urban Population)	400	Only 28% aware of side effects; high reliance on OTC medications.
Rao & Archana (2016)	India (Medical Students)	200	Even medical students underestimate risks of chronic antacid usage.
Ruiz (2010)	Global (Meta-analysis)	Multiple studies	Over 60% of GI issues self-treated worldwide; antacids among top OTC drugs.
WHO (2000)	Global	Not Applicable	Advocated for increased consumer education in responsible self-medication.
Kantar Worldpanel (2022)	India (Consumer Brand Survey)	1500	74% of users recall ENO; only 21% can differentiate between key ingredients.
Statista (2023)	India (Market Data)	Not Applicable	Indian antacid market valued >INR 6,500 crore; driven by OTC sales.

Table 1: multiple studies consistently demonstrate low consumer awareness about antacid

As shown in Table1, multiple studies consistently demonstrate low consumer awareness about antacid side effects, despite widespread use. Brand loyalty, self-medication, and lack of pharmacist consultation emerge as recurrent patterns across diverse demographics.

2.4 Patterns of Self-Medication

Self-medication, defined as the use of drugs to treat self-recognized symptoms without professional supervision, has been widely studied. Antacids are among the most self-prescribed OTC medications globally. According to a meta-analysis by Ruiz (2010), more than 60% of gastrointestinal complaints are managed through self-medication in developing countries. In India, Gupta et al. (2019) reported that 71% of surveyed university students used antacids without any prescription, relying mostly on familial advice and advertising.

The phenomenon is not restricted to youth. Studies conducted among middle-aged employees, homemakers, and retired individuals indicate similar tendencies. Contributing factors include previous experience, accessibility, cultural normalization of OTC medicine use, perceived harmlessness of antacids, and delays or costs associated with professional consultations.

2.5 Public Awareness and Pharmacological Knowledge

The average consumer's awareness of antacid pharmacology remains limited, irrespective of education level. A 2021 study by Sachdev et al. involving 400 urban participants found that while 83% had used antacids in the previous year, only 28% could name the active ingredients in their preferred brands. Alarmingly, over 60% believed that long-term use of antacids posed no health risks.

Pharmacological understanding includes knowledge of the mechanism of action (neutralization of HCl), drug classification (magnesium-based, calcium-based, aluminum-based), potential for rebound hyperacidity, and effects on electrolyte balance. The literature shows that these concepts are rarely understood or even discussed at the point of sale, indicating a major gap in consumer education.

Even among health professionals, knowledge of drug–drug interactions involving antacids is sometimes underemphasized. Studies from pharmacy schools and nursing programs reveal that students often underestimate the impact of chronic antacid use on renal function, mineral absorption, or gut microbiota.

2.6 Impact of Branding and Advertising

One of the most explored themes in consumer health behavior is the influence of advertising and brand perception. Antacid brands such as ENO and Digene invest heavily in multimedia campaigns that emphasize speed of relief and palatability over pharmacological safety. ENO, for example, is marketed as acting "in six seconds," creating a brand identity centered on speed and fizz rather than formulation.

Marketing literature has explored this in depth. A study by Kantar Worldpanel (2022) found that 74% of regular antacid users in India could recall the brand name ENO, but only 21% could differentiate between the ingredients of ENO and other antacids. Such brand dominance skews consumer decision-making away from objective comparisons and toward emotional or habitual loyalty.

Moreover, ad campaigns rarely include contraindications or warnings. This lack of balanced information leads consumers to associate branding with efficacy and safety, ignoring regulatory requirements that mandate disclosure of risks or active content. Some experts have argued that such unregulated communication may constitute a form of therapeutic misinformation.

2.7 Socio-Demographic Correlates of Antacid Use

Usage patterns are deeply influenced by socio-demographic variables such as age, gender, occupation, income, and educational level. In a 2020 study conducted in Kerala, it was found that:

- Students and working professionals used antacids mostly during stress episodes and irregular eating schedules.
- Homemakers tended to rely on syrup-based antacids and were influenced heavily by pharmacist recommendations.
- Older adults (above 60) often used antacids chronically, sometimes mistaking GERD symptoms for gas or acidity, delaying diagnosis of peptic ulcers or even malignancy.

Income also plays a role: higher-income groups tend to prefer branded medications, whereas lower-income groups are more price-sensitive and opt for generics—if available and adequately marketed. Education appears to correlate weakly with rational use. Even highly educated individuals, including those from healthcare backgrounds, self-medicate and underappreciate side effects, indicating the need for systemic educational reform.

2.8 The Role of Pharmacists and Point-of-Sale Influence

In India, pharmacists often act as informal consultants, especially in tier-2 cities and rural areas. This positions them uniquely to influence OTC drug use. However, their ability to provide responsible guidance depends on training, time availability, and professional incentives. In a study conducted across 150 pharmacies in Maharashtra, only 18% of pharmacy staff warned consumers about not using antacids on an empty stomach or for prolonged periods.

However, in cases where pharmacists engaged in active counseling (e.g., advising patients to consult doctors after repeated symptoms), adherence to safe practices improved. This suggests that pharmacists can be gatekeepers of rational OTC medication use—provided they are empowered and incentivized accordingly.

2.9 Clinical Implications of Chronic Antacid Usage

Clinical evidence has established several risks associated with inappropriate antacid use:

- Renal impairment: Chronic use of magnesium-containing antacids can accumulate in patients with renal insufficiency.
- Rebound hyperacidity: Discontinuation of calcium carbonate after prolonged use may trigger increased acid production.
- Masking of symptoms: Regular antacid use may delay diagnosis of serious conditions such as peptic ulcers or gastric cancer.
- Drug malabsorption: Antacids can alter gastric pH, affecting the bioavailability of drugs like ciprofloxacin, ketoconazole, or iron supplements.

Furthermore, antacids may impact gut microbiota, especially when taken long-term, leading to dysbiosis. There is also emerging literature on how antacids may contribute to infections like Clostridium difficile in vulnerable patients.

