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An abstract of
a thesis submitted to the Faculty of Emory College of Arts and Sciences
of Emory University in partial fulfillment
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Abstract

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Over-the-counter analgesics are available to the everyday consumer in stores and pharmacies across the United States. Although obtaining them doesn’t require advice or permission from a healthcare professional, users can experience harmful side effects. At Emory University, undergraduate students regularly use and share over-the-counter analgesics. Yet, how this population uses them is largely unknown and the very components of ‘use’ are not universal. This thesis uses qualitative methods to investigate how Emory undergraduates use over-the-counter analgesics and to discover if there are differences in the ways men and women participants discuss their use. Twenty-seven semi-structured interviews were conducted with Emory undergraduate students (thirteen men and fourteen women) to learn about their experiences with and feelings about using over-the-counter analgesics. This thesis discusses the themes that emerged from these interviews, including participants’ experiences with pain, illness, healing, and a culture of productivity and performance at Emory. My findings indicate that participants’ over-the-counter analgesic ‘use’ is more than just swallowing a pill. It involves their attitudes towards self-medicating pain, sources of information, consumption practices, and perceptions of others. Participants’ trust in this type of medication, providers, peers, and themselves perpetuates a demand for over-the-counter analgesics and contributes to their use among Emory undergraduates.

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CHAPTER ONE

Introduction

I sat alone, impatiently waiting for my friend to arrive for our lunch. At fifteen minutes past our meeting time, my phone lit up: “Sorry, not going to make it today. Not feeling great.”

That’s weird, I thought, since I’ve never known her to take a sick day. I told her to let me know if she needed anything and I went about my day. I saw her on campus a few days later and asked what happened. “Well, let’s just say I learned that you’re not supposed to take ibuprofen every day for a month on an empty stomach.”

My friend had been using ibuprofen to consistently manage her headaches from a concussion she experienced a month prior. On the day of our lunch, she woke up with strange pains in her stomach. Later that night, she decided to visit an urgent care for some answers. She told them about her concussion, the ibuprofen she was taking, and her stomach pains. They looked at her with confusion and surprise before explaining, “You’re really not supposed to take it for that long at a time.” My friend was frustrated – “How was I supposed to know that?”

My friend is one of my fellow undergraduate students at Emory University in Atlanta, Georgia. I was just as surprised as her urgent care doctors were to hear this story. She had to seek professional help for something avoidable. The packaging of over-the-counter analgesics lists directions on how many doses to take, at what frequency, and for how long before seeking help from a doctor. When I use ibuprofen, I read these instructions. I know they advise against taking it for as long as a month. My friend, however, did not know this. She wanted to relieve her headache pain, but ended up with more problems than she expected as a result. The contrast between how my friend and I each use ibuprofen makes me wonder what causes such differences. We attend the same university and share common traits, yet our knowledge about over-the-counter analgesics is not the same. My personal interest in over-the-counter analgesics and motivation for this thesis stem from these observations. Over-the-counter analgesics are commonplace in our lives. They are helpful, harmful, complex ways to heal illness.

A brief summary of over-the-counter analgesics in the United States

What are analgesics?

Analgesics are drugs that relieve pain. They are classified into two categories, opioid analgesics and non-opioid analgesics, for their different chemical and biological properties. The legal distribution method of opioid analgesics is via prescription from a healthcare provider (UC Davis Health 2020). Obtaining non-opioid analgesics, however, does not require a physician's prescription. These two methods of dispensing analgesics in the U.S., via prescription and via over-the-counter sale, are determined for each drug by various rules set forth by the U.S. Food and Drug Administration (FDA). Analgesic use carries risk, and restricting access to certain types of analgesics is one way the FDA works to ensure that analgesic drugs pose minimal harm to the general population (FAQs About the Regulation of OTC Medicines n.d.). Non-opioid analgesics are more accessible because they don't require a prescription. Instead of doctors prescribing them, companies produce them, the FDA requires that their packaging has certain specifications for directions on how to use them, and they are then sold over-the-counter (OTC) in different forms. These over-the-counter analgesics (OTCAs) include nonsteroidal anti-inflammatory drugs (NSAIDs) with generic names like ibuprofen and naproxen as well as drugs that are not NSAIDs. NSAIDs specifically reduce inflammation, pain, and fevers (Over-the-Counter Pain Relievers: MedlinePlus Medical Encyclopedia 2020). Non-NSAIDs like acetaminophen don't reduce inflammation, but they usually reduce fevers and other common pains (Over-the-Counter Pain

Relievers: MedlinePlus Medical Encyclopedia 2020). Yet, just because OTCAs don’t come from a doctor doesn’t mean they don’t have repercussions.

Both NSAIDs and non-NSAIDs pose serious consequences to their users. Side effects such as gastrointestinal ulcers and bleeding can occur when using a NSAID like ibuprofen as directed on packaging and not as directed (Abbott and Fraser 1998, 15). Non-NSAIDs, such as acetaminophen, also come with their share of dangerous side effects. Alcoholism, malnutrition, and fasting all increase a person’s likelihood for experiencing liver damage from taking acetaminophen in any capacity (Abbott and Fraser 1998, 15). The liver damage resulting from acetaminophen overdose can go dangerously unrecognized and ultimately result in liver failure, which is fatal (Abbott and Fraser 1998, 15-16, 24). Despite these serious consequences, OTCAs are widespread and common. Sometimes, people who experience side effects of OTCAs or require professional medical attention because of them don’t know that OTCAs are the cause of their issues because they’ve normalized them into their lives and routines (Abbot and Fraser 1998, 16). This combination of potential for serious health consequences and a lack of awareness for those consequences fuels a challenging environment that policymakers and healthcare providers must navigate to reduce harm and protect people’s health.

OTCA use and misuse

OTCAs are not flawless solutions to pain. The fact that they are sold in multiple doses to anybody who can purchase them means that the ways people use them can vary greatly. ‘OTCA use’ is a broad and ambiguous term that can include everything from peoples’ motivation to purchase OTCAs to how they actually ingest the drugs themselves. There is no universal definition of ‘OTCA use.’ It is an umbrella term under which types of use fall and have more precise meanings. OTCA misuse, for example, is a potentially harmful type of OTCA use that increases a person’s likelihood of experiencing side effects (Abbott and Fraser 1998, 22-23). ‘Misuse’ also varies in literature, with everybody defining it in an applicable context. For example, in their article, “Use and abuse of over-the-counter analgesic agents,” Frances Abbott and Mary Fraser define ‘misuse’ for their purposes and report that there are three main ways people misuse OTCAs: (1) consuming more doses than recommended without professional consultation, (2) using OTCAs for a purpose other than pain relief and pain management, and (3) using OTCAs with the intent of becoming intoxicated as a direct result (Abbott and Fraser 1998, 23). According to this definition, it might seem that correct or appropriate OTCA use is such that a user (1) does not consume more than recommended without professional consultation, (2) he or she uses OTCAs for the sole purpose of pain relief and management, and (3) he or she does not intend to become intoxicated as a result. But this is not the case. Abbott and Fraser’s framework, while it provides a way of thinking about use and misuse, is not universal. OTCA use is a complex result of experiences and changes in the cost of healthcare, patient and consumer roles, and institutional interests. Defining it in a narrow way would limit these interpretations and present barriers in comparing studies.

Markets, movements, and OTCAs

OTCAs originated from necessity in the United States in the 1980s and 1990s. After World War Two ended, the United States enjoyed domestic and foreign economic success, and the demand for health insurance and care soared. A remarkable 60% of Americans found themselves with a then-non-profit Blue Cross/Blue Shield health insurance plan by 1955, a notable increase from the 10% who did before the War (Rosenthal 2018, 17). For-profit insurance companies responded to this demand, too, and fought for shares of the novel insurance market as individuals sought coverage and employers needed plans until the 1970s. Americans who previously interacted with the healthcare system as patients started to become consumers in charge of their health resources, sifting through plan options and gaining a better understanding of the system. But, the US’s economic boom was short-lived as it began to lose its power around 1970. A following combination of unemployment and rising healthcare costs from the 1970s-1990s left many Americans without dependable care (Bodenheimer and Grumbach 2012). Inhibiting costs and lack of motivation to seek professional help for minor ailments drove people away from doctors’ offices and towards alternate solutions. A movement of self-care culture swept across the United States as people searched for cheaper, faster solutions to illness (Vuckovic and Nichter 1997, 1294-1295).

During this self-care movement, demand for pain management strategies grew quickly. People no longer wanted to see doctors for minor headaches, but still wanted a solution to their pain (Vuckovic and Nichter 1997, 1294-1295). Pharmaceutical companies seized an opportunity to fill a need for less expensive pain relief and began exploring ways to make existing prescription-only analgesics more widely available. A combination of demand, rising healthcare costs, improvements in science and technology, and changing regulations allowed them to do just that. Now, people sift through a wide selection of sizes, brands, and forms to find OTCAs that best fit their needs in “private medicalized markets” (Conrad and Leiter 2004, 161). These markets for OTCAs form because people are willing to pay for a product (OTCAs) with a purpose (pain relief) to avoid higher healthcare expenses. The defining aspect of a private medicalized market is that as long as a consumer can pay it, a provider will sell it to them (Conrad and Leiter 2004, 161). In the case of OTCAs, people with pain are consumers who depend on companies to produce options for care. Selling analgesics over-the-counter as one would sell food or clothing suggests that they are products in markets, and people are consumers. These markets mean new opportunities and challenges for the US pharmaceutical industry to create OTCAs, patent them, and introduce them to consumers.

The Consumer Healthcare Products Association outlines four ways in which OTC drugs differ from prescription drugs: (1) OTCs must "have a wider margin of safety than prescription drugs," (2) OTC "labeling must include all the information that an ordinary consumer needs for the safe and effective use of the product," (3) OTC drug advertising is regulated as any other consumer product would be by the U.S. Federal Trade Commission rather than by the FDA that regulates prescription drug advertisements, and (4) OTC drugs "can be sold in any of the approximately 750,000 retail outlets in the United States […], unlike prescription drugs which are limited to roughly 55,000 pharmacies" (FAQs About the Regulation of OTC Medicines n.d.). The OTCAs we know today have not always been available over-the-counter. Many existed as prescription-only drugs before earning an OTC status with the FDA. For example, the OTCA ibuprofen only became available to adult consumers over-the-counter in 1984, the children's version of ibuprofen in 1997, and naproxen sodium tablets entered the OTCA market in 1994 (Juhl 1998, C112). These drugs' switches occurred during the time of high costs and the United States' resulting self-care movement, but were sparked by pharmaceutical corporations' interests in products and profit.

In her book *An American Sickness: How Healthcare Became Business and How You Can Take It Back*, Elisabeth Rosenthal addresses the various factors that drive prices and success of products in U.S. pharmaceutical markets. She analyzes specific motivations companies have for producing OTC drugs and explains that bypassing unfavorable regulations can maximize their profits. A foundational element of pharmaceutical production is that "the same product cannot be on the market as both a prescription and an over the counter product" (Rosenthal 2018, 112). Selling drugs OTC creates a larger audience for the drug and incentivizes companies to develop brands and marketing strategies to attract customers. These strategies result in the wide range of generic and brand name OTCAs on store shelves. If a company can fill someone's need with a profitable OTC drug, they will. Rosenthal writes, "In much of the world, products go over the counter when they are deemed safe enough to take without a doctor's intervention. In the United States, it's more of a business calculation" (Rosenthal 2018, 110). There is less emphasis on patients' well-being and more on the success of drugs as profitable ventures in the U.S. This mindset dominates OTC drug production and sale, and there is little motivation to investigate if people should be consuming them in the first place. If used correctly, OTC drugs can steer people away from doctors' offices and reduce the overflow of patients seeking immediate, costly medical care, but only if they truly work to people's benefit. Misuse or overdose can result in adverse health consequences that actually put people back in emergency rooms (Abbott and Fraser 1998, 16).

But cracking down on what can become an OTC drug may not be the best solution to reducing potential harm. Making drugs available to the public without prescriptions eliminates cost and access barriers of doctors and filling prescriptions. Consider pain, an ailment that greatly reduces someone's quality of life but doesn't always warrant a trip to the doctor. Some people who can't pay for a doctor rely on OTCAs for relief. When we discuss tightening regulations on how many and what type of OTCAs are available, we must ask: Does the risk of someone misusing an OTCA outweigh the benefit it would provide to other members of a population who rely on them as a solution to pain? In the U.S., this question is left largely unanswered. Randy Juhl discusses this issue from an ethical perspective in his 1998 article, "Prescription to Over-the-Counter Switch: A Regulatory Perspective." In it, he writes, "Currently, drugs should be classified as OTC if they can be safely and effectively used as directed. This involves a question of public access. The law suggests that access to drugs should not be restricted unless it is necessary to do so for the public health. Thus, if the drug can be classified as OTC, it should be" (Juhl 1998, C116). Recall that the same product cannot be on the market classified as both prescription and OTC (Rosenthal 2018, 112). Juhl suggests that most determining if a drug can be classified as OTC concerns testing whether or not the consumer can read, understand, and follow its label for its intended purpose, not just if the drug is safe in a laboratory setting (Juhl 1998, C113). I will discuss the important issue of label comprehension later in this thesis. Deciding whether to bring OTC drugs to market or not concerns more than just the chemical and biological safety of the drug itself. It requires questions of consumers' abilities to follow directions, the right of the public's access to care, and profitability.

Anthropology and OTCAs

Though Rosenthal and Juhl write about OTC drug markets in general, their concepts still apply to the private medical market of OTCAs (Conrad and Leiter 2004, 165). The journey of an OTCA does not end once it reaches the market. Once there, OTCAs still undergo scrutiny. Researchers question their true efficacy in populations and the risks they pose through possible side effects and misuse (Abbott and Fraser 1998). Yet, virtually anybody with a few dollars can purchase them in whatever amount or form they want and companies can manufacture new analgesic drugs in response to consumer demands. So, why does the FDA allow these drugs to exist in such a market, and why does demand for them persist?

Because we believe that they work. We term them "medicines" or "medications," giving them connotations of healing and purpose that "drugs" don't always have (van der Geest, Whyte, and Hardon 1996). Susan Reynolds Whyte, Sjaak van der Geest, and Anita Hardon explore the anthropological nature of medication in *Social Lives of Medicines*. Simply put, the root of trusting OTCAs and other medication stems from the realization that they "[…] are substances with the power to transform bodies" (Whyte, van der Geest, and Hardon 2002, 5). People recognize and trust this power because of their own experience and socialization. OTCAs' purpose is to relieve pain. Their chemistry is carefully configured with this goal in mind, but Whyte et al. postulate that the meaning of medication extends beyond its scientific properties. They argue that "medicines take on meaning through common social experience in the context of social relations," and in turn maintain and influence those social relations (Whyte, van der Geest, and Hardon 2002, 169). People's enduring OTCA use is grounded in the trust that companies sell effective drugs, trust that the drugs will actually relieve pain, and trust that the user will still be accepted by others when he or she uses them.

The concept of trusting and believing in sources of healing is perhaps best explained by the work of Claude Lévi-Strauss. In "The Sorcerer and his Magic," Lévi-Strauss provides a foundation for understanding how social groups respond to others with illness and how they interpret and accept mysterious, foreign healing practices. In this renowned essay, he describes the work of the quintessential shaman, who cures the ill by performing unbelievable magic. Despite his implausible healing techniques, the shaman earns respect throughout communities. Because of people's newfound regard for the shaman and complete trust in his magical healing powers, Lévi-Strauss posits:

> "There is, therefore, no reason to doubt the efficacy of certain magical practices. But at the same time we see that the efficacy of magic implies a belief in magic. The latter has three complementary aspects: first, the sorcerer's belief in the effectiveness of his techniques; second, the patient's or victim's belief in the sorcerer's power; and, finally, the faith and expectations of the group, which constantly act as a sort of gravitational field within which the relationship between sorcerer and bewitched is located and defined" (Lévi-Strauss 1963, 198).

The three parts of this ‘shamanistic complex’ – patients, healers (sorcerers), and the group – serve as a basis for understanding modern patient-provider relationships concerning trust and the phenomena of advanced, seemingly-supernatural modern medicine.

I propose that we replace magic with medication in Lévi-Strauss’s model to better explain its social role in our lives. In Lévi-Strauss’s shamanistic complex, medication is to a doctor what magic is to a sorcerer. To earn a reputation for healing from patients and the group, doctors (healers) must use their knowledge – their power – to identify an illness and select the appropriate medication to treat it. Patients must then trust doctors and consume whatever medication they’re given. When the patient is cured from an ill state to a normal one, the group’s, or society’s, expectations are met. With this success, society and individuals place belief and trust in the power of doctors and medications to heal illness. It is in society’s best interest that a patient returns from an ill to a normal state, so a demand for doctors and medications perseveres (Parsons 1958).

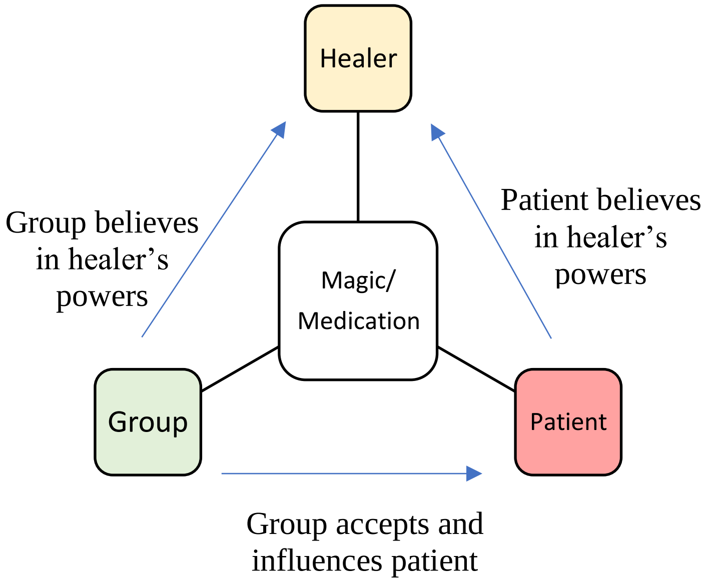


Figure 1. Lévi-Strauss’s traditional shamanistic complex

Figure 1 (above) visually represents beliefs between healers, groups, and patients in Lévi-Strauss's shamanistic complex. The interaction of these three roles gives meaning to medication as a helpful substance with the power to heal.

But when medications are sold over-the-counter, this triangle of beliefs changes. The need for a doctor disappears as patients and groups assume new roles and responsibilities. Patients who would normally place belief in doctors' healing abilities become consumers who believe in pharmaceutical companies' powers to provide effective medications as a doctor would have. These consumers also assume the original role of a doctor in identifying illness and appropriate medications for their own needs. Thus, the consumer maintains the role of the patient while also sharing the role of the pharmaceutical industry in Lévi-Strauss's model. The persistent, widespread use, demand for, and normalization of OTCAs confirms society's belief in the consumers and pharmaceutical industry – the ultimate shaman. This new framework is the essence of how we interact with OTCAs and how they remain a popular solution to pain in our lives. Though Lévi-Strauss's work is decades old, it still applies today. I will draw on his framework throughout my thesis to contextualize my findings and compare it to the phenomenon of OTCA use in Emory undergraduates.

Purpose of this study and research questions

After my friend told me about her trip to urgent care, I started to notice OTCAs everywhere. I realized I keep them in my own backpack, bathroom, and car. The same question caught my eye in group chats and the lowest, most social floor of the library – 'Does anybody have ibuprofen?' Emory's on-campus library and convenience stores offer students a wide selection of OTCAs. They're sold in bulk, in single doses, and doled out to whoever might ask for them in class or on campus in passing. It’s not weird to see people using OTCAs at Emory. In fact, it’s perfectly normal.

The opportunities OTCAs provide Emory undergraduates for managing pain, as well as the problems they may present, are best understood through stories of their experiences with pain, what they say about their own OTCA use, and how they think others use them. Creating a landscape for how Emory students view and use OTCAs allows for understanding as to what influences use, misuse, and trust in OTCAs in this setting. With this thesis, I aim to deconstruct the umbrella term of ‘use’ and the concepts that lie underneath it to provide a foundation to determine components of ‘OTCA use’ in Emory undergraduate students.

Thus, the purpose of this study is to investigate Emory undergraduate students’ OTCA use. This is a very broad endeavor. Understanding a person’s true OTCA ‘use’ involves the myriad aspects of use itself. I do not aim to make conclusions about every single aspect of Emory students’ OTCA use, but rather to provide some ways that OTCA use manifests in specific themes in Emory students’ lives. To do this, I decided to conduct interviews and qualitatively analyze the data to learn about Emory students’ experiences with and views on OTCAs. Testable hypotheses can then emerge from this data that can be further investigated to define relationships between and among students’ OTCA use and other factors. With this goal in mind, I posed two main research questions:

1. *How do Emory University undergraduate students use over-the-counter analgesics?*
    a. I did not define OTCA use before beginning this study. Rather, I aim to provide a landscape of the many aspects of term ‘use’ discovered in interviews. Interviews consisted of open-ended questions that elicited feelings, experiences, and stories about participants’ experiences with pain and OTCAs.

2. *Are there differences in how Emory University undergraduate men and women use over-the-counter analgesics?*
    a. I did not anticipate how men and women participants might each speak about their OTCA use given the lack of published qualitative studies on this topic. I did anticipate that some woman would specifically mention menstruation as a unique experience of pain, which they did.

The majority of prior literature I will reference throughout this thesis to contextualize my findings involves data obtained via surveys. Survey data is useful in obtaining baseline information about OTCA use demographics and frequency and performing quantitative analysis, but qualitative data paints a true picture of how we interact with OTCAs, how OTCAs interact with us, and identifies relationships that inform a field of study that survey data cannot. My interviews with Emory undergraduate students for this project revealed three overarching themes, or findings, about their OTCA use:

1. Participants have pre-conceived attitudes about self-medicating pain with OTCAs resulting from their experiences with pain and observations of others' experiences with OTCAs.
2. Each participant's main source of information about OTCAs was their parents or immediate family, but their knowledge of OTCAs available on the market and their ingestion methods vary.
3. Participants' perceptions of their peers' OTCA use do not necessarily reflect their own OTCA use. Instead, they use external information and inferences to form views about how other students use OTCAs.

I will discuss these findings in the following chapters, respectively. The many dimensions of OTCA ‘use’ must be incorporated into future research for a greater understanding of their impact on our bodies, medical markets, and systems. OTCA use is a complex product of participants’ experiences and social interactions, which affirms the need for an anthropological understanding of OTCA use in this population.

CHAPTER TWO

Methods

I conducted twenty-seven semi-structured interviews with Emory University undergraduate students, men and women, ages eighteen years or older on Emory's Atlanta campus as the only source of original data for this project. These interviews consisted of open-ended questions that evoked students' experiences and feelings regarding their use of OTCAs. The Emory University Institutional Review Board determined that this project did not require IRB review; all findings and conclusions in this thesis apply to Emory University undergraduate students only and are not intended to be generalized to other settings or populations.

Participants

I interviewed thirteen undergraduate men and fourteen undergraduate women before reaching saturation of themes and responses in my sample population. Any names used throughout this thesis are pseudonyms and are not intended to denote participants' physical semblance or actual names. Since participants in this study are exclusively Emory undergraduate students, it is important to note some characteristics about the Emory undergraduate population. An undergraduate class size is around 2,000 students. The ratio of females to males at the undergraduate level is 57:43. Around 11% of Emory's 2019 incoming undergraduate classes are first-generation college students, around 17% of the class are international students, and students' self-identified race/ethnicity are as follows: 30.1% Caucasian/White; 24% Asian/Asian American; 13.7% African American, 12.8% Hispanic/Latinx; 0.6% Native American; 12.9% International; 5.9% did not identify (Admitted 2023 Class Profile | Emory University | Atlanta GA n.d.). Even though participants in my study were not asked to and did not provide any of these traits except their self-identified gender, these statistics are important to provide for a better understanding of the Emory undergraduate student body.

Procedure

I recruited friends and acquaintances to be potential participants in this project. I reached out to potential participants by phone to explain the purpose of my project and ask if they were willing to participate. Participation was voluntary and participants were not offered any compensation. If a potential participant agreed to meet with me to learn more about the study and/or participate, we scheduled a time to meet and I reserved a private room on campus as our meeting location. At our scheduled meeting, I first confirmed that the potential participant met the study criteria (18+ years of age, enrolled Emory undergraduate student, and self-identified man or woman). If they did, I provided them with a paper copy of the verbal consent script to read. We then reviewed the consent script together and they were given the opportunity to ask questions and decline to participate. After participants verbally consented to participating in the study, I began recording the interview via audio on my personal computer. Before proceeding to the interview questions, I asked them to re-state their consent, age, and self-identified gender (man or woman) for the record. I used a set of pre-determined questions to guide interviews, found in Appendix A, but always allowed participants to speak freely and added additional questions or asked for examples when relevant. I used the same question guide when speaking with both men and women participants. I improved my interviewing abilities over the course of the study. Interviews had a conversational structure and ranged from 11 minutes, 37 seconds to 29 minutes, 27 seconds in length. The average interview time was around 21 minutes.

Data analysis

I performed a manual, inductive thematic analysis of interviews to achieve my findings for this project. After transcribing the interviews manually on a computer, I familiarized myself with the data by carefully reading all transcripts multiple times and taking notes to identify initial codes. I then searched for and identified main themes by noticing patterns and relationships between participants' responses. The three overarching themes that participants expressed about OTCA use during interviews are:

1. Attitudes towards self-medicating pain with OTCAs
2. Sources of information about OTCAs and OTCA consumption methods
3. Perceptions of other students' OTCA use

I performed a second round of coding to for each of the three themes listed above and further defined subthemes for each theme. Chapters Three, Four, and Five of this thesis each discuss one of the three aforementioned themes and specific subthemes situated in existing literature. Relevant coding tables for each theme and subtheme are included in their respective chapters.

A note about gender in this thesis

Recall that my second research question was: *'Are there differences in how Emory University undergraduate men and women use over-the-counter analgesics?*'. In asking this, I aimed to identify major differences in the information men and women provided about their OTCA use, if any. My motivation for investigating OTCA use in the context of gender stems from existing literature that suggests differences in the ways men and women experience OTCAs. In "Epidemiology of analgesic use: a gender perspective," researchers D. Isacson and K. Bingefors randomly distributed a survey that asked about participants' demographics, characteristics, and analgesic drug use. They found that women use more over-the-counter analgesics than men in certain amounts of time and that this difference results largely from the degrees to which women and men experience pain (Isacson and Bingefors 2002, 10). Though ‘use’ was not clearly defined in their study, Isacson and Bingefors raise questions about the effect of socialized gender and expectations of pain reporting and management on OTCA use. This motivated me to explore the ways men and women participants might use OTCAs further in a qualitative sense to recognize themes of pain and use between the two groups.

Both women and men experience gender-specific advertising for medications. In their article, “Pharmaceutical Industry Marketing: Understanding its Impact on Women’s Health,” Carolyn Sufrin and Joseph Ross question the true impact of the ambiguous world of external pharmaceutical direct-to-consumer advertising (DTCA) on women’s health. They discuss two ways in which companies perform DTCA: advertising medications for certain diseases and alternatively advertising diseases in efforts to medicalize conditions that will create a demand for medications (Sufrin and Ross 2008, 586). The lack of regulation the authors found surrounding such advertisements misleads consumers in their purchasing practices and perpetuates gender stereotypes (Sufrin and Ross 2008, 593-594). Advertising medications and diseases in general can shape medical markets for certain products, like medicalizing pain to increase OTCA sales.

Moreover, in “Characteristics of Medication Advertisements Found in US Women’s Fashion Magazines,” Jennifer Mongiovi et al. report that many drug advertisements in these materials are analgesics for pain. Companies also problematize pain in advertisements to women (Mongiovi et al. 2016, 30). OTC medications to resolve pain and other conditions were presented in a rational way in these magazines, causing women to think about their conditions practically and question their pain and desire to relieve it (Mongiovi et al. 2016, 32). By spurring women to think about their pain in a practical sense, these advertisements contribute to antiquated societal expectations that men suppress pain and women must control it so that everybody can fill their roles as expected. The issue of gendered marketing led me to wonder if men and women participants learn about OTCAs differently or choose different types for specific reasons. I aimed to identify if men and women participants' responses varied in the context of the themes I gathered from my data. Upon analyzing interviews with men and women, I concluded the following aspects about the relationship between gender and each theme I found:

1. Attitudes towards self-medicating pain with OTCAs
    i. I observed differences in the way men and women participants spoke about pain, but there were no trends in the attitudes they expressed towards self-medicating pain with OTCAs.
2. Sources of information about OTCAs and OTCA consumption methods
    i. I did not observe differences in the ways men and women participants learned about OTCAs or how they consumed them.
3. Perceptions of other students' OTCA use
    i. I did not observe differences in the ways men and women participants perceived other students' OTCA use.