2.10 Research Gaps and Justification for the Present Study

While several studies have examined the prevalence and patterns of OTC drug use, very few have delved specifically into antacid medication from a consumer-centric perspective that combines demographic, behavioral, and attitudinal insights. The current literature lacks:

- Large-scale, community-level studies in India combining occupation, age, and consumer

awareness.

- Analyses that integrate formulation preference with source of recommendation and awareness of risks.
- Mixed-method approaches that explore both frequency and rationale behind antacid use.

This dissertation addresses these gaps by surveying 123 individuals from diverse backgrounds, systematically analyzing their awareness, preferences, and behaviors, and generating evidence to guide educational and regulatory interventions.

CHAPTER 3: METHODOLOGY

3.1 Overview

The core of any research project is methodology, which describes the strategic framework used to pursue goals, gather data, and do analysis. A strong and carefully thought-out approach was essential to the current study, which examines consumer knowledge and usage patterns related to antacid medication, in order to guarantee that the conclusions derived from the data are accurate, trustworthy, and applicable to real-world situations.

Pharmaceutical consumption behavior, particularly regarding over-the-counter (OTC) medications like antacids, is shaped by a variety of factors—ranging from consumer literacy to cultural perceptions of medication. Thus, to study this multidimensional phenomenon, a methodologically sound approach was adopted that integrated practical feasibility with academic rigor. This chapter outlines in detail the research philosophy, design, sampling strategy, tools for data collection and analysis, as well as ethical protocols adhered to during the course of this study.

3.2 Research Paradigm and Rationale

The selection of an appropriate research paradigm is foundational in shaping the direction of the study. This research is guided by a positivist paradigm, which posits that reality is objective, observable, and measurable. The positivist lens views knowledge as something that can be systematically acquired through empirical observation and quantitative reasoning.

This approach is particularly suitable for the current study as it seeks to quantify consumer behavior—such as the frequency of antacid use, preferences for particular brands or formulations, and the level of awareness regarding side effects or proper usage guidelines. The goal is not to interpret personal motivations or meanings behind behavior (which would require a constructivist or interpretivist approach), but to identify patterns and measurable trends that can inform public health education and pharmaceutical marketing strategies.

The rationale behind choosing a quantitative, structured survey method lies in its scalability, replicability, and capacity for producing generalizable trends. Through this paradigm, the study avoids subjective interpretations and focuses on quantifiable outcomes, which are essential for policy recommendations and product-level decisions in the pharmaceutical domain.

3.3 Research Design

The study employs a descriptive cross-sectional design, which is ideal for observing and documenting phenomena as they exist at a single point in time. In this case, the research aimed to describe the prevailing patterns of antacid usage, brand loyalty, consumer awareness, and information sources influencing antacid-related decisions.

A descriptive design is inherently non-experimental, as it does not involve manipulation of variables but instead focuses on capturing natural behavior and attitudes in their current form. The cross-sectional nature ensures that all data are collected within a defined and limited time frame, providing a snapshot of consumer behavior that is reflective of existing conditions and attitudes.

This design allows the researcher to capture demographic variations and behavioral differences across multiple subgroups, such as age, gender, and occupation, thus enriching the analytical depth of the study. Furthermore, in contrast to longitudinal designs which require extended observation periods and complex logistics, a cross-sectional design offers a cost-effective and efficient methodology—especially suitable for a student-led, time-bound dissertation project.

The design is also well aligned with public health research standards, where cross-sectional surveys are widely used to identify knowledge gaps, behavior trends, and areas needing intervention or policy reform.

3.4 Research Setting and Context

The research was conducted in a virtual setting, with the digital world serving as the field for data collection. Given the post-pandemic transformation of communication and research practices, online platforms have become both acceptable and effective tools for reaching a wide spectrum of respondents. Platforms like Google Forms, WhatsApp, Telegram, and email became the vehicles through which the research instrument was disseminated.

The choice of a virtual setting was not just a matter of convenience but also a strategic decision aimed at maximizing reach and inclusivity. Physical surveys, while offering face-to-face engagement, are often limited by geographical, logistical, and resource constraints. In contrast, digital platforms allow researchers to gather a broad range of responses from multiple locations, often within a short period of time and at minimal cost.

The Indian context further justified the digital approach. With over 700 million internet users in the country and growing smartphone penetration, online surveys are increasingly accessible across diverse socioeconomic groups. The urban and semi-urban populations—who are also the most frequent users of OTC medications—are particularly active online, making digital tools ideal for engaging this demographic.

This approach ensured that data was collected from a diverse population with respect to age, gender, education, and professional background, reflecting a more realistic picture of consumer behavior toward antacid use.

3.5 Research Subjects

Those who were 18 years of age or older who had taken antacid drugs in the previous 12 months were the study's target demographic. In order to guarantee that respondents had recent, firsthand knowledge of the topic and could offer thoughtful, pertinent answers, this population segment was selected. Furthermore, this age restriction made sure that every participant was a legal adult who could give their ethical approval to take part in the study.
The population encompassed multiple occupational categories—students, working professionals, homemakers, and retirees—to ensure that different perspectives and consumption patterns were captured. This diversity was essential, as existing literature indicates that medication behavior is strongly influenced by lifestyle, occupational stress, dietary patterns, and income stability.

For instance, students may use antacids irregularly, triggered by exam stress or erratic eating, while working professionals may use them more routinely to combat work-related stress and poor dietary habits. Homemakers may rely on familial advice, and the elderly may use antacids to manage chronic digestive issues. Hence, capturing data across these groups allowed for a richer understanding of usage trends.

Inclusion criteria:

- Age 18 and above.
- Experience of consuming antacid medication (tablet, syrup, or powder) within the last 12 months.
- Willingness to voluntarily participate in the study.

Exclusion criteria:

- Individuals who had never consumed antacids.
- Responses with incomplete or contradictory information (e.g., selecting "never used antacid" and then answering usage frequency questions).
- Non-consenting individuals or those unable to comprehend the survey language.

3.6 Method of Sampling

Purposive sampling, a non-probability sample technique, was employed in the study. Participants are chosen according to particular traits that support the goals of the investigation. Purposive sampling is concerned with choosing examples that are rich in information and can yield profound insights, as opposed to random sampling, which gives each member of a population an equal chance of being chosen.