I will focus my discussion of gender and OTCA use in Chapter Three of this thesis as it relates to concepts of pain and self-medication. My findings in all parts of this thesis, however, suggest areas for future work on the relationship between gender and OTCA use in this population.

Limitations

While I attempt to set my own experiences and views aside when analyzing data, the personal nature of semi-structured interviews requires me to use my best judgement in asking questions and requesting further information about certain topics. Because I used a snowball sampling technique to recruit participants, this sample is not a true representation of the Emory undergraduate student population. Interviewing friends and acquaintances, however, did allow for more comfortable and personal conversations that would not have been possible with random participants.

Again, there is no universal definition of OTCA ‘use’ or ‘misuse.’ Studies I refer to throughout this thesis to contextualize my findings define those terms separately and interpret their findings in those parameters. My findings contribute to what constitutes a definition of ‘OTCA use’ in Emory undergraduates. Thus, instead of defining ‘use’ in this study and using that definition to frame my conclusions, I allow elements of OTCA ‘use’ relevant to my study to emerge from the data itself. These elements are the very themes my data produced: attitudes, sources of information, OTCA consumption methods, and perceptions of other students’ use. They represent participants’ thoughts and experiences and create a robust meaning of OTCA use among Emory undergraduates.

CHAPTER THREE

To Use or Not to Use? Participants' Attitudes towards Self-Medicating Pain with Over-the-Counter Analgesics

Hospitals and doctors' offices keep analgesics under lock and key. Acquiring analgesics in these spaces depends on communication between patients and providers, providers' discretion, and drug availability. But analgesics also line the shelves of corner stores, supermarkets, and gas stations. We stock them in our desks, backpacks, and homes for when a headache strikes or a fever spike. They are sold cheap and over-the-counter in small doses and bulk bottles to people of all ages. OTCAs allow people to self-medicate their own pain, but only if they choose to use them in the first place.

Over the course of each interview, participants spoke about their personal experiences with pain and how they remedy it. In doing so, they expressed intrinsic attitudes towards self-medicating pain with OTCAs – whether it is their immediate solution or whether they refuse to use them in the first place. In this chapter, I identified three overarching attitudes participants expressed towards using OTCAs to self-medicate pain by asking for stories and examples about their states of health, experiences with injuries and pain, and how they "get better."

Two obvious elements compose the act of self-medicating pain: pain and practicing self-medication. But they are not as straightforward as they may seem. They are intricate qualities unique to every human, since no two people experience pain the same way and self-medication is one of the most intimate practices one can perform on the body (Whyte, van der Geest, and Hardon 2002, 3). I begin this chapter with a review of the nature of pain and suffering and self-medication. I then proceed to discuss how I identified three overarching attitudes participants expressed towards using OTCAs to self-medicate their own pain using representative quotes from participants to illustrate my findings. This chapter serves to suggest that participants' attitudes towards self-medicating pain using OTCAs result from their experiences with pain and observations of others' experiences with OTCAs. The fact that participants have pre-conceived attitudes about self-medicating pain with OTCAs should be further investigated to assess if there are significant relationships between these attitudes and their OTCA consumption practices.

All pain is not equal

Nobody is immune to pain. In *Pain as Human Experience: An Anthropological Perspective*, Mary-Jo DelVecchio Good, Paul E. Brodwin, Byron J. Good, and Arthur Kleinman explore pain – acute and chronic – through ethnography to portray how pain is a product of culture, biology, history, and more. Chronic pain extends over months and years, changing a person's lifestyle and abilities (Good et al. 1992, 3). Acute pain, on the other hand, is temporary and lasts minutes, hours, or days (Good et al. 1992, 1). The authors contend that people interpret and legitimize these types of pain differently. While some define pain by biomedical changes, signals, and bodily failures, others theorize that pain is a product of and perpetuated by social interactions and stigma (Good et al. 1992, 9, 3). For example, a stomachache is not always an indication of indigestion but could be the product of an embarrassing situation where a person feels outcast from a social group. These two interpretations of stomach pain portray vastly different meanings and illnesses. Pain and individuals' understanding of it rely on past experiences and expectations. Because pain is a product of so many factors in a person's life, no two people experience the same pain.

Good et al. discuss these pain experiences in the context of illness, saying, "*Pain* is often used as a graphic illustration of the suffering caused by illness, of the body or of the mind" (Good et al. 1992, 13). Their work further explores the treatment of pain and suffering in chronically ill patients from this viewpoint – that it is a product of illness. American sociologist Talcott Parsons wrote extensively about societal expectations of healthy and ill people, and how health, the "optimum capacity of an individual for the effective performance of the roles and tasks for which he has been socialized," shapes a person's social role (Parsons 1958, 176). According to Parsons, illness is a "socially institutionalized role-type, […] most generally characterized by some imputed generalized disturbance of the capacity of the individual for normally expected task or role-performance […]" (Parsons 1958, 176). When something disturbs this 'normal' role, like a stomach ache, the affected person assumes a "sick role" in society with four acquired characteristics: (1) the person is not responsible for his or her sick role and requires healing for recovery, (2) the sick person is excused from his or her normal roles and obligations during the time of illness, (3) the sick person recognizes a responsibility to "get well" because his or her illness is undesirable, and (4) the sick person must "seek competent help" and make efforts to become healthy again (Parsons 1958, 176). Parson's definition of illness and theory of a 'sick role' can be used as a basis of thinking about how participants in this project spoke about times they found themselves ill because of their experience with pain.

Good et al.'s idea that pain is a product of the illness that affects someone's societal role, however, conflicts with my own findings. While participants did speak about pain as a product of physical injury or sickness, they then continued to speak about the effects that pain had on their lives rather than the cause of that pain. Their pain experiences, therefore, were the illnesses that impacted their abilities to be 'normal.' Participants gave examples of both acute and chronic pain in interviews. Only one participant, Carlos (P24), experienced chronic pain in the form of debilitating, regular migraine episodes lasting for two years. Participants most frequently mentioned headaches, muscle pain, and minor injuries as sources of acute pain. All participants experienced acute pain at some time in their life, but it didn't impact any two participants' lives in the same way. Each participant who experienced illness due to pain assumed a “sick role” and sought treatment for his or her pain through OTCAs or another method. But participants’ responses to pain were not the same. A mild headache pain to one participant was no issue, whereas to another it was enough to ruin his day and prompt him to seek OTCAs for relief.

Arthur Kleinman elaborates on this phenomenon in his renowned work, *The Illness Narratives*, which details the experiences of people living with chronic illnesses. Illness and all its parts are subjective. Kleinman writes, “[…] when we speak of illness, we must include the patient’s judgements about how best to cope with the distress and with the practical problems in daily living it creates” (Kleinman 1988, 4). When in a sick role, people are agents responsible for their own well-being. This inherently requires that they make decisions about when they are ill and what they need to be well again. Pain is already a product of experience and expectations, so illness must be, too. Not all people’s lives are affected by pain the same way, so not all pain is necessarily illness.

Parsons defines illness as an inability to fulfill an otherwise ‘normal’ societal role. ‘Normal’ roles depend on a person’s innate abilities and context. In my study, participants most commonly associated ‘normal’ functioning with being productive in their stories about how pain affected their lives. An ‘ill’ state for them is thus characterized by a decrease in productivity or inability to perform to personal and social expectations. Vukovic and Nichter discuss this same concept and relate it to American culture and the demand for OTC medications. They theorize that American attitudes towards the need to be productive and not ill in the 1980s and 1990s in were exacerbated by worry from unemployment and rising healthcare costs. This manifested in individuals’ heightened awareness of illness in themselves and others (Vuckovic and Nichter 1997, 1289). One way to uphold a productive lifestyle was not to seek a doctor’s advice for every instance of minor pain or ache, but to take agency in one's own care by self-medicating pain to return to a non-ill state (Vuckovic and Nichter 1997, 1294). Recall that during this time, a self-care movement also escalated across the country and OTCAs rose to popularity. Participants in my study echoed these concepts of valuing productivity and seeking quick fixes to pain.

During our conversation, Sam (P5) identified the effects that distinct types of pain have on his life:

> *- […] What happens when you have a muscle ache?*
> *Sam: Muscle ache, I usually don't do too much. I'll stretch, take a hot shower. If it's too intense I'll take a painkiller such as Tylenol or Advil […].*
> *- Ok, so headache then?*
> *Sam: Headache, I'll always almost take [a painkiller]. If it's annoying me and impeding my day, I'll take a painkiller.*

Even though muscle aches don't bother Sam enough to obstruct his day, headaches impede his normal functions and prompt him to take OTCAs to remedy them. For him, muscle ache pain does not cause illness, but headache pain does. He uses his own judgement to evaluate how much each type of pain affects his life and adjusts accordingly (Kleinman 1988, 4). In this case, if it "impedes his day" and normal productivity, he assumes a sick role and seeks treatment in the form of OTCAs. Other participants' narratives paralleled Sam's, with both men and women expressing distinctions between types of pain that impact their lives to varying degrees. The recurring theme of productivity in interviews could also be associated with the fact that this study concerns Emory undergraduate students' experiences and responses to pain. Emory's undergraduate culture is one that values rigor and productivity. If certain types of pain hinder students' ability to fulfill these expectations in an academic setting, students might seek remedies. These experiences and this environment could shape attitudes towards pain and treatment.

Gender and pain

The ways in which men and women report pain vary. In past studies on women’s and men’s experiences with pain, researchers report that women are typically more informative about their experiences with pain and provide more detail than men do (Robinson et al. 2001, 251). Men tend to report less pain than women and use different language when reporting their pain levels than women do (Barsky, Peekna, and Borus 2001). It is no secret that dated societal expectations pressure men to just deal with pain and refrain from seeking external help. This gendered socialization however, skews data and presents barriers to interpreting men’s and women’s pain experiences. In interviews I conducted, women were typically more willing to discuss their experiences with pain at length while men typically provided one-sentence answers to questions. This difference presents a limitation to how I can determine their attitudes towards self-medicating pain using OTCAs. I noticed this difference after interviewing four women and then two men consecutively. To address this, I used more specific questions when interviewing men to better learn about their experiences with pain, self-medication, and OTCA use.

What is self-medication?

When a person elects to ‘self-medicate,’ he or she independently takes available medication without direct advice or instruction from a healthcare professional. The term further includes all general actions people take to improve their lives through relieving pain or promoting their own well-being (Hughes, McElnay, and Fleming 2001, 1027-1029). As participants spoke with me about how they manage pain, they typically mentioned OTCA use as just one of many self-medication practices. Some condemned those who seek OTCAs as a solution to pain for just wanting a “quick fix,” others extolled the relief that a small pill brings to their life, and many didn’t even mention OTCAs without me specifically asking about them. Taking a pill was not always at the forefront of somebody's mind when thinking about how to resolve pain.

In their article, "Changing patterns of pharmaceutical practice in the United States," Nancy Vukovic and Mark Nichter report that self-medication is a common primary response to illness. They mention that quantitative studies have identified a positive correlation between higher self-medication, higher education levels, and higher income levels. Some researchers suggest that people with higher incomes value time more than people with lower incomes, and that self-medication could be the fastest way to treat an illness (Vuckovic and Nichter 1997, 1287). But, the underlying reasons for these associations are unclear and there is a lack of study on the matter. People with higher education typically earn higher incomes and have higher lifetime earnings (Tamborini, Kim, and Sakamoto 2015, 1396). My study's focus on OTCA use in Emory undergraduate students contributes to this question of why or why not people with higher education levels might have a higher tendency to self-medicate, despite the theory that they typically earn more money and place great value on time. While my findings in this study do not yield comparable results for this topic, perhaps the culture of an undergraduate environment that revolves around stress, partying, and productivity plays a role in people seeking immediate solutions to pain.

Lisa Pineles and Rick Parente's study, "Using the theory of planned behavior to predict self-medication with over-the-counter analgesics," explores the relationship between undergraduate students' characteristics and the likelihood that those influence their misuse of OTCAs. The researchers collected survey responses specifically from college students and used quantitative analysis methods to determine significant factors or beliefs, perceptions of pain, and personal experiences that contributed to a person taking more than the recommended dose of

OTCA following the theory of planned behavior (TPB). The TPB holds that “a person’s intention to perform a certain behavior is influenced by his or her attitude toward the behavior, subjective norms, […] and perceived control over performing the behavior” (Pineles and Parente 2013, 1542). They hypothesized that “participants’ negative attitudes toward medicines will predict intent to use pain medicines” (Pineles and Parente 2013, 1543). Their findings partially support this hypothesis since they found that “specific beliefs about medicine significantly predicted intent,” but further details about beliefs and behavior were inconclusive in their study (Pineles and Parente 2013, 1546). Their study provides a platform for further exploration of attitudes towards using OTCAs in a college setting, specifically. If attitudes can predict a person’s medication use, it is worthwhile to spend time understanding them in populations and contexts to the extent they might influence it.

Gender and self-medication

In *Social Lives of Medicines*, Whyte, van der Geest, and Hardon theorize that men and women have different motivations to self-medicate, one of which is the societal expectation that women need to have control over their bodies and well-being. They posit, “Medicines are part of day-to-day body regimes, in which women strive to fulfill societal expectations of work capability, appropriate fertility, attractive appearance and mental stability. Such self-control with medicines fits in with secularized twentieth-century Western culture […]” (Whyte, van der Geest, and Hardon 2002, 50). These expectations are part of women’s normal role in society. When these expectations are not met, then, illness results and affected women embody a ‘sick role.’ For example, if a pain from a headache prevents a woman from performing assigned work, her normal role is not fulfilled. A woman might then seek a headache treatment to relieve her pain and accomplish her work, successfully performing the duties required in a sick role. In my project, the only way in which women participants described their reasons for self-medication differently than men was their desire to control their period symptoms. This difference may not be a result of gendered societal expectations for men and women so much as it is a biological difference in pain experiences between males and females, but is nonetheless important to note.

Maggie (P21), a participant in my project, lived with extreme menstrual pain during her teenage years until she decided to take hormonal birth control to manage her symptoms and cycles. Before gaining control of her periods, Maggie experienced long periods, bloating, anemia, and related infections due to her constantly-exhausted body. She revealed to me, “I lived off Advil. To the point where it [the pain] was so bad I had to skip classes some days.” When unable to go to class, Maggie can’t fill the role expected of her to be a student. As a result, Maggie turned to OTCAs to manage her pain. She expressed no reservations about taking them regularly and seemed generally grateful that they are available as a treatment. OTCAs allow her to function as normally and independently as possible while on her periods. Maggie’s control over her body allows her to live as she pleases. Though period symptoms are a sex-specific (rather than gender-specific) pain experience, other women participants reiterated the concept of control when discussing their attitudes towards self-medicating pain from headaches and muscle aches in manners that men did not. Men more frequently mentioned their reasons for self-medicating pain as discomfort and productivity, while women typically spoke more about control and productivity as reasons for seeking treatment. Gendered socialization of pain and role stereotypes reinforces discourse about self-medication and could influence attitudes towards self-medicating pain.

Attitudes towards self-medicating pain with OTCAs

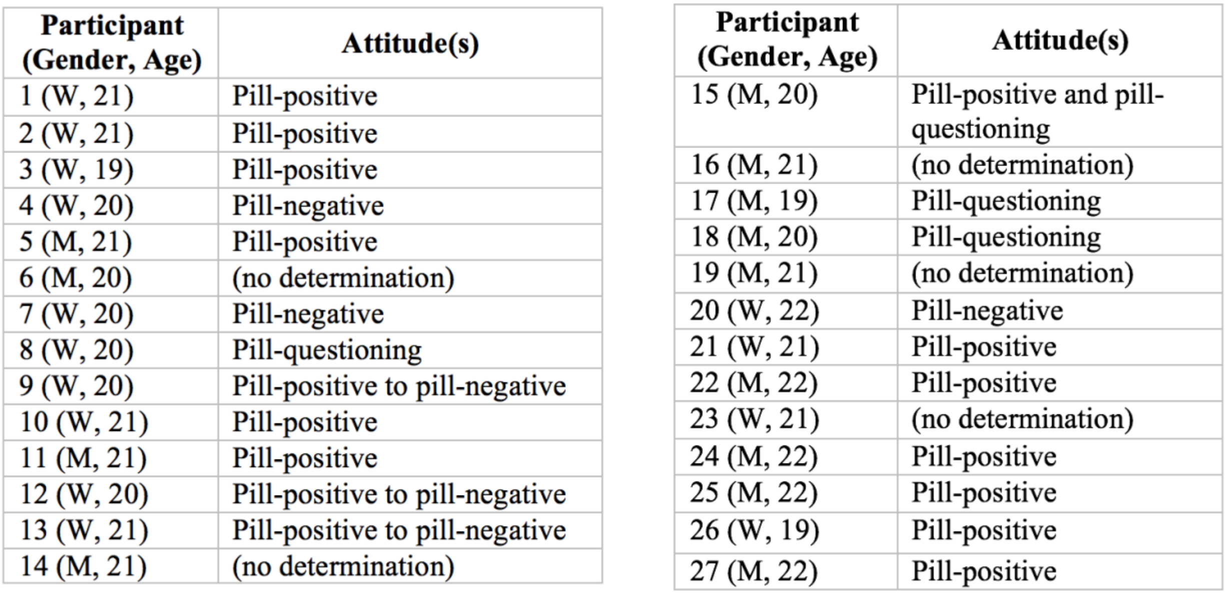
Participants’ experiences with pain and attitudes towards self-medicating with OTCAs comprised significant portions of interviews. I manually reviewed transcripts to create secondary inductive codes regarding the differences in attitudes towards using OTCAs to self-medicate pain. Then, I established analysis criteria for participants’ attitudes towards self-medicating pain with OTCAs (listed in Table 1a). The resulting subthemes are: pill-positive attitudes, pill-negative attitudes, and pill-questioning attitudes. Participants with pill-positive attitudes expressed no hesitations about taking OTCAs. Participants with pill-negative attitudes used pills as a last-resort method of alleviating pain and typically preferred to try other remedies first. Several participants’ attitudes shifted from pill-positive to pill-negative. Participants whose attitudes shifted from pill-positive to pill-negative often cited a negative experience or association with OTCAs that prompted this change. Lastly, participants with pill-questioning attitudes specifically voiced their indecision about taking OTCAs due to a variety of factors. There was no noticeable variation between men’s and women’s attitudes towards self-medicating pin with OTCAs. Tables 1a and 1b organize the data:

Table 1a. Subtheme analysis criteria for attitudes towards self-medicating pain using OTCAs

Attitude*	Description	Example
Pill-Positive	Experiences pain and expresses no hesitation about taking an OTCA to relieve pain	"I'm like if I have a headache, I'm going to take Advil or an ibuprofen" (Sarah).
Pill-Negative	Experiences pain and expresses reservations and/or concerns about taking OTCAs to relieve pain; OTCAs are a last resort	"Well I don't really like taking painkillers. Not a huge fan… don't know… like I know they work, but not all the time. Or if it's like that constant and that painful, like it might diminish it a little bit but the pain is still there. So it just seems kind of pointless to take it" (Ava).
Pill-Questioning	Experiences pain and expresses indecision or questions his/her own decision about taking OTCAs to relieve pain	"But I mean I think even ibuprofen sometimes, like this little pill will make my headache go away, that's weird. But I continue to do it unless something comes up. I mean you hear things all the time about how it could cause cancer or something" (Michael).
(no determination)	Unclear or other attitude	Unclear or other attitude

*A shift from pill-positive to pill-negative is not included in this table because it is a shift between attitudes rather than an attitude itself

Table 1b. Summary of participants' genders, ages, and attitudes



Participant (Gender, Age)	Attitude(s)
1 (W, 21)	Pill-positive
2 (W, 21)	Pill-positive
3 (W, 19)	Pill-positive
4 (W, 20)	Pill-negative
5 (M, 21)	Pill-positive
6 (M, 20)	(no determination)
7 (W, 20)	Pill-negative
8 (W, 20)	Pill-questioning
9 (W, 20)	Pill-positive to pill-negative
10 (W, 21)	Pill-positive
11 (M, 21)	Pill-positive
12 (W, 20)	Pill-positive to pill-negative
13 (W, 21)	Pill-positive to pill-negative
14 (M, 21)	(no determination)
15 (M, 20)	Pill-positive and pill-questioning
16 (M, 21)	(no determination)
17 (M, 19)	Pill-questioning
18 (M, 20)	Pill-questioning
19 (M, 21)	(no determination)
20 (W, 22)	Pill-negative
21 (W, 21)	Pill-positive
22 (M, 22)	Pill-positive
23 (W, 21)	(no determination)
24 (M, 22)	Pill-positive
25 (M, 22)	Pill-positive
26 (W, 19)	Pill-positive
27 (M, 22)	Pill-positive

Pill-positive attitudes

Participants with pill-positive attitudes towards self-medication expressed no hesitations about their decisions to take OTCAs to remedy any pain that impacted their ability to function normally. They provided a variety of explanations for accepting them as appropriate self-medication practices that helped them return from an ill to a normal state. In general, participants with pill-positive attitudes towards self-medication will take or do whatever remedies their pain the best, but OTCAs are usually their preferred solution. Kyle (P27) exemplifies a pill-positive attitude and made one thing very clear during our interview: if there's pain in his head, he needs a quick solution. Kyle frequently engages in sports and other outdoor activities, so he's accustomed to dealing with constant physical bruises, contusions, and injuries. I asked him more about why he uses OTCAs so frequently. He replied, "[…] I take it primarily for headaches and little stuff. […] I don't like things effing with my head where I can't think and stuff, so I'll take it immediately because that stuff really irritates me." Kyle regularly self-medicates his headaches to return to his normal role. His pill-positive attitude towards self-medicating pain with OTCAs stems from a desire for a quick solution to pain.

Michael's (P15) impatience was also obvious as he detailed to me his extreme dislike of headaches. He automatically turns to OTCAs for various types of relief:

> *I usually feel it [the headache] and I'm like, 'Oh this is annoying, it's bothering me.' I hate that it puts me in a bad mood to get a headache because there's nothing I can do about it besides like close my eyes and pray for it to be over. And I don't think I experience migraines or anything, I think it's a standard headache. But it just pisses me off. It's annoying and it bothers me and I want to do what I can to get rid of it. So if I'm at my apartment, then I will go to the cabinet and take two ibuprofen and I feel the effects like right away. But not because it's like kicking in right away, but because I feel like, 'Oh I just took the ibuprofen, it's going to be fine.' And then I usually forget about it (Michael).*

Michael's pill-positive attitude towards self-medication serves not only a physical purpose, but also a psychological one. He medicates himself to best relieve his physical pain, but also recognizes changes in his mood or psychological comfort from taking a pill.

Michael is not the only participant I spoke with who bases self-medication practices on a purely physical need. Sarah (P10) lives with occasional pain episodes from shin splits thanks to her constant workouts and position on a club sports team at Emory. As we were discussing how she manages her shin pain through OTCAs, I asked her to elaborate on how she decides when pain is severe enough to self-medicate with OTCAs instead of the basic rest, ice, and elevation she also described. She revealed her ultimate attitudes towards self-medication, explaining:

> *You know what, I don't really discriminate that much. I'm like if I have a headache, I'm going to take Advil or an ibuprofen. Meanwhile my sister is very anti-pills, so she'll just wait it out or whatever. But I strongly believe in the placebo effect, regardless if the pill is going to do anything for my head or my shins or whatever. I just feel proactive taking it (Sarah).*

With this pill-positive mentality, Sarah looks for the benefits that OTCAs provide her quality of life instead of dwelling on possible drawbacks. Not only does taking pills temporarily relieve her pain, but she also gets a positive feeling from taking action in her own care, specifically mentioning the 'placebo effect.' She may not trust in the biochemical relief the pill provides, but she trusts in the psychological liberation it will give her.

Both Michael and Sarah receive psychological relief from consuming OTCAs for pain. They both feel better, in some way, as a result. In his book *Meaning, Medicine, and the 'Placebo Effect,'* Daniel Moerman writes about an experiment done by Dr. Fabrizio Benedetti in the late 1990s that attempted to evaluate psychological impact of various methods of analgesic administration in a hospital setting. To do this, Benedetti and his colleagues varied the ways in which they administered post-operative analgesics to patients. Some patients unknowingly received analgesics through an intravenous line and others were aware that they were receiving analgesics through injections. They found that patients who were aware of their medication intake expressed a lower need for the medication to manage their pain. Benedetti concluded, “The fact of experiencing the medication made it work better” (Moerman 2002, 108). This experiment employs questionable research ethics and wouldn’t or shouldn’t be replicated on a larger scale today, but it demonstrates that relieving pain involves more than biochemical interactions. It is a matter of body, mind, and trust. To infer psychological relief from analgesic consumption is to assume that people trust in the power of the drugs they’re given – ultimately shaping their attitudes towards using them.

Michael’s and Sarah’s pill-positive attitudes towards using OTCAs to self-medicate pain stem not only from the physical relief they might receive, but also because of the psychological relief it offers. Their double-sided motivation for using OTCAs gives their attitudes towards using OTCAs to self-medicate pain multiple dimensions. For Michael and Sarah, the act of consuming OTCAs causes this dual relief. They trust that the OTCAs they select are appropriate for their needs and will work physically, psychologically, or both. They also fulfill their sick roles by using OTCAs to remedy their pain and return to a normal state. Perhaps Sarah’s ‘proactive’ feeling comes from this achievement.

Pill-negative attitudes

Even though some participants favored or freely accepted OTCAs as a part of their self-medication attitudes and behaviors, others did not. Participants with pill-negative attitudes towards self-medication expressed reservations about ingesting OTCAs and usually turned to other remedies to resolve their pain before even considering taking a pill. After reviewing transcripts and notes on interviews related to this attitude, I noticed that participants provided one or more of three main explanations for not resorting to OTCAs: (1) pain is temporary, (2) pain is constant, and (3) there could be unintended consequences. The first recurring explanation participants offered is that pain is temporary, so it's not worth the risk of any consequences. Participants who conveyed this message also spoke of the reasons they held their pill-negative attitudes. Esther (P8), for example, lives with ulcerative colitis and other gastrointestinal (GI) disorders. I asked her why she avoids taking OTCAs for period pains, headaches, or injuries. She answered:

> *Because I feel like it's [the pain] not going to last for that long and I can just get over it. I also know like taking so much Advil can cause problems with your stomach. And I obviously don't take that much Advil but I feel like it's not really worth it (Esther).*

She takes prescribed medication for her GI disorders and avoids ingesting anything else that might upset her stomach or trigger a reaction. Esther only mentioned Advil during our conversation, a brand name form of ibuprofen that can pose serious GI side effects (Abbott and Fraser 1998). She is wise to avoid Advil given her existing GI disorders, but other OTCAs like acetaminophen do not have such intense effects on the stomach. Instead of mentioning acetaminophen or other OTCAs as an alternative to Advil, she referred to all OTCAs as Advil throughout our conversation. She also informed me that her parents are "really into Advil." Her pill-negative attitude stems from an evaluation of potential risk based on what she knows.

Natalie (P7) also avoids OTCAs because of a mindset that pain is temporary. Unlike Esther, however, Natalie grew up playing volleyball for a coach whose sister overdosed on drugs (she didn't specify the type), and was taught that analgesic medication is a last resort. I didn't ask for details of this person's addiction or if OTCAs were involved. Natalie further explained:

> *I typically think that pain subsides eventually, like you just have to let it run its course. So I guess growing up with that model [the coach] in my life of like 'it's going to go away, just use it if you literally have to,' like if I have a super throbbing headache I'll be okay [...] (Natalie).*

Natalie and Esther both agree that pain is temporary, but this attitude might stem specifically from Esther's inability to take other drugs from medication or Natalie's ultimate fear of other consequences. For them, OTCAs don't necessarily provide the relief or comfort that they do in some participants with pill-positive attitudes. They are instead more comfortable with feeling some impermanent pain to avoid learned and perceived repercussions.