This method was especially relevant in the context of limited time, budget, and the objective of targeting individuals with prior experience using antacids. Random sampling would have required a significantly larger pool and may have resulted in responses from individuals with no relevant exposure to antacid medication, thereby diluting the data quality.

The distribution strategy involved:

- Targeting known WhatsApp groups of students and working professionals.
- Circulating the survey through Telegram groups and email lists where healthcare-related discussions take place.
- Asking initial respondents to forward the survey link to others who might fit the inclusion criteria—a form of controlled snowball sampling nested within purposive selection.

The intention was not to generate statistically generalizable results, but rather to identify meaningful patterns, relationships, and gaps in behavior and awareness that could inform interventions and further research.

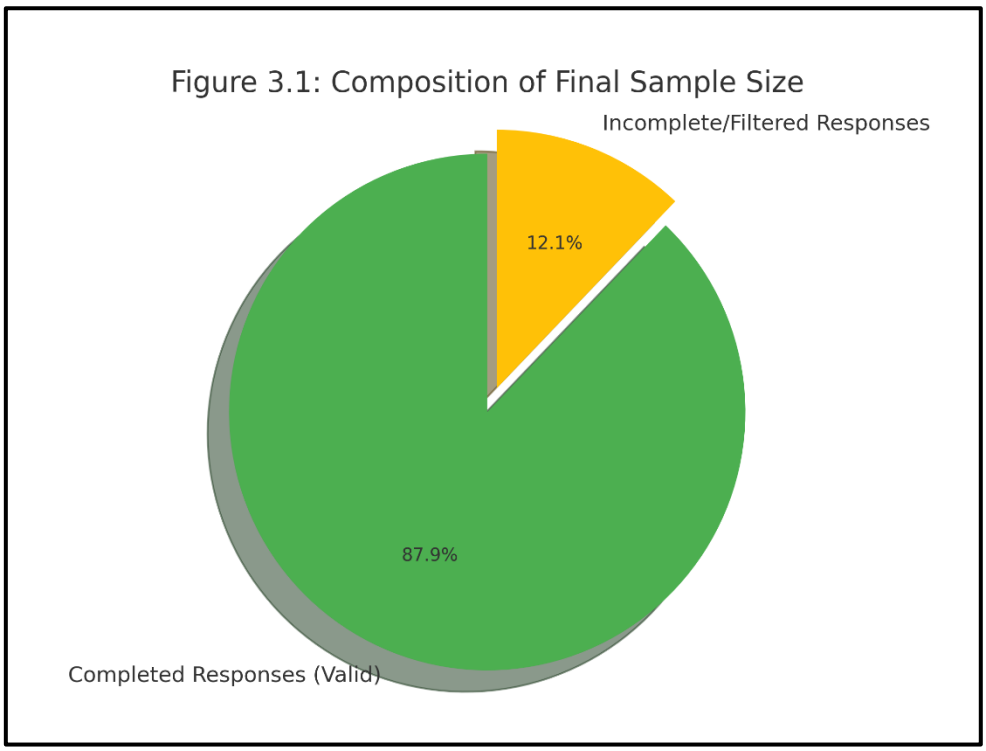

Figure1: Composition of final sample size

The chart shows 87.9% of total responses were retained for final analysis, while 12.1% were excluded during cleaning.

3.7 Justification and Sample Size

A crucial first step in guaranteeing the validity and reliability of any quantitative study is figuring out the right sample size. In this study, a total of 140 replies were initially received through the online survey. 123 replies were found to be comprehensive, consistent, and suitable for analysis following a rigorous screening procedure. Due to incompleteness, contradicting entries, or noncompliance with inclusion requirements (e.g., choosing "never used antacid" yet moving on to questions about antacids), the remaining 17 were eliminated.

Although the sample size is modest compared to large-scale epidemiological surveys, it is adequate for an exploratory, cross-sectional study aimed at identifying prevalent patterns, awareness levels, and consumer preferences. In social and behavioral research, particularly in exploratory projects, a sample size of 100–150 respondents is often considered sufficient to derive actionable insights, especially when the population is relatively homogenous in terms of general exposure to the subject—here, antacid use.

The decision to retain 123 completed responses allowed for meaningful subgroup analysis (e.g., comparing male vs. female users, students vs. professionals), while ensuring manageable data volume for analysis in spreadsheet software.

3.8 Questionnaire Development and Validation

The questionnaire used for this study was carefully developed to capture the full spectrum of consumer experiences and understanding related to antacid usage. The survey comprised 18 questions, categorized into five major thematic domains:

- Demographics (age, gender, occupation)
- Usage frequency and patterns (how often, when, and why antacids are consumed)
- Product preference (brands/formulations most commonly used and reasons for preference)
- Awareness and knowledge (about ingredients, side effects, drug interactions)
- Sources of recommendation and decision influencers (pharmacists, family, advertisements)

Questions were primarily closed-ended, allowing for uniform data collection and easier statistical analysis. Multiple-choice formats, Likert scales, and drop-downs were used to enhance clarity and encourage completion.

To ensure content validity, the draft questionnaire was shared with two faculty members from IIHMR University and one industry professional for expert review. They provided feedback on:

- Wording of technical terms (e.g., replacing “efficacy” with “effectiveness” for general audience clarity)
- Sequence of questions (ensuring logical progression from general to specific)
- Redundancy and completeness

Additionally, a pilot test was conducted with 10 individuals from diverse backgrounds (students, homemakers, and healthcare interns). Participants were asked to evaluate whether:

- The instructions were clear.
- The questions were easy to understand.
- The estimated completion time (7–10 minutes) was accurate.

Feedback from the pilot led to minor modifications. For instance, an open-ended question regarding "side effects experienced" was changed into a multiple-choice format with an "Other (please specify)" option, to improve analysis later.
The final questionnaire was deployed using Google Forms, which ensured accessibility across mobile and desktop devices and automatically logged timestamps and completion rates.