Contradicting the mindset that pain is temporary is a second recurring explanation for a pill-negative attitude that pain is actually constant and inevitable, and therefore OTCAs are a wasted effort. During various interviews, participants told me stories of constant pain from surgeries or prolonged injuries. Unlike in participants with pill-positive attitudes, participants with pill-negative attitudes were noticeably more patient with pain's presence in their lives. When I spoke with Ava (P20), she had recently undergone surgery in her right hip. She mentioned that she avoided taking prescribed painkillers and OTCAs after her surgery and during recovery despite her limited range of painless motion. She said:

> *Well I don't really like taking painkillers. Not a huge fan… don't know… like I know they work, but not all the time. Or if it's like that constant and that painful, like it might diminish it a little bit but the pain is still there. So it just seems kind of pointless to take it (Ava).*

Not only does Ava question the effectiveness of OTCAs, but she also uses the constancy of pain during recovery to explain why she didn't want to take them. Other participants echoed this sentiment.

Inez's (P4) attitudes towards taking OTCAs for constant pain align with Ava's, but Inez specifically outlined her reasons for avoiding OTCAs during recovery from surgery. After undergoing knee surgery, Inez knew she would have a long recovery process. She decided to work through her painful rehabilitation in hopes of long-term benefits, justifying her decisions to not take OTCAs during the process:

> *I feel like there's a difference between something being sore from putting a lot of work into it [during physical therapy] and something being painful. When you injure yourself, it's hard to tell what the difference is because you're trying to get things back to what it was before. So I didn't want to take Advil for something being sore because of working on it, because that's how I know it's working. So if you mask that pain then you don't know that you're taking the steps to make it better (Inez).*

For Inez, pain means progress and, ultimately, healing. She described her pain post-surgery as constant, but also temporary, as she knew it would disappear with the right rehabilitation and indicate that her knee repair was a success.

The third main explanation connected to participants' pill-negative attitudes was more fearful of what using OTCAs could mean in terms of becoming addicted to analgesics or experiencing other undesired consequences. I was not surprised to find this a topic of conversation during interviews given the overwhelming amount of attention media has brought to the US opioid epidemic over the past few years. This epidemic, first catalyzed by misuse and increased availability of prescription opioid analgesics, has been prolonged by a surge of illegal, synthetic opioid substances among other socioeconomic and political factors (Lyden and Binswanger 2019, 123). The public's perceptions of this epidemic, however, are largely shaped by images and stories. Real pictures and accounts of the devastating effects of addiction on individuals, families, and communities stir fear and associate opioids with negative experiences. TIME Magazine's "The Opioid Diaries," for example, is a photo report depicting opioid users, families mourning the loss of loved ones to overdose, and quotes of despair from leaders and officials (The Opioid Diaries: Inside the Epidemic That's Ravaging America n.d.). Fear and uncertainty are some of the many consequences the US public faces as a result of this epidemic. These emotions are reflected in participants' attitudes towards using OTCAs – legal substances – to self-medicate pain.

Sasha (P9) is one participant who expressed reservations about using OTCAs for various reasons. A large topic of conversation during my interview with Sasha was her self-proclaimed "shockingly high" pain tolerance. She recounted to me her many athletic injuries and corrective surgeries. Her recent hip labral tear was the worst one her surgeon had ever seen, but she felt no pain and wasn't aware she was even injured until she noticed differences in her athletic performance. She expressed that because she has an unusually high pain tolerance, she wants to be very careful about using any type of painkiller, opioid or non-opioid. This pill-negative attitude stems from the fact that she rarely, if ever, self-medicates injuries because she struggles with understanding her body's signals. She told me she refused to take acetaminophen that doctors recommended to her post-hip surgery for controlling inflammation. I asked why she wouldn't even take an OTCA endorsed by healthcare professionals; she responded:

> *Sasha: I don't know. I don't like pain medication.*
> -*Why don't you like pain medication?*
> *Sasha: I don't know.*
> -*Have you used it throughout your life?*
> *Sasha: Like if I have a fever I'll take medication. That's basically it. Because I know that like I cannot heal myself if I have a fever. Because that's an external thing and it's not my responsibility to fix but like I feel like when I am in pain, I shouldn't be in pain, and I'm a little bit scared to take pain medication because of how high my pain tolerance is. I almost think I need to be in pain in order to, like, be able to hold myself back. Because otherwise then I'll have no marker. Because I'm not sure if you can abuse Advil, but with anything, if I started taking all these pain medications and started to constantly have these in my body I don't even know what I could be capable of, and I basically already have that coursing through me considering I'm never in pain.*

Sasha's story encompasses a thought that other participants share – that using any type of pain medication paves the way for a 'slippery slope' to more nefarious analgesics and consequences of addiction. This attitude often came as a realization to participants from an experience that prompted them to think differently about how they used OTCAs, sometimes shifting their attitudes about self-medicating pain with OTCAs.

From pill-positive to pill-negative

Pill-positive and pill-negative attitudes are not mutually exclusive. Some participants spoke with me about a shift in their attitudes and practices towards self-medicating pain with OTCAs. Participants whose attitudes about using OTCAs to self-medicate pain changed generally encountered a negative experience with OTCAs at some point in their lives. I noticed this shift when asking them to give examples of how they treated pain in the past and if they continue those practices now. Becca (P13) spoke with me about her experiences of being injured on an all-girls basketball team in middle school and how she coped with that pain. She told me that she regularly used OTCAs to manage her pain for practices and games in middle school and high school until she saw some of OTCAs' effects on her teammates. She revealed:

> *Well this is going to sound bad, but I knew girls who had to get their stomachs pumped because they were taking too much of the same things I was taking [OTCAs] and for the same reasons – they were playing sports and always injured. And I was like, 'That's not going to happen to me' (Becca).*

Seeing the conditions of her teammates prompted Becca to re-evaluate her own self-medication practices. Now, a few years later, she deals with pain until it subsides on its own and listens to her body's signals rather than immediately turn to OTCAs for help.

Anika (P12) also shifted her attitudes towards self-medication from pill-positive to pill-negative after a personal experience. A former member of a varsity sports team at Emory, Anika usually took OTCAs regularly to self-medicate sore muscles, migraines, and a concussion. She consumed OTCAs not constantly, but regularly for her various afflictions since she became involved in athletics in middle school. When she was diagnosed with a concussion last year, however, she began to take ibuprofen more frequently – the maximum recommended dose on an empty stomach every day – to mitigate her incessant headaches. After three straight weeks of this habit, she visited an urgent care because of a weird, constant stomach pain. She and her doctors attributed her stomach pain to excessive ibuprofen consumption. Since that incident, she stays away from ibuprofen and other OTCAs unless absolutely necessary, recounting:

> *Anika: […] I would rely on it [OTCAs] almost daily. Probably like one does: two, one, average dose of either Advil or Tylenol.*
> *- Just because of your muscles?*
> *Anika: Yeah.*
> *- And now you've kind of stopped.*
> *Anika: I only take it if extremely necessary.*
> *- Is that because of your stomach issues?*
> *Anika: Yeah, I'm scared.*

Anyone can understand her fear of taking OTCAs in this quantity again to medicate her pain, at least I can. Anika's story is just one example of how an experience can prompt an attitude shift. I did not speak to anybody during this project who shifted his or her attitude from a pill-negative to pill-positive one, but that might be something to explore in future studies. Maybe new pain or injuries could prompt a person to seek a solution they can administer themselves like OTCAs. While the examples and quotes mentioned this section support themes and explanations I've identified as significant findings from my interviews, participants' experiences can include more than one of these categories and extend beyond these descriptions. Many participants I spoke with did not have as developed perspectives on their own self-medication behaviors as others, and as a result, seemed to think aloud to me while we discussed their experiences. I will speak about them in the following section as "pill-questioning attitudes" towards self-medicating pain.

Pill-questioning attitudes

Two participants in particular spoke about their struggles in deciding whether or not to use OTCAs and commented that they were unsure about information surrounding them. I inferred that their grasp and opinions about OTCAs was not as developed as other participants', and have termed their attitudes towards using OTCAs to self-medicate pain 'pill-questioning.' I mentioned Michael earlier for his dislike of headaches and pill-positive attitude towards using OTCAs to self-medicate his headache pain, but he also questioned his own pill-positive attitudes near the end of our interview. As we discussed his views about OTCAs, he expressed:

> *Michael: Sometimes I think it's weird that like this little pill has the power to alternate my physical state.*
> *- It is weird.*
> *Michael: Sometimes it freaks me out. It doesn't freak me out enough for me not to do it.*
> *- Even just an over-the-counter?*
> *Michael: Yeah, even over-the-counter. I just think it's weird that like even abusive, illegal drugs…that freaks me out that people do that so casually. But I mean I think even ibuprofen sometimes, like this little pill will make my headache go away, that's weird. But I continue to do it unless something comes up. I mean you hear things all the time about how it could cause cancer or something.*

Michael admits he's not entirely comfortable with taking pills in general, but he continues to do so to resolve an ill state. Attitudes towards self-medication are certainly not objective and they do not determine someone's actions. As shown through Michael's remarks, attitudes about self-medicating pain with OTCAs don't always fit into boxes. They are fluid and depend on a multitude of factors.

Gabriel (P18) forces his body through physical wear and tear as a member of a varsity sports team at Emory. He shares similar traits with Kyle in terms of the extreme injuries and pain he endures on a weekly basis. Unlike Kyle, however, Gabriel questions why and if he even should use OTCAs. We discussed his self-medication practices during his sports season, and he contemplated before answering:

> *Gabriel: I definitely don't take them every day because I like to use the other things to mitigate [pain]. When I do, I'll take three or four. And I don't take them multiple times a day. For me, I don't mind practicing hurt, so I usually won't take them before practice, but when I'm playing, before a game I like to feel good and perform my best, so there are times I take four before a game especially when I had my ankle injuries, I'll take four or five easy.*
> *-Why do you prefer to not take them and use other treatments?*
> *Gabriel: Because I hate the idea of being dependent on anything that's not natural, that's a weird word, but I hate the idea of being dependent on something, especially things that I don't understand what they are. Because I know if you take ibuprofen or Tylenol too much you can get ulcers or whatever. I'm not exactly sure […].*

Gabriel uses prior knowledge to assume that he would face consequences of dependency or stomach pain if he continues to use them. Despite this, he still elects to use them in certain contexts – sports games – to perform with as little pain as possible. His decisions of how and when to self-medicate are not simple.

Conclusion

Participants' attitudes towards self-medicating pain with OTCAs reflect their life stories, beliefs, and experiences. In this chapter, I categorize participants' attitudes towards self-medicating pain with OTCAs into subthemes, but people's actual experiences and feelings are much more complex. No two people experience pain and healing the same way. Views about when, how, and why to self-medicate are diverse. Self-medicating pain requires that people make decisions about whether their pain is illness. They then must act to remedy it to return to a normal role. Often, this is through the use of OTCAs.

My findings in this chapter clearly indicate a modified element of Lévi-Strauss's traditional shamanistic complex. The fact that participants in my study expressed attitudes towards self-medicating pain with OTCAs suggests that they are consumers who assume the role of doctors in identifying and treating illness. The ability to obtain analgesics without the advice of a doctor gives them responsibility and agency in their own care and shapes them into their own healers. They believe in their own powers and understand their bodies and roles in society. In the following chapter, I will discuss how participants also believe that pharmaceutical companies produce effective medication, and how this belief entrusts pharmaceutical companies with doctor-like powers, as well.

Ultimately, participants' various attitudes presented in this chapter should be further investigated to assess their relationship with their OTCA consumption methods. For example, does a pill-positive attitude towards using OTCAs to self-medicate pain correlate with misuse or overdose? Does having a pill-questioning attitude correlate with a lack of knowledge about OTCAs available on the market? These topics are crucial in evaluating the true risks OTCAs pose to this population and can identify areas for improvement in education in this setting. Future research should also explore the relationship between gender and self-medicating pain with OTCAs. While my findings do not provide conclusive insight into this matter, existing literature on the influences men and women experience in their perceptions of pain and tendencies to self-medicate suggests a need for more directed investigation into the topic. These influences could shape their attitudes or behavior, in which case OTCA use and misuse can be better understood in men and women. The following chapter investigates participants' knowledge and consumption of OTCAs independently of their existing attitudes, but all of these factors contribute towards a better understanding of OTCA use in Emory undergraduates.

CHAPTER FOUR

How Participants Learn about and Consume Over-the-Counter Analgesics

I don't think I've ever even looked at instructions to check how much. I just don't think that they would give me anything that I could conceivably take so much of that it would kill me (Kyle).

I sat across from Kyle trying not to gape at his response to my question: do you read the directions when you take OTCAs? I didn't anticipate that any participant would describe their OTCA use as loosely and confidently as Kyle did. He trusts that "they" – I assume he meant general companies, agencies, and vendors in the context of our conversation – would intervene if it was unsafe to purchase and consume OTCAs in any conceivable way. Kyle's comments are on the more extreme end of what I learned about how participants consume OTCAs, but he is not alone. This is problematic, since OTCAs are not foolproof solutions to pain. They come with the potential for serious side effects and regular misuse (Abbott and Fraser 1998). The emergence of over-the-counter analgesics was *not* a result of the healthcare community declaring they are safe for anybody to use. It was an outcome of rising healthcare costs, self-care movements, and desires for quick solutions to illness (Vuckovic and Nichter 1997). As people solicit more products and companies respond to consumer demand for medications and services to treat pain, this market for OTCAs will expand even more (Conrad and Leiter 2004). OTCAs in the United States threaten an ominous future if a lack of knowledge persists about how people learn about them, consume them, and why they continue to turn to them for relief.

Using OTCAs requires a person to make autonomous decisions about types, quantities, and times to consume them. Though a person makes this decision for him or herself, they are not without influence. Before using them to relieve pain, a person must learn that they exist as an option. When discussing participants' OTCA use during interviews, these two components – learning and consuming – dominated much of our conversations. In this chapter, I will provide information about existing concepts and studies related to learning about and consuming OTCAs. I will then describe my findings about participants' general sources of OTCA information, basic knowledge about generic and brand names, and methods of ingestion. Overall, participants learned about their OTCAs from the same types of sources, but their knowledge and ingestion methods varied in how much they knew about OTCA options and whether or not they follow recommended doses on packaging. This indicates that what participants initially learn about OTCAs could influence what they know and how they consume them throughout their lives.

Learning about OTCAs

Think back to your first memories of pain as a child. Did your parents rush you to an emergency room for a stubbed toe or headache? Or did they give you a pill of acetaminophen and wait to see if you felt better? These actions are some of our first exposures to learning how to respond to and manage pain. In *Social Lives of Medicines*, Whyte, van der Geest, and Hardon investigate the intimate role medicines play in the relationship between a mother and her child. They explain, "By giving medicines, mothers show that the child is in need of care (thus confirming the child's sick role) and that they are good mothers. At the same time, by doing something about the condition, they imply that they are in control" (Whyte, van der Geest, and Hardon 2002, 30). By acknowledging a child's state of pain, illness, and acting to remedy it, parents assume control over their child's health. In a sick role, a child cannot necessarily seek help independently. They rely on parents instead to provide them with resources and knowledge to return to a normal state (Parsons 1958). While Whyte, van der Geest, and Hardon don't mention the details of how children learn about medication from parents, this special nature of medication lends itself to the idea that certain ways people learn about it might be more impactful than others.

In "The Anthropology of Pharmaceuticals: A Biographical Approach," Sjaak van der Geest et al. reason that having specialized knowledge about drugs spurs the formation of social networks among those who know and share such information. People demonstrate their drug knowledge in understanding, selecting, and preparing drugs for ingestion, which connects them with others who do the same (van der Geest, Whyte, and Hardon 1996, 167). They also posit that drugs create and maintain these relationships (168). In other words, our social networks impact what we learn about drugs and why. Consider the impact of knowledge about medication passed from a parent to a child. In giving children medication, parents teach them about what is appropriate to use and what is not. Behaviors and habits in children result from the example set by their parents. When analyzing OTCA use in populations, understanding how and what people learn about OTCAs could provide insight into their knowledge and ingestion methods.

Thus, it is of little surprise that every participant in this project, regardless of gender or attitude towards self-medicating pain with OTCAs, cited one or both of their parents as their primary source of information about OTCAs. A few also referenced doctors as sources of information about taking an OTCA for minor pain or inflammation, but even those participants also attributed their main knowledge about OTCAs to their parents. While the act of giving and receiving medication between a parent and child is born of dependence, it fosters trust and habits.

My conversation with Maggie (P21) encompasses the general idea participants relayed when speaking about where they get their information about OTCAs:

> *-And who gave you information about these [OTCAs]?*
> *Maggie: Definitely my mom. My mom is also very like 'don't take more [than recommended], it's bad for you, it'll destroy your liver.' And we're both probably guilty of taking way more than we should, but for her children, she's very strict.*

Her mom evidently wants the best for her children and recognizes that OTCAs are helpful if used appropriately. But Maggie recognizes a disconnect in how her mom uses OTCAs and how she expects her children to use them. Her choice of the word ‘guilty’ implies that she knows there is an appropriate way to consume OTCAs that her mother wants her follow, but neither she nor her mother does so. I didn’t ask Maggie more about her mother’s specific OTCA practices, but I am curious if other people assume the same behaviors as their parents or to what degree they retain this knowledge from their parents about OTCAs into their adult lives. Sources of information surely influence a person’s knowledge of a subject. For college students just leaving home and entering a new environment, they might not yet have been exposed to other sources of information about OTCAs. Thus, whatever they learn from their parents carries into this new part of their lives.

Consuming OTCAs

To consume an OTCA is to select, purchase, understand, and ingest the medication. OTCAs are products, and people are consumers. Every medication has a “total drug effect” – the non-biological aspects of medication such as its packaging, color, name, and delivery method (van der Geest, Whyte, and Hardon 1996, 167). These “total drug effects” of medications influence the ways in which people view and use them (van der Geest, Whyte, and Hardon 1996, 167). The non-biological aspects of OTCAs in particular consist of a multitude of brands, names, chemical compositions, and forms. These different OTCAs appear together on the same store shelves and force consumers to make decisions beyond whether or not to self-medicate pain that include what to purchase and how much. Since the non-biological aspects of medication influence the ways we view and use them, it’s important to investigate if people notice these characteristics in the first place. In the diverse market of OTCAs, consumers may not always be entirely informed about their product options.

Some existing research attempts to evaluate people’s knowledges of OTCAs, especially among adolescents. Karen Wilson et al.’s study, “Knowledge Gaps and Misconceptions About

Over-the-Counter Analgesics Among Adolescents Attending a Hospital-Based Clinic," examines adolescents' knowledge of OTCAs and their side effects. Researchers surveyed 96 patients in a hospital ages 14 – 20 years old about generic vs. brand name recognition, side effects, and interactions between various OTC drugs and other substances. Survey results showed a significant gap in their study participants' knowledge of brand and drug name associations, side effects, and drug interactions with alcohol. They found that older patients had more knowledge than younger patients and males knew more than females. This study provides an example of how to collect information about OTCA knowledge and compare it between populations. It also identifies areas for improvement on educating adolescents about certain subjects. More extensive studies could be done on these social relationships and factors that impact OTCA knowledge and consumption.

L. Hughes et al. contribute some of the limited qualitative data available in the field of OTC knowledge levels. In their study, "Patients' knowledge and perceptions of the side-effects of OTC medication," they conducted interviews and focus groups involving thirty-two patients recruited from community pharmacies in the United Kingdom to evaluate their knowledge of various OTC medications' side effects. They ultimately found that "the interviewed patients also had very poor knowledge of the possible side-effects of their medication," and most had not sought out specific information about NSAIDs, which can have considerable side effects such as GI hemorrhage (Hughes, Whittlesea, and Luscombe 2002, 246). This is worrisome, for patients who use OTC medications to cure illness could suffer even more as a result of misuse or a reaction to it. Even though this study focused on participants' knowledge of possible side effects, it provides insight into the level that people generally attempt to learn about the OTC medications they are consuming, which is not much. Other factors, too, could evaluate a person's knowledge of OTC medications other than side effects, such as brand names, generic names, price comparisons, appearance of pills, or recommended doses.

Awareness of brand and generic names

In this project, I aimed to gain an understanding participants' general knowledge of OTCAs available on the market. To do so, I asked participants to identify brand and generic names of OTCAs they brought up in conversation. Pharmaceutical companies "discover and develop" brand name drugs that undergo FDA licensing for over-the-counter sale (What's the Difference between Brand-Name and Generic Prescription Drugs? 2004). These companies patent these drugs to dominate shares of the market and profit off their sale, but when their patents expire, other manufacturers produce 'generic' versions of the same drug that are "bioequivalent" to the brand name drug (What's the Difference between Brand-Name and Generic Prescription Drugs? 2004). Though there is debate as to what bioequivalence means and should mean, generic and brand name medications differ more in price and industry then they do chemically. Asking participants to identify bioequivalent OTCAs gives insight into their general knowledge of their options as a consumer.

Moreover, brand and generic drugs vary in meaning to consumers. In *Meaning, Medicine, and the 'Placebo Effect,'* Daniel Moerman posits that branding drugs gives them a dimension of meaning that consumers can easily remember. He draws these conclusions from A. Brathwaite and P. Cooper's 1981 experiment, "Analgesic Effects of Branding in the Treatment of Headaches." These researchers investigated the effectiveness of different types of aspirin on headache pain relief. In their study, five groups with headache pain each received a different type of treatment: nothing, generic analgesic placebo, branded analgesic placebo, generic aspirin, and branded aspirin. The branded names of the placebo and actual aspirin are the same. Those who received a placebo were blind to that fact. Results from this experiment indicated that all groups who received a pill had more relief than the group who received nothing. Groups who received aspirin had more relief than those who received a placebo, and groups with the branded placebo and branded aspirin reported more relief compared to groups that received generic analgesic placebos and generic aspirin, respectively. Moerman suggests that these results are meaningful for what they indicate about the trust people have in brand-name medications. He proposes, “Through years of advertising, these people just *knew* that this was really good aspirin. And it made a difference” (Moerman 2002, 20). Advertising brands helps pharmaceutical companies keep their products on the market. Loyal customers see meaning in a branded medication that is different from a generic, bioequivalent version. This adds a dimension to consumers’ trust in the pharmaceutical industry about not only its ability to produce effective analgesics, but also if some types are better than others.

During my time at Emory, I’ve noticed that people frequently use brand (ex. Advil) and generic (ex. ibuprofen) names of OTCAs interchangeably. To further investigate this observation and discover if an element of trust manifests in the ways participants talk about brand and generic analgesics, I asked participants basic identification questions if the opportunity arose during interviews. Since not all participants regularly use OTCAs, asking about their knowledge of side effects or other characteristics was counterproductive; if they don’t consume OTCAs in the first place, they would not be motivated to even become aware of such information. But each participant did mention either a generic or brand of an OTCA during our conversation. Asking participants to identify a corresponding generic or name brand OTCA gives insight into their knowledge of the OTCA market in general – whether they even know that there is a difference between brand and generic medication and, if so, which ones are ‘bioequivalent.’ If they used a generic name of an

OTCA first in an unprompted manner when speaking with me, I asked them to then identify a brand associated with the generic OTCA. If they used a brand-name OTCA first in an unprompted manner, I asked them to identify the generic form. I then evaluated transcriptions and assigned participants' abilities to make identifications as low, medium, or high according to the following subtheme analysis criteria in Tables 2a and 2b. Table 2c includes the corresponding participant traits:

Table 2a. Brand and generic name associations used to evaluate identification ability*

Generic Name	Brand Name
Acetaminophen	Tylenol
Ibuprofen	Advil and Motrin
Naproxen sodium	Aleve and others confirmed during analysis
Combination over-the-counter analgesics	Excedrin, Midol, DayQuil, NyQuil, and others confirmed during analysis

*****I have only included in this analysis generic and brand names of medications that appeared in conversations with participants. This table is not an exhaustive list of all OTCAs on the market.

Table 2b. Analysis criteria for brand and generic OTCA identification ability

Identification Ability	Description	Example
Low	Totally unaware of brand and generic concept or generally aware of some brand or generic names but unable to list corresponding names	Mentioned Advil and Tylenol but unaware of the term 'generic'
Medium	Generally aware of brand or generic names and able to list some corresponding names	Mentioned Advil and Tylenol and only identified ibuprofen as the generic name of Advil
High	Aware of all brand/generic names and corresponding generic/brand names	Mentioned Advil and Tylenol and identified generic names as ibuprofen and acetaminophen, respectively

Table 2c. Summary of participants' genders, ages, attitudes towards self-medicating pain, and identification abilities

Participant (Gender, Age)	Attitude(s)	Identification Ability
1 (W, 21)	Pill-positive	Medium
2 (W, 21)	Pill-positive	Medium
3 (W, 19)	Pill-positive	Medium
4 (W, 20)	Pill-negative	Low
5 (M, 21)	Pill-positive	High
6 (M, 20)	(no determination)	High
7 (W, 20)	Pill-negative	Low
8 (W, 20)	Pill-questioning	Medium
9 (W, 20)	Pill-positive to pill-negative	Medium
10 (W, 21)	Pill-positive	Medium
11 (M, 21)	Pill-positive	Low
12 (W, 20)	Pill-positive to pill-negative	High
13 (W, 21)	Pill-positive to pill-negative	High
14 (M, 21)	(no determination)	Low
15 (M, 20)	Pill-positive and pill-questioning	High
16 (M, 21)	(no determination)	Low
17 (M, 19)	Pill-questioning	Medium
18 (M, 20)	Pill-questioning	Low
19 (M, 21)	(no determination)	Medium
20 (W, 22)	Pill-negative	High
21 (W, 21)	Pill-positive	Medium
22 (M, 22)	Pill-positive	High
23 (W, 21)	(no determination)	High
24 (M, 22)	Pill-positive	High
25 (M, 22)	Pill-positive	Medium
26 (W, 19)	Pill-positive	Low
27 (M, 22)	Pill-positive	High

I did not anticipate that participants would vary as much as they did in their ability to identify brand and generic names of OTCAs. All identification abilities appeared in men and women and alongside all three attitudes. There is no evident relationship between attitude and identification ability nor between gender and identification ability. The most common brand names mentioned were Advil, Tylenol, and Aleve, and the most common generic names participants mentioned were ibuprofen and acetaminophen. These identification abilities also do not indicate a participant's practice of actually preferring to ingest generic or brand names of OTCAs. I asked about patients' go-to types of OTCAs during medications, but only a few participants identified one specific type of OTCA they used the most. It does not appear that all participants have a full understanding of the OTCA medical market and their options. This variation could be the result of information parents provide children about OTCAs, since that was participants' most prominent source of information about OTCAs. If participants follow their parents' instructions and don't question what they're told, they would have no reason to learn more about the options available.

Some participants in my study represent these concepts of brand and generic medications well. Omar (P11) exemplifies Moerman's prediction that brands provide meaning and trust to medication. In our conversation, Omar mentioned that he uses Advil and Tylenol and was unable to list the corresponding generic names of the drugs. He asked me what generic meant and I provided a brief explanation before asking:

> -*Would you consider buying the generic brand of Advil or Tylenol?*
> *Omar: I don't know why I would. I would just buy Advil.*
> -*Sometimes they're cheaper.*
> *Omar: Well, it's medicine.*
> -*What does that mean?*
> *Omar: Well, I would never buy an off-brand chip of Doritos, and this is medication, so I'm going to buy something that I trust.*
> -*Okay, why do you trust Advil and Tylenol?*
> *Omar: It's just what I've always done, it's been recommended to me by doctors.*

Omar's trust in the brands Advil and Tylenol runs deep over his lifetime and results from his habits and trust in how he learned about them. His dad is a doctor and has always recommended him the Advil and Tylenol brands. Shown in Table 2c, his ability to identify brand and generic drugs is low. This may result from the habits he's formed over time and the knowledge he has about what he believes works and doesn't work for his body's needs. The name 'Advil' *means* something to Omar. He trusts it, uses it, and is not motivated to change.