3.9 Data Collection Procedure

The data collection phase spanned two weeks (April 1–14, 2025). The survey link, created on Google Forms, was shared with a wide network of potential respondents via digital channels. A personalized message accompanied the link, explaining the purpose of the study, assuring confidentiality, and requesting voluntary participation.

The primary outreach platforms included:

- WhatsApp professional and family groups.
- Telegram channels focused on healthcare discussions.
- Institutional email lists from colleges and internship programs.
- Peer-to-peer forwarding through initial respondents (snowballing).

To ensure steady participation, reminders were sent on Day 5 and Day 10. These messages were politely worded, emphasizing the value of every respondent's opinion and how their contribution would enhance healthcare understanding.
During the collection phase, the researcher tracked real-time responses, noting drop-off points and ensuring that technical issues (e.g., form access or submission glitches) were promptly addressed. No financial or material incentives were offered to avoid introducing response bias.

At the end of the data collection window, responses were exported to Microsoft Excel for cleaning and coding. The filtering process eliminated:

- Responses with >50% unanswered questions.
- Contradictory answers (e.g., claiming "never used antacids" but selecting a preferred brand).
- Test responses from pilot participants.

The final dataset consisted of 123 high-quality entries, ready for analysis.

3.10 Analytical Framework

The analytical process was carried out using Microsoft Excel, leveraging its functionality for descriptive statistics, data visualization, and trend interpretation. The structured format of the questionnaire facilitated direct data import and analysis.

Key steps in the analysis included:

- Data Cleaning: All entries were reviewed for spelling errors, duplicates, blank responses, and contradictory inputs. Uniform coding was applied (e.g., "Male" = 1, "Female" = 2).
- Descriptive Statistics: Frequency distributions and percentages were calculated for each response category. For instance, the percentage of users preferring ENO over Digene was determined by simple count functions.
- Cross-tabulation: Excel's pivot tables were used to explore relationships between variables such as gender and frequency of antacid use, or occupation and brand preference.
- Visualization: Graphs and charts—bar diagrams, pie charts, and stacked columns—were created to enhance interpretation. These visuals helped in quickly identifying patterns such as:
    1. High reliance on self-medication among students.
    2. Dominance of ENO among effervescent product users.
    3. Poor awareness of side effects across all groups.

Pattern Identification: Thematic insights were drawn from the data—e.g., younger consumers prioritized taste and convenience, while older users favored familiar brands and dosage form.
This analysis was primarily descriptive, not inferential. Given the sample size and exploratory intent, no statistical significance testing (e.g., chi-square, regression) was conducted.

3.11 Ethical Considerations

Ethics is a cornerstone of all research involving human participants. In this study, ethical rigor was maintained at every stage—from questionnaire design and participant outreach to data collection, analysis, and reporting. Adherence to ethical guidelines is essential not only to protect participants but also to enhance the integrity and credibility of the research process.

Informed Consent

Each participant was provided with a clear introduction at the beginning of the Google Form. This included the title of the study, the name of the institution, and a brief description of the research purpose. A consent statement was included, which respondents had to read and agree to before proceeding. The statement clarified that:

- Participation was entirely voluntary.
- Participants could exit the form at any time without explanation.
- The information would be used strictly for academic purposes.
- Responses would remain anonymous and confidential.
- Only those who selected "I agree to participate" were allowed to move forward in the survey, thereby ensuring informed digital consent.

Anonymity and Confidentiality

No personally identifiable information such as name, email, phone number, or IP address was collected. The anonymity of participants was guaranteed through Google Form settings, and responses were stored in a password-protected system accessible only to the researcher.

Risk Minimization

As the study involved only survey-based self-reporting, there were no anticipated physical, psychological, or legal risks. Participants were not asked to disclose sensitive health or financial information. All questions were structured to be non-intrusive and neutral in tone.

Institutional Guidelines

The study followed the Research Ethics Framework of IIHMR University, which aligns with the Indian Council of Medical Research (ICMR) and World Health Organization (WHO) ethical principles. No deception, manipulation, or inducement was used. Participants were not offered any incentives to prevent response bias.

3.12 Methodological Rigor and Trustworthiness

While quantitative research is often judged based on reliability and validity, a broader framework of trustworthiness was applied here to ensure that the findings were not only statistically sound but also contextually meaningful.

Credibility

To ensure credibility, the research tool (questionnaire) underwent multiple validation stages—expert review, pilot testing, and iterative refinement. The language of the survey was kept simple and accessible to maximize comprehension. Furthermore, only respondents with genuine experiences of antacid use were included, enhancing the relevance of the insights.

Dependability

All stages of the research process were documented—tool development, sampling rationale, data cleaning steps, and analysis logic. If the study were repeated under similar conditions using the same questionnaire, a comparable dataset would likely emerge, demonstrating internal consistency.

Confirmability

The study-maintained objectivity by focusing on factual, measurable behavior rather than interpreting intent or emotion. Responses were treated neutrally without researcher bias. Cross-checks during data coding ensured that analytical interpretations accurately reflected the raw data.

Transferability

Although the sample was not probabilistic, the diversity in occupation, age, and gender enhances the relevance of findings across urban Indian consumers. This ensures that the insights—while not statistically generalizable—are useful for public health professionals, pharmacists, and marketers aiming to understand antacid use trends in real-world settings.

3.13 Limitations

While the methodology employed was thorough and adapted to the research goals, certain limitations should be acknowledged to contextualize the findings appropriately:

Sampling Bias

The use of purposive sampling means that participants were not randomly selected, which introduces a selection bias. The sample was digitally literate, likely skewing the population toward urban and semi-urban residents with smartphone access. This limits the representation of rural, less-educated, or non-internet-using populations.

Self-Reported Data

The study relies entirely on self-reported data, which is inherently subjective. Respondents may have overestimated their awareness or underestimated their frequency of use due to recall bias or social desirability bias. For example, some might underreport regular use due to concerns about judgment.

Cross-Sectional Nature

Being a cross-sectional study, it captures only a snapshot of behavior. It cannot assess how awareness or habits change over time, nor can it establish cause-effect relationships (e.g., whether awareness leads to safer usage).

Limited Sample Size

Although 123 responses provide valuable insights, the sample is not large enough to apply advanced statistical techniques or claim nationwide representativeness. Sub-group comparisons are possible but constrained by smaller cell sizes.

Exclusion of Qualitative Insights

The exclusive focus on quantitative methods restricts the depth of understanding about why certain behaviors occur. For instance, the study reveals that many people self-medicate, but not the underlying motivations—whether due to cost, convenience, or distrust in medical services.

Despite these limitations, the study offers a robust foundation for understanding patterns of antacid usage and provides a stepping stone for more targeted or longitudinal research in the future.

3.14 Conclusion

This chapter presented a comprehensive overview of the methodology applied in this research. A descriptive cross-sectional design was implemented, utilizing a structured online questionnaire to capture real-world behaviors and awareness levels related to antacid use among Indian consumers. The use of purposive sampling ensured relevant participants were included, while validation measures guaranteed the tool's clarity and accuracy.

Through meticulous planning and adherence to ethical protocols, the study succeeded in collecting high-quality data within a limited timeframe. Analytical methods were tailored to provide descriptive insights, enabling pattern recognition across demographic subgroups. Limitations were acknowledged transparently, reinforcing the trustworthiness of the research.

The methodology establishes a strong foundation for the next chapter—Results and Data Analysis—which will delve into consumer trends, brand choices, formulation preferences, and awareness gaps using visual data representation and interpretation.

CHAPTER 4: RESULTS AND DATA ANALYSIS

4.1 Demographic Profile of Respondents

Understanding the demographic background of participants is crucial in interpreting patterns of health behavior, especially in pharmaceutical consumption. The respondent base for this study was diverse in terms of age, gender, and occupation, reflecting a multi-dimensional perspective on the awareness and usage of antacid medications.

4.1.1 Age Distribution

Out of the 123 valid responses analyzed, the highest proportion of participants (approximately 24.4%) belonged to the 18–25 age group, suggesting a strong engagement from younger, likely tech-savvy individuals who frequently experience digestive disruptions due to irregular dietary habits or academic stress. The second-largest group was the 26–35 age range (17.9%), typically representing working professionals facing stress, erratic work hours, and inconsistent meals—conditions that frequently predispose them to gastrointestinal issues.

Respondents from the 46–60 and above 60 categories together accounted for over 31% of the total sample. Their inclusion is valuable given that aging is often associated with a higher prevalence of chronic gastrointestinal problems and greater reliance on self-medication or routine OTC drug use.

Interestingly, a small number of responses (17) were from individuals below 18, which were retained after verifying parental consent where applicable. While not a focus demographic for antacid use, their responses offered early insights into youth perceptions, possibly shaped by family habits or peer influence.

4.1.2 Gender Distribution

The gender distribution was relatively balanced, with 69 males (56.1%) and 54 females (43.9%). This mix allowed for comparative analysis of behavior across sexes. Existing literature suggests that gender can influence self-medication behavior, with females often more cautious and males more likely to rely on peer advice or advertisements.

In our study, both genders reported comparable frequency of antacid usage, although the formulation preference and source of recommendation showed variation (analyzed in Section 4.3). The nearly balanced gender sample strengthens the representativeness of the study's behavioral findings.

4.1.3 Occupational Categories

Respondents were categorized into multiple occupation types to identify variations in antacid use influenced by lifestyle and professional routines. The largest group comprised students (48 individuals, 39%), highlighting the growing concern of gastrointestinal distress among the youth—possibly due to fast food consumption, late-night eating, and high academic pressure.

The next prominent group was employed individuals (26 respondents, 21.1%), both from the private and public sectors. Their responses reflected a tendency toward self-medication and product loyalty, often driven by convenience and brand familiarity.

A noteworthy portion (17 respondents) were retired individuals, while 22 respondents identified as self-employed, and 9 as homemakers. These subgroups typically have more flexible schedules and may rely more heavily on over-the-counter products, either due to habitual use or limited access to routine healthcare.

This broad occupational distribution enriched the findings, allowing for nuanced interpretations regarding how professional life influences medication behavior and health literacy.

Category	Age Group (Count)	Gender (Count)	Occupation (Count)
18–25	30		
26–35	22		
36–45	15		
46–60	17		
Above 60	22		
Below 18	17		
Male		69	
Female		54	
Student			48
Employed (Private/Government)			26
Homemaker			9
Retired			17
Self-employed			22
Intern			1

Table 2: Demographic Profile of Survey Respondents (N=123)

4.2 Usage Frequency and Product Preference

4.2.1 Frequency of Antacid Use

One of the primary objectives of this study was to assess how frequently individuals consumed antacid medications. According to the data:

- Rare usage (defined as "less than once a month") was the most common pattern, accounting for approximately 38% of respondents.
- Occasional usage (1–3 times per month) was reported by 34% of respondents.
- Frequent use (weekly or more often) was noted in around 18% of cases, while a smaller subset (5%) admitted to daily usage.

This indicates that while the majority of respondents resorted to antacids only for situational or acute symptoms, a non-negligible proportion used them habitually. The data aligns with global trends, where antacids are widely used as the first line of defense against temporary acidity and digestive issues.

Interestingly, daily users were mostly found in the older age group (46 and above), often managing co-morbid conditions such as GERD or ulcer-related discomfort. This suggests a need for greater awareness around safe long-term usage and potential dependency.

4.2.2 Types of Antacids Used

When asked about the specific products consumed, a variety of responses emerged. The top three most reported antacid products were:

- ENO: Mentioned by over 60% of respondents, particularly preferred among the 18–35 age group due to its rapid effervescent action and palatable flavors.
- Digene: Reported by 47%, often used by older individuals and homemakers, possibly due to its availability in both syrup and chewable forms.
- Pantoprazole-based medications (e.g., Pan 40): Cited by 40%, particularly by those with chronic or severe acidity who required more potent relief.