Ingesting OTCAs

Our parents, teachers, and elders teach us to follow directions from the moment we begin to learn how to make decisions. I was surprised to find that not all participants read directions before taking OTCAs and that they instead had various methods for ingesting OTCAs. The final step of consuming an OTCA is ingesting it in a certain amount, or dose, and at certain times. Pam Scholder Ellen et al. assessed young consumers' OTC medication use and factors that could contribute to misuse (overuse and/or off-label use) in "How Well Do Young People Follow the Label? An Investigation of Four Classes of Over-the-Counter Drugs." In their study, 'use' equates to ingestion. They surveyed 294 undergraduate students from two American universities about their parents' approval of their self-esteem and accomplishments, perceived risks, and ingestion practices of four types of OTC drugs, one being pain relievers. Their study was extensive and explored many factors that could contribute to variations in OTC drug use, but the finding most relevant to this project is their conclusion that "Unintentional overuse [of pain relievers] is due simply to misconceptions on the users' part as to the appropriate drug usage. There seems to be a common misconception that the recommended dosage for ibuprofen, caffeine tablets, and bronchodilators is two tablets" (Ellen, Bone, and Stuart 1998, 83). One of the main ingestion methods that appeared in my transcription analysis was also the response that participants just "take two" of whatever OTCA in question when I asked them about how much they consume or if they follow the dose.

I identified and termed three main methods participants followed whenever they ingest or ingested OTCAs, outlined in Table 3a, and then assigned participants the appropriate ingestion method, seen in Table 3b:

Table 3a. Analysis criteria for ingestion methods

Ingestion Method	Description	Example
Follows directions	Always follows recommended doses on bottles	"I follow the instructions"
Takes two	Usually just takes two pills of whatever OTCA is in bottle regardless of dosage	"I've gotten into the habit of just taking two of whatever"
More pain = more pills	Consumes pills proportional to amount of pain	"I take more pills if my headache is more severe"
(no determination)	Other method or unclear	Other method or unclear

Table 3b. Summary of participants' genders, ages, attitudes towards self-medicating pain, identification abilities, and ingestion methods

Participant (Gender, Age)	Attitude(s)	Identification Ability	Ingestion Method
1 (W, 21)	Pill-positive	Medium	Follows directions
2 (W, 21)	Pill-positive	Medium	Follows directions
3 (W, 19)	Pill-positive	Medium	Takes two
4 (W, 20)	Pill-negative	Low	Takes two
5 (M, 21)	Pill-positive	High	Follows directions
6 (M, 20)	(no determination)	High	Follows directions
7 (W, 20)	Pill-negative	Low	Follows directions
8 (W, 20)	Pill-questioning	Medium	More pills = more pain
9 (W, 20)	Pill-positive to pill-negative	Medium	Takes two
10 (W, 21)	Pill-positive	Medium	Follows directions
11 (M, 21)	Pill-positive	Low	Follows directions
12 (W, 20)	Pill-positive to pill-negative	High	Follows directions
13 (W, 21)	Pill-positive to pill-negative	High	Follows directions
14 (M, 21)	(no determination)	Low	Follows directions
15 (M, 20)	Pill-positive and pill-questioning	High	Takes two
16 (M, 21)	(no determination)	Low	Follows directions
17 (M, 19)	Pill-questioning	Medium	Follows directions
18 (M, 20)	Pill-questioning	Low	More pain = more pills
19 (M, 21)	(no determination)	Medium	Follows directions
20 (W, 22)	Pill-negative	High	Follows directions
21 (W, 21)	Pill-positive	Medium	More pain = more pills
22 (M, 22)	Pill-positive	High	More pain = more pills
23 (W, 21)	(no determination)	High	Follows directions
24 (M, 22)	Pill-positive	High	More pain = more pills
25 (M, 22)	Pill-positive	Medium	Follows directions
26 (W, 19)	Pill-positive	Low	More pain = more pills
27 (M, 22)	Pill-positive	High	More pain = more pills

No trends exist between ingestion method and gender, attitude, or identification ability. This variation in and between participants affirms that OTCA use is a result of many variables and past experiences with pain and illness, and that behavior is not necessarily a product of attitudes.

Follows directions

Some participants always follow the directions on bottles or reported monitoring their own ingestion in some capacity. I spoke extensively with Sarah (P10) about this. Though she has a pill-positive attitude towards self-medicating pain, she is careful about what she ingests. She justifies her habit of always reading directions, saying, “Because I don’t know any better. I wouldn’t want to put myself at risk by not adhering to that [the directions].” Other participants echoed this sentiment, mentioning side effects such as internal bleeding, ulcers, and other unknown consequences as reasons for being careful about ingesting OTCAs. The uncertain nature of consequences seemed to be enough to motivate these participants to follow guidelines when taking pills. These statements and levels of knowledge differ from what L. Hughes et al. concluded in their study, where their participants were very unaware of the consequences of OTCAs, let alone deterred from use because of them (Hughes, Whittlesea, and Luscombe 2002).

One participant in particular always adheres to directions but expressed frustration with how they appear on packaging. Although Sam (P5) has a pill-positive attitude towards self-medication, he remains critical of how he should be taking OTCAs and recognizes barriers to doing so. While we were discussing his tendencies to follow directions on OTCA packaging, he said:

> *It’s hard to find the directions for how to use [OTCAs] – the dosing directions. […] Because when I’m looking for the dose, I’ll have to search for a while and it takes 10-30 seconds to find, which is, as being an impatient person and I think a lot of people are, it’s time consuming to find and therefore makes me not want to look at the instructions (Sam).*

Sam’s insightful comment sheds light on problems with OTCA marketing and information that might prevent people from using them correctly. Perhaps the concealed nature of some directions contributes to uncertainty surrounding OTCA use.

In their article, “Readability and comprehensibility of over-the-counter medication labels,” Trivedi et al. explore the readability of labels and estimate the existing level of comprehension required to understand and follow them. They used the Flesch-Kincaid method of determining comprehension level to assign scores to a variety of OTC medication labels, including some analgesics. They report, “Our results show that nonprescription medication labels, which bear important information about directions, risks, and warnings, are written in a language with poor readability and comprehension characteristics. On average, readability […] requires college undergraduate level of education to comprehend the material” (Trivedi, Trivedi, and Hannan 2014, 474). Trivedi’s findings confirm a serious problem. Though OTCAs go through approval processes before going to market, their labels and directions still present barriers to appropriate use. If people like Sam have to search for directions on labels before even being able to read and then comprehend them, opportunities for misuse might increase. Future studies should focus on comparing people’s comprehension or willingness to read directions with their knowledge about doses and side effects of OTCAs.

Takes two

Participants who didn’t necessarily read or follow directions but still take OTCAs in a controlled manner generally just “take two,” which they informed me was essentially common knowledge. As Ellen et al. concur, a common misconception among people consuming OTCAs is the habit of ingesting two pills of whatever is in the bottle regardless of recommended dosage (Ellen, Bone, and Stuart 1998). Four participants in my study reported this as their main ingestion method. I did not follow up during interviews about the frequency with which they take two to gain a better sense of their adherence to directions, but this finding is indicative of a controlled yet imprecise ingestion method. When I asked Inez (P4) how many OTCAs she consumes, she replied, “I usually take two. Doesn’t matters how many milligrams, just take two.” Although Inez indicates she’s aware that milligrams may be a component of deciding how to consume OTCAs, she still elects to just take two. It seems counterintuitive that a person like Inez with pill-negative attitudes towards self-medicating pain might disregard directions even when ingesting them. Attitudes towards medication do not necessarily indicate ingestion methods, but with increased use of OTCAs and more recognition of the harm they can cause when misused, future studies should focus on the relationship between the two to better determine sources of potential misuse.

More pain = more pills

Another one of these ingestion practices was a pattern of participants taking more pills in cases of more pain. Both men and women reported that their level of pain mainly determines how many OTCA pills they will consume regardless of the directed dose. Vukovic and Nichter mention this phenomena of “more is better” as an American attitude, saying, “Driven by the belief that more is better, many Americans have come to associate drugs of higher milligram doses with greater power and efficacy. Patients who do not know the purpose of the medicines they take will often be able to cite their strength in milligrams, assessing the severity of illness from the numbers” (Vuckovic and Nichter 1997, 1291). Vukovic and Nichter attribute this “more” phenomenon to the fact that people might not know the purpose of their medications in the first place. But for participants in my study, taking more OTCAs was usually a direct response to experiencing more pain.

I found some participants' accounts quite surprising. I anticipated that almost every participant I interviewed who had previously or currently uses OTCAs would have at least read the back of its packaging at some point in their life. This was not the case for pill-positive Maggie (P21), who shook her head "no" when I asked if she follows the directions when she uses OTCAs. She responded:

> *Maggie: I don't think I've ever read the back of the bottle.*
> *- So how do you know how much to take?*
> *Maggie: I mean it's one if it's a bad headache, two I would take for period cramps per wave of pain, and then I'd add another two. But it got to the point where I've probably taken at least ten in a day.*

Maggie consumes OTCAs in a manner that others who fear consequences might not. This interview left me wondering if there are any other common characteristics or experiences in participants or people who don't read OTCA directions and take them depending on levels of pain.

Kyle (P27) also does not stop to follow recommendations and ingests OTCA medication in amounts proportional to his pain. As I mentioned in Chapter Three, Kyle has a pill-positive attitude towards self-medication and uses them liberally. He is incredibly active and finds himself frequently injured from his involvement on an Emory club sports team and outdoor activities. When I learned that he is very familiar with OTCAs, I asked him if he follows directions for ingestion. He sat back with a half-smirk and explained:

> *I guess I have a gauge in my head of how much Advil I think I need based on what I'm feeling. I've never really ever taken more than like five at a time. [...] So I don't really follow the instructions, I don't really know how much Advil you're supposed to take in a period of time. Sometimes I take three Advil three times a day. That's pretty much the most I'd ever do, depending on if my headaches are terrible or something like that. I don't think I've ever even looked at instructions to check how much, I just don't think that they would give me anything that I could conceivably take so much of that it would kill me (Kyle).*

No other participant I spoke to matched Kyle's confidence throughout his interview. I am still perplexed by the fact that he is aware of brand names, generic names, and even spoke of side effects of OTCAs, but still throws caution to the wind and ingests them however he wants.

Carlos (P24), like Maggie and Kyle, consumes OTCAs regularly and without hesitation for his pain. While Maggie uses OTCAs to manage her painful period symptoms, Carlos uses them to manage pain from his chronic migraines. It was evident during our conversation that Carlos has thought extensively about his OTCA use. He was very knowledgeable about the various brands and generic names of OTCAs available, had tried various types, knew which ones worked best for his pain, and informed me that he uses more Advil (his OTCA of choice) than any other person he knows. He spoke with me in great detail about how he ingests OTCAs in an attempt to self-medicate his migraines:

> *-So during the height of your migraines in freshman and sophomore year [of college], when you had an average of three migraines per week, how much Advil were you taking per migraine?*
> *Carlos: I think it had gotten to the point where I had gotten used to the dosage.*
> *-The one on the bottle?*
> *Carlos: Yes. At first I was taking three each time, usually in a day. Usually that would get rid of it [the migraine]. And then when they started to get worse, I would take four. Well, it depends on if you take it right at the beginning of the migraine – that will knock it out. But if you wait or if you don't have it with you until it's a pretty bad migraine, then three Advil won't do anything. In that situation I would take four or five.*

Despite Carlos's awareness of side effects and the fact that he acknowledged that he was taking more Advil than recommended to the point where he identified in himself a higher tolerance for OTCA medication, he continued to ingest it constantly for months on end. I was surprised to hear that he didn't experience any side effects, and he felt lucky for that. At the height of his migraines a couple of years ago, he scheduled an appointment with a neurologist at Emory but was placed on a five-months long waitlist. When he finally did see a neurologist, the first few medications she recommended had no effect. They only recently discovered a medication that manages his migraines to a point where he is only taking Advil three or four times a month. This raises questions of how influential external sources of information are and what deters people from seeking other solutions to pain. If Carlos had seen a professional earlier, would he have consumed so much Advil? What would have happened if he actually experienced consequences?

Athletes' OTCA use

After conducting a few interviews, I began to ask participants more about their involvement in athletics at Emory. I noticed that participants who performed more physical activity through workouts or organized sports tended to have different strategies of preventing or treating pain. While most of my study participants work out regularly and experience physical pain, collegiate athletes' bodies undergo unusually intense and repetitive strain from practice and competition. Their experiences with pain are distinct from others'. But athletes' pain is not always the result of one physical event. It, too, is a product of social expectations and experiences (Good et al. 1992). Athletes operate in a unique social setting of camaraderie and competition. Factors such as team culture, characteristics and attitudes of coaches, and personal duty to perform create social settings that affect the extent to which athletes may seek help for pain (Nixon 1994). Prior research has found that athletes feel pressure to play while in pain from both teammates and coaches (Nixon 1994, 352). This pressure shapes athletes' social roles and definitions of illness.

After making this initial observation about participant athletes' experiences with pain, I decided to pursue this topic further in this project to see if there were differences in the ways collegiate athlete participants used OTCAs versus a non-athlete participant. If participants were or are current members of organized sports teams at Emory on a club or varsity level, I considered them collegiate athletes and proceeded to ask them more specifically about how they use OTCA drugs. I spoke to five women and three men who are (or recently were) collegiate athletes. My findings relevant to them in this thesis are summarized in Table 4:

Table 4. Summary of collegiate athletes' genders, ages, attitudes towards self-medicating pain, identification abilities, and ingestion methods

Participant (Gender, Age)	Attitude(s)	Identification Ability	Ingestion Method
8 (W, 20)	Pill-questioning	Medium	More pills = more pain
10 (W, 21)	Pill-positive	Medium	Follows directions
12 (W, 20)	Pill-positive to pill-negative	High	Follows directions
18 (M, 20)	Pill-questioning	Low	More pain = more pills
20 (W, 22)	Pill-negative	High	Follows directions
24 (M, 22)	Pill-positive	High	More pain = more pills
26 (W, 19)	Pill-positive	Low	More pain = more pills
27 (M, 22)	Pill-positive	High	More pain = more pills

Despite the differences between these athletes' attitudes, identification abilities, and ingestion methods, each athlete revealed to me that both they and their teammates have taken or currently take OTCAs to relieve pain with hopes of allowing them to perform better in practice and in games. For athletes at Emory, OTCAs serve a dual purpose: to relieve pain and improve performance.