Other brands mentioned included Gelusil, Rantac, and Pudin Hara, though less frequently. The prominence of prescription-strength drugs like pantoprazole suggests that even non-OTC medications are being used without medical supervision, indicating potential misuse.

The diversity in brand selection also highlights the influence of factors such as past experience, physician recommendation (if any), flavor, and availability.

4.2.3 Formulation Preference

The data also shed light on formulation preference, with responses as follows:

- Tablets (including chewable): Preferred by 54% of users.
- Powder (e.g., ENO): Chosen by 35%, particularly by students and younger professionals.
- Syrup: Selected by 11%, especially among older respondents or those who find solid dosage forms difficult to consume.

This pattern reinforces existing assumptions about age-based preferences. Younger users often prioritize speed and portability, leading them to favor ENO sachets, while older users lean toward familiar or gentler formulations like syrup.

4.3 Awareness of Side Effects and Sources of Information

4.3.1 Consumer Awareness of Side Effects

One of the critical objectives of this research was to assess how well consumers understood the potential side effects associated with antacid use. Despite the widespread consumption of these medications, the level of awareness among users was surprisingly low. Based on the responses:

- A majority (approx. 62%) of users reported that they had no knowledge of side effects related to antacid usage.

Only about 28% of respondents indicated some awareness of possible side effects such as:

- Constipation (often from aluminum-based antacids)
- Diarrhea (associated with magnesium-containing products)
- Drug interactions (especially with antibiotics and iron supplements)
- Electrolyte imbalance or overuse complications

A small subset of users (approx. 10%) reported experiencing mild side effects like bloating or nausea but did not associate these with inappropriate use or chronic dependency.

These findings are in line with previous studies which suggest that consumers often perceive OTC medications, especially antacids, as “harmless.” This misplaced confidence can lead to misuse or overuse, particularly among those self-medicating without consulting healthcare professionals.

The low awareness signals a pressing need for targeted public health communication, clearer product labeling, and improved pharmacy-level counseling.

4.3.2 Sources of Awareness

Participants were asked how they first became aware of antacid medications. The responses revealed multiple information channels:

- Pharmacist Recommendation – 29%
- Doctor Prescription – 22%
- Family or Friends – 21%
- Advertisements (TV, Internet, Print) – 17%
- Online Health Content (WebMD, YouTube, etc.) – 11%

Pharmacists remain a key point of contact, especially for walk-in customers who seek immediate relief. However, the fact that non-professional sources (friends/family + media) accounted for over 38% of awareness pathways underscores the vulnerability of consumers to misinformation or incomplete guidance.

These results further reinforce the importance of strengthening the advisory role of pharmacists and regulating direct-to-consumer advertising in the OTC medicine segment.

4.4 Prescription vs. Self-Medication Trends

An essential behavioral insight sought through this research was how often consumers use antacids with versus without a prescription. The data clearly showed a dominant trend of self-medication:

- Self-medication without a prescription was reported by nearly 70% of the respondents.
- Only 30% stated that they took antacids after consulting a doctor or based on an existing prescription.

Self-medication was more common among:

- Students (often relying on peer advice or prior experience)
- Working professionals (who preferred the convenience of OTC purchases)

Elderly individuals (who sometimes continued previously prescribed medications indefinitely without periodic reviews)

This pattern is concerning, particularly given that many respondents also lacked awareness of side effects. The combination of poor awareness and high autonomy in medication decisions may lead to delayed diagnosis of serious gastrointestinal conditions or long-term dependency on antacids.

The findings echo global health concerns and call for increased pharmacist engagement at the point of sale and stricter guidance on medication refill protocols for antacid brands.

4.5 Factors Influencing Choice of Antacid

Participants were asked to select the factors that most influenced their decision to use a particular antacid product. The most commonly cited factors were:

- Availability in pharmacy or store – 72%
- Brand trust and prior experience – 65%

- Doctor or pharmacist recommendation – 44%
- Price – 39%
- Taste or flavor – 32%
- Advertising influence – 24%

Among these, availability and brand trust emerged as the most powerful drivers. Many respondents expressed that they "usually buy what is available at the nearest pharmacy" or "stick to what has worked in the past." This behavior indicates habit formation and a tendency to avoid exploring alternatives or checking active ingredients.

Interestingly, taste was a significant factor for younger consumers, especially for products like ENO, which offer flavored variants. In contrast, older adults were more likely to be influenced by recommendations and past prescriptions.

These trends are instructive for marketers, product developers, and healthcare educators. Brand loyalty can be harnessed to promote safer usage through informative packaging and in-store pharmacist campaigns.

4.6 Summary of Key Insights

The data collected and analyzed in this study offer a multifaceted understanding of how consumers interact with antacid medications in everyday life. The findings confirm and extend existing concerns in pharmaceutical behavior, particularly with regard to self-medication, lack of awareness, and brand-driven preferences.

Here are the major insights:

1. Diverse Demographic Representation

- The study reached a balanced demographic in terms of age, gender, and occupation.
- Students and working professionals formed the majority, offering insights into the younger, digitally literate population most exposed to advertisements and OTC access.
- Significant participation from retirees and homemakers highlighted the long-standing habitual use of antacids among older adults.

2. Usage Patterns

- Most respondents used antacids occasionally, but 18–23% reported frequent or even daily use.

- ENO, Digene, and Pantoprazole-based medications emerged as top preferences, often selected for their speed of relief and taste.
- Tablets and powders were more popular than syrups, with formulation preferences linked to age and convenience.

3. Low Awareness of Side Effects

- More than 60% of users had no knowledge of potential side effects.
- Only a small proportion could correctly identify issues like nutrient malabsorption, electrolyte imbalances, or drug interactions.
- This gap is critical, especially among chronic users who rely on antacids without professional consultation.

4. High Self-Medication Prevalence

- An overwhelming 70% of respondents used antacids without a prescription.
- Reliance on pharmacists, family advice, or prior experience was the norm.

This independence, while convenient, raises risks of misuse, overuse, and delayed medical intervention.

5. Consumer Decision Drivers

- Availability and brand familiarity were top influencers in choosing antacid products.
- Doctor/pharmacist input, price, and advertising were also significant but secondary.
- These trends suggest that health communication strategies should be embedded at points of purchase to counteract superficial decision-making.

Final Reflection

The overall picture drawn from this analysis indicates that antacid medications have become embedded in routine self-care. While their availability and convenience offer clear benefits for short-term relief, the casualness of use, low health literacy, and strong brand influence pose serious risks in the long term.

With these results in mind, the next chapter will explore the broader implications of these findings, compare them with global literature, and recommend strategies for improving consumer awareness, pharmacist engagement, and responsible self-medication.

CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter provides a critical interpretation of the findings presented in Chapter 4, drawing connections between the data and broader themes in public health, pharmaceutical behavior, and rational drug use. The aim is to place the observed usage patterns and awareness levels within the context of existing literature, identify behavioral trends, and explore their implications for consumers, healthcare providers, and policymakers.

The discussion addresses the following key themes:

- The normalization of antacid self-medication in Indian households.
- The role of health literacy and awareness in safe drug use.
- The influence of branding, formulation, and taste on consumer choice.
- The potential consequences of chronic, unsupervised antacid consumption.

5.2 Consumer Behavior and Normalization of Self-Medication

One of the most striking findings from the survey is that over 70% of respondents consume antacids without a doctor's prescription. This aligns with several prior studies, including those by Gupta et al. and Sachdev et al., which have consistently highlighted the rise in self-medication among Indian adults—especially for minor ailments like acidity, headaches, and cold.

In the current study, respondents across all occupational groups showed a strong tendency to self-manage symptoms. Students and working professionals in particular relied on prior experience, peer suggestions, or pharmacists' informal advice. Retirees and homemakers often used antacids habitually, indicating a long-standing dependence formed over years.

This normalization of self-medication reflects the broader healthcare culture in India, where:

- Accessibility to pharmacies is high.
- Out-of-pocket healthcare costs push people toward cheaper, self-managed care.
- Doctor consultations are reserved for 'serious' issues, with digestive problems rarely viewed as a medical priority.

While this behavior is understandable, it poses significant challenges in ensuring the rational use of medicines. The casual perception of antacids as "harmless" may mask deeper problems, especially when such use becomes frequent or long-term.

5.3 Deficits in Health Literacy and Consumer Awareness

Even though antacids are used extensively, users have a startlingly low level of pharmacological knowledge. In this study, over 60% of participants were not aware that taking antacids could have any negative effects. Few were able to recognise hazards such diarrhoea (caused by magnesium), constipation (caused by aluminium compounds), or disruption of nutrient absorption and other drug interactions.

Rao and Archana (2016) discovered that even medical students had a poor awareness of antacid interactions, which is supported by this data. It makes sense that the situation is worse for the broader populace.

A number of reasons contribute to this knowledge gap:

- Patient education during pharmacy visits is lacking.
- Inadequate labelling or product inserts that are difficult to understand.
- Over-reliance on internet and television advertisements, which hardly ever address hazards.
- The belief that over-the-counter drugs are harmless until proven detrimental.

It becomes essential to increase health literacy in this situation. Not all consumer behaviour is irrational; rather, it frequently results from a lack of reliable, easily accessible information when making decisions.

5.4 Branding, Flavor, and Formulation Preferences

Another key insight from the survey was the dominance of branded OTC products such as ENO, Digene, and Pantoprazole-based medications. Among these, ENO emerged as the clear leader, particularly among younger users. The popularity of ENO can be explained by:

- Its fizzy, flavored powder format.
- Aggressive advertising campaigns emphasizing “quick relief.”
- Brand trust established through years of mass marketing.

This preference suggests that sensory experience and brand recognition often override medical efficacy in consumer decision-making. Products that taste better or have a visually engaging brand image are more likely to be selected—even when cheaper or medically appropriate alternatives exist.

Formulation choice also reflected demographic distinctions:

- Younger users favored powder sachets (like ENO) for portability and taste.
- Older adults preferred tablets or syrups, aligning with traditional drug formats.
- Chewable tablets were common among homemakers, likely due to convenience and ease of storage.

These behavioral patterns mirror findings from the Kantar Worldpanel (2022), which reported that taste, familiarity, and ease of use are often more decisive than pharmacological content in OTC purchases.

5.5 Prescription vs. Non-Prescription Use: A Regulatory Concern

A significant concern highlighted by this research is the blurred line between OTC and prescription-strength medications. While ENO and Digene are technically OTC drugs, several respondents reported regular use of pantoprazole-based medications (e.g., Pan 40), which are meant to be used under medical supervision.

This pattern is problematic for two reasons:

- Safety: Long-term use of proton pump inhibitors (PPIs) like pantoprazole is linked with risks such as vitamin B12 deficiency, osteoporosis, and renal damage.
- Medical oversight: Continued self-use of PPIs without proper diagnosis may delay detection of serious GI conditions, such as ulcers or early gastric cancer.

India's OTC framework currently lacks strict enforcement, allowing consumers to purchase potent medications without prescription barriers. This study’s findings support the argument for better regulatory oversight, particularly for acid-suppressing drugs that were originally developed for short-term, physician-guided use.

5.6 The Role of Pharmacists and Healthcare Gatekeeping

While doctors were cited as a source of recommendation by only a minority of respondents, pharmacists emerged as a key touchpoint. Around 29% of respondents mentioned seeking pharmacist guidance when selecting an antacid. However, there was little evidence that these interactions included any discussion about side effects, safe duration of use, or contraindications.

This highlights a missed opportunity. Community pharmacists can play a critical role in promoting rational drug use, but they are often undertrained, underutilized, or overburdened. In many settings, over-the-counter sales are handled by junior staff or sales personnel rather than certified pharmacists.

To address this gap, there is a need for:

- Training programs that equip pharmacists to deliver basic medication counseling.
- Incentive structures that reward safe dispensing practices.
- Policy mandates that require labeling changes and informational leaflets to accompany sales of acid-suppressing agents.

5.7 Public Health Implications

The findings of this study have significant implications for public health. Acid-related disorders, though often perceived as minor, can be early indicators of more serious gastrointestinal issues. The widespread use of antacids—especially in unregulated, uninformed ways—may lead to:

- Overdiagnosis and overconsumption of drugs.
- Delayed detection of structural GI abnormalities.
- Polypharmacy risks, especially in older adults.

Economic strain on consumers who regularly purchase branded products based on taste or advertisement. From a policy standpoint, these findings call for a multi-level intervention strategy:

- Consumer education through mass media and digital platforms.
- Label reforms that include prominent warnings and simplified side effect charts.
- Pharmacist upskilling and engagement in community awareness.
- Periodic audits of pharmacy dispensing practices.

5.8 Comparison with Existing Literature

This study confirms and builds upon findings from earlier research in India and abroad. For example:

- The high rate of self-medication echoes studies by Gupta et al. and Ruiz (2010).
- The low side effect awareness parallels findings from Rao and Archana (2016).

The preference for branded products over generics is consistent with market analyses by Kantar and Statista.

However, this study goes further by integrating demographic analysis, behavior mapping, and decision influencers—something not often explored together in Indian antacid consumption research. It also presents original data drawn from 123 respondents, strengthening its empirical relevance.

5.9 Summary

The results from this study reflect a complex interplay of habit, convenience, and brand loyalty in the use of antacid medications. While these products serve a legitimate purpose in managing minor gastrointestinal discomforts, the lack of medical supervision and consumer awareness introduces unnecessary health risks.

A key takeaway is that the issue is not just about antacid overuse, but about the conditions that make overuse easy: minimal pharmacist intervention, brand-centric decision-making, unclear risk communication, and insufficient health education.

Addressing these structural gaps requires a collaborative effort involving regulators, educators, pharmacists, and the pharmaceutical industry to encourage responsible self-care and protect public health.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The widespread use of antacid medications in India reflects a larger trend in modern healthcare: the rise of self-managed, over-the-counter solutions for common ailments. This study set out to evaluate the awareness and usage trends of antacid medications among a diverse group of 123 consumers, with particular focus on their knowledge, preferences, and decision-making behavior.

The findings paint a nuanced picture. While antacids are largely used for symptomatic relief and offer genuine therapeutic benefits, their misuse and casual consumption raise red flags. The majority of respondents used antacids without prescriptions, lacked basic awareness about side effects, and made decisions based on availability, taste, and brand recognition rather than medical appropriateness.

The analysis showed that:

- Students and working professionals use antacids primarily due to irregular meals and lifestyle stress.
- Elderly individuals and homemakers often use antacids habitually without re-evaluation.
- Knowledge about the pharmacological components and possible risks was alarmingly poor, even among educated groups.
- Pharmacists and advertisements were more influential than physicians in shaping usage behavior.
- There was strong brand loyalty and a noticeable preference for fast-acting, flavored formats like ENO.

These findings align with global literature and further highlight the challenges of rational drug use in consumer-driven markets.

The study reinforces a simple truth: Access without awareness is risky. While OTC medications like antacids democratize healthcare by offering autonomy and immediate relief, their misuse can lead to masking of serious conditions, drug interactions, and dependency—turning a solution into a silent threat.

Therefore, while antacid medications continue to hold therapeutic importance, consumer education, pharmacist counseling, and regulatory safeguards must evolve to match their growing use.

6.2 Recommendations

Based on the findings of this research, several interventions and policy recommendations can be proposed to ensure safer, more informed antacid consumption:

6.2.1 Strengthen Public Health Education

Launch targeted mass media campaigns focusing on rational use of OTC antacids.

Use simple infographics, short videos, and multilingual leaflets to explain when and how antacids should be taken.

Partner with NGOs and public health institutions to conduct community awareness drives, especially for elderly populations and rural users.

6.2.2 Empower Pharmacists as Health Educators

Provide mandatory training for pharmacists on patient counseling for OTC drugs, especially gastrointestinal medications.

Encourage pharmacists to explain correct dosages, possible side effects, and maximum usage periods at the point of sale.

Develop digital tools or kiosks that assist pharmacy staff in quickly educating walk-in customers.

6.2.3 Improve Packaging and Labeling Regulations

Enforce policies requiring clear, prominent warnings on OTC antacid packaging regarding overuse and contraindications.

Mandate that antacid products include simplified information inserts in regional languages for layperson understanding.

Ensure that prescription-only medications like pantoprazole are not sold as casual antacid substitutes without oversight.

6.2.4 Promote Responsible Advertising

Regulate TV and internet ads for OTC antacids to include disclaimers, similar to what is done in tobacco or alcohol commercials.

Prohibit misleading claims such as “completely safe” or “use anytime” unless backed by robust clinical safety data.

Introduce co-branding campaigns involving government health agencies and manufacturers to promote safe usage messages.

6.2.5 Conduct Further Research

Expand this study into larger, multi-city or pan-India surveys to assess regional variations in awareness and behavior.

Include qualitative interviews in future studies to understand motivations behind antacid misuse.

Study the impact of online pharmacies and health influencers on medication choices in younger demographics.

6.3 Contribution to Practice and Policy

This dissertation contributes meaningfully to the field of public health pharmacy, consumer behavior, and rational drug use in India. By documenting real-world trends in antacid usage, it provides an empirical basis for designing targeted educational campaigns and regulatory reforms.

It also underscores the need for a more active role for pharmacists, who remain underleveraged in the current pharmaceutical distribution model. With appropriate training and support, pharmacists can serve as accessible health advisors bridging the gap between consumer freedom and clinical safety.

For policymakers and pharmaceutical marketers, the insights offer a path toward ethical branding, transparent communication, and health-centered product development.

6.4 Final Reflection

This study started with a simple question: Do consumers understand what they are consuming when they take an antacid? The answer, as it turns out, is not often. Behind every sachet or tablet lies a complex interplay of marketing, memory, and mistaken confidence. While the accessibility of OTC drugs represents healthcare progress, unchecked usage can quietly erode public health.

Therefore, the future of self-care must be informed care—where freedom to choose is supported by the wisdom to choose responsibly.

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