Athletes' OTCA use is not well-researched. Christopher Harle et al. conducted a systematic literature review in 2018 of existing studies regarding athletes' use of analgesic medication for pain management to gauge the amount of existing information surrounding this topic. After reviewing 70 eligible articles, they concluded that "Existing empirical research does not provide a sufficient body of evidence to guide athletes and healthcare professionals in making analgesic medication treatment decisions" (Harle et al. 2018, 2). The increasing prevalence of OTCAs as legitimate methods of pain management in athletics necessitates further exploration on this topic not only in an empirical manner, but also in a qualitative manner that will contribute to a greater understanding of athlete's attitudes towards self-medicating pain, how they learn about OTCAs, and how they consume them.

One of the studies Harle et al. include in their literature analysis is Douglas Wolf et al.'s "National Collegiate Athletic Association Division I Athletes' Use of Nonprescription Medication." Researchers recruited football players to complete a survey about what types of OTCAs they consume (in their study, 'consume' equates to 'ingest'), the motivation for consuming them (football-related or not), the dosage/frequency, and other demographic factors. While the majority of football players in this study reported not misusing OTCAs for football-related pain, researchers did find that "Most athletes (89%) used more than the recommended dose because they believed that football players required more because they are larger than the average population" (Wolf et al. 2011, 27). Participants Kyle and Sasha in my project echoed this same sentiment – bigger bodies can handle more medication. Wolf et al. also found that a main reason that football players misused OTCAs in their study was because they didn't want to miss a practice or game due to current pain or expected pain (28). In my study, Sarah, Gabriel, Carlos, Ellie, and Kyle all reported this as a reason they consume OTCAs when practicing and/or competing. There seems to be an unspoken expectation for athletes to perform despite pain and injury for the good of the team.

Gabriel (P18) paints a picture of pain and OTCA use on a varsity sports team at Emory. At the end of our conversation about his and his teammates' OTCA use, he said:

> *Gabriel: I don't know, I just see some guys will take them in copious amounts of five or six at a time.*
>
> *-Advil?*
>
> *Gabriel: Ibuprofen, yeah. It definitely helps with pain, but I don't know how much it generally helps. And the perception is that there isn't going to be a side effect to that. And honestly I don't know. It doesn't seem like there is, but I think it could be useful that if there was a side effect or if there was a danger in doing that, then education would be helpful. Because at this point it's just like 'there is no side effect.'*
>
> *-Do your coaches ever say anything about that?*
>
> *Gabriel: Nah. I don't think they know. I mean they were all athletes too so I'm sure they've been through the exact same process. It's like don't talk about it, right, like they're not like 'make sure you're following the directions on the bottle.' It's one of those where you know what you have to do to recover and it's like almost like a null concept. Like it doesn't even play into the equation. Like you're going to perform. So whatever you have to do personally, like do it. You're just expected to, it's not even worth talking about.*

Gabriel and his teammates live with the expectation that they will perform at all costs. In times of pain-induced illness, the sick role they assume is one in which they are expected to return not to a "normal" state, but to a state of maximum performance. This reality is not healthy and could later cause dire illness as a result of side effects and prolonged use (Abbott and Fraser 1998). The lack of knowledge of these side effects among Gabriel and his teammates deserves more concern. Their leaders aren't – or don't want to be – aware of these OTCA practices. They have become so engrained, so normalized, into athletic culture and perpetuated by group expectations that athletes like Gabriel aren't aware and don't care about the consequences. My findings indicate an obligation for greater investigation into not only athletes' OTCA use at Emory, but also the culture of sports teams and athletes' perceptions of pain and illness in this setting.

Conclusion

Though participants learned about their OTCAs from the same types of sources – parents – their knowledge of brand name and generic medication options and ingestion methods vary. This indicates that what participants learn from parents as dependent children influences how they consume OTCAs in later life. My interview data is not detailed enough to allow me to assign participants' parents attitudes towards self-medicating pain using OTCAs, but comparing parents' and participants' attitudes in future work could contribute to understanding the significance of information learned from these relationships. Participants' varied knowledge and ingestion methods also calls into question the effectiveness of some sources of information over others. Future studies could inquire about undergraduate students' main sources of information about OTCAs and whether or not they change over time. There is also opportunity for further research into whether parents educate different genders about OTCAs differently. Men and women experience different societal expectations of pain tolerance – women have less and men have more – and those expectations begin somewhere (Isacson and Bingefors 2002). Asking future participants about their parents' beliefs and teaching methods might reveal a difference in the ways women and men learn about OTCAs and how this could further impact their OTCA consumption. Despite the variation in attitudes, levels of identification ability, and ingestion methods, a common subject persists – trust in OTCA providers.

Participants in my study place trust in OTCA providers and, in doing so, fulfill the role of the patient in Lévi-Strauss's shamanistic complex. In his traditional complex, patients trust shamans and doctors to be healers. But when a person heals illness with over-the-counter medications, they become consumers who trust in other sources for their power to heal. As consumers, participants in my study portray different levels of belief and trust in the pharmaceutical industry's power to provide effective analgesic medications. This trust, or lack of, manifests in their preferences for brands, knowledge of OTCAs on the market, and varied OTCA ingestion methods. In this way, pharmaceutical companies become healers. When parents teach children about and provide them with OTCAs, they pass on their own beliefs and trust in the pharmaceutical industry as consumers. But, when that child grows older and becomes an agent for his or her own health, they take on the role of a consumer. In the next chapter, I will show how the normalization of OTCAs in social networks and this environment perpetuate knowledge and habits about OTCAs and relate to the third part of Lévi-Strauss's shamanistic complex – group expectations for patients and healers.

CHAPTER FIVE

Is Sharing Caring? Participants' Perceptions of their Peers' OTCA Use

I'll be in the library and I'll message my sorority group chat like 'does anybody have Advil?' and three people are like 'I have it on me.' I know they have it on them for headaches, migraines, or period cramps (Maggie).

At Emory, people like Maggie commonly share OTCAs in the library, in dorms, in classes, and around campus. When someone shares medication with another, they recognize an illness and care for it; relationships and social networks result (van der Geest, Whyte, and Hardon 1996). Van der Geest et al. provide a basis for thinking about how sharing drugs in personal relationships contributes to beliefs and practices in larger social networks. A person giving a friend ibuprofen, for example, is an expression of care and concern (van der Geest, Whyte, and Hardon 1996, 168). The giving friend recognizes the other's pain, illness, and desire to return to normal. The receiving person, however, can use it how the giving person intends for it to be used or not. Sharing OTCAs in a familiar environment is an act that recognizes pain, illness, and a need to get well. This concept makes me wonder, however, how much trust people place in people with whom they share OTCAs. If somebody gives a friend ibuprofen, do they assume that their friend will use it as they, themselves, would? If people were more familiar with dangers of using OTCAs, or thought that recipients would use them for nefarious reasons, would they be so willing to share? We trust that OTCAs work and trust in the people and companies they provide them for us. But do we trust each other to use them as they're intended to be used?

In "Use and abuse of over-the-counter analgesic agents," Frances Abbott and Mary Fraser suggest that it is not uncommon for people to consume OTCAs for purposes other than relieving pain. In their article, they cite a study in which patients in a hospital "reported using OTCAs to 'calm me down,' or 'to get my strength back'" (Abbott and Fraser 1998, 24). Some participants in that study reported their OTCA use as an addiction, but I did not find this to be the case for any of the participants in my project. Rather, some of my participants reported a fear of addiction to analgesic substances as a reason *not* to consume OTCAs. Although my findings don't support those of this study, the Emory community is not necessarily void of using OTCAs for ulterior reasons than pain management. My snowball sampling method of recruiting participants means that my data is from people in my social network, which is not representative of all Emory undergraduates. The willingness with which people share OTCAs at Emory calls into question people's trust in their peers' OTCA use. Most wouldn't think twice about giving a friend a pain reliever, but these decisions actually supply broader views about perpetuating trust in OTCAs and their sources.

People's attitudes, knowledge, and consumption of OTCAs do not exist in a vacuum. To share OTCAs is also to share those attributes. The relationships and networks that result from sharing OTCAs perpetuate the group beliefs in OTCAs that keep them on the market, in stores, and in our lives. Lévi-Strauss adds another element to this phenomenon by suggesting that these group beliefs in turn actually impact the relationship between an ill person and a healer – or consumers' trust in pharmaceutical companies (Lévi-Strauss 1963, 198-200). Recall that this relationship stems from the healer's ability to return an ill person to a normal state. In the context of my study, this would be an OTCA providing relief to somebody ill from pain and allowing him or her to return from a sick role to a normal state (Parsons 1958). Ergo, if the group trusts that a medicine heals, then ill people who is part of the group may gain trust in it as well. This is an important relationship to consider when questioning why people place trust in OTCA providers.

But the 'group' aspects of Lévi-Strauss's model cannot apply to group beliefs in OTCAs. Lévi-Strauss's existing model is more appropriate for explaining why people trust doctors and shamans in performing unknown and specialized medical procedures. For example, groups respect doctors as healers because they can perform unknown and specialized procedures to cure an ill person, such as an intricate surgery. Because of this reputation, others may turn to this doctor for the same surgery. The group the doctor’s role as a healer because of the evidence he portrays, and those beliefs transmit to individuals’ trust in doctors from an impersonal experience. The model for affirming belief in OTCA providers as healers, however, is not the same. Not everybody can perform intricate surgery, but nearly everybody can self-medicate pain with OTCAs. Group beliefs in OTCAs do not originate from recognizing the power OTCAs bring to others, as they would in beliefs about a doctor who performs surgery, but rather from individuals’ actual experiences with them. Individual beliefs then contribute to group beliefs through sharing personal information and medication in relationships and social networks (van der Geest, Whyte, and Hardon 1996). The root of trust in OTCAs is a personal one. In this project, I aimed to investigate how this concept manifests itself in participants’ experiences with OTCAs and the ways they think about others’ OTCA use. Do participants think others use OTCAs for the same reasons they do? Do all participants think that their peers use OTCAs the same way regardless of their own methods?

To better evaluate how participants perceive OTCA use at Emory, I asked them (1) why they think their peers might use OTCAs and (2) if they think others follow the directions when they use them. Rather than specifically asking participants about others’ attitudes, knowledge, and ingestion methods, I employed the term ‘use’ when asking participants questions about their peers to elicit natural responses and provide a platform for broader stories and examples. It is also less awkward to talk about ‘use’ than ‘ingestion.’ My reasons for asking about these two distinct topics are twofold. First, I found that participants could speak about them in depth and easily remember examples and stories. This created robust conversations from which I could determine themes and trends. Second, they provide information about “why” and “how” OTCA use occurs, which I gathered in more detail about individual participants but asked them to speculate about others in this part of the interviews. I will first discuss ‘why’ participants think their peers use OTCAs and will then discuss ‘how’ they thought their peers followed directions on packaging.

Why do Emory students use OTCAs?

Recall that all participants in my study reported using OTCAs only to self-medicate acute and, for one man, chronic pain and did not mention another motivation for using them. They also all assumed that self-medicating pain was the only reason other students would use OTCAs. Nobody indicated that they thought men and women might use them differently, nor was there a difference in how men and women participants spoke about why other students might use them. The only types of pain participants associated with why their peers might use OTCAs were examples of acute pain such as headaches, muscle cramps, or hangovers. This is a compelling finding. It illustrates that participants are aware of the appropriate reasons for using OTCAs trust that their peers use them accordingly. Becca’s (P13) comments encapsulate participants’ thoughts on this topic:

> *I think people will use them for everything from injuries to even minor headaches. Headaches are one of those things where like, if your knee hurts a little bit you can go with that, but especially in such a high-strung environment [Emory], even having a minor headache can sometimes be really inconvenient (Becca).*

Apparently, participants recognize the purpose of OTCAs as a pain-relieving one rather than the idea that people might use them simply to ‘feel good’ (Abbott and Fraser 1998). Becca’s quote also reflects the culture of productivity among Emory students that shapes definitions of illness (Vuckovic and Nichter 1997). This shared experience among Emory students could shape their sharing practices to be different from people without this experience.

Michael (P15) explained to me how he judges OTCA use in his peers and the way he shares OTCAs. His thoughts represent the ordinary way participants spoke about OTCA use at Emory. He said, "I feel like everyone gets headaches and wants something to do about it. That's what I would assume is the biggest thing. If I had it in my house and I had people over, I would offer it to them and they wouldn't think it's weird." This was the group attitude from participants about why their peers would use OTCAs and how they are distributed on campus. In this case, individual beliefs in why Emory students use OTCAs correlate with group beliefs. These participants trust that their peers intend to use OTCAs for pain relief and not for ulterior reasons. While the group trusted this aspect of OTCA use, participants disagreed on whether Emory students follow directions when using OTCAs or not.

Participants' perceptions of Emory students' adherence to OTCA directions

Even though participants thought that other Emory students use OTCAs to self-medicate pain – the same types of acute pain –they did not align peers' OTCA consumption methods with their own. Instead, they use external information to make assumptions about how their peers consume OTCAs. In Chapter Four, I discussed the various ways participants learned about and consume OTCAs. One of these elements was participants' ingestion methods for OTCAs. There are clear differences in participants' ingestion methods and the ways they assume other people ingest them. When I asked participants if they thought other Emory students follow the directions when taking OTCAs, most paused to think for longer than usual before answering. Three general answers resulted from this question: (1) yes, others generally follow directions; (2) no, others generally do not follow directions; and (3) some participants told me that it depends on other factors. I *did not* use the same criteria for determining participants' perceptions of Emory students' adherence to directions on OTCA packaging as I did for participants' own ingestion methods because they are distinct themes. However, both themes involve ingesting OTCAs. One is just a personal experience and one is inferred about others. In Table 5a are the subtheme analysis criteria I used for determining participants' perceptions of their peers' adherence to OTCA directions:

Table 5a. Analysis criteria for perceptions of Emory students' adherence to directions on OTCA packaging

Perception of Students' Adherence to Directions	**Description**	**Example**
Follow directions	Participants thinks that Emory students generally follow OTCA ingestion directions on packaging	"Yes, I think so" (James, P17)
Do not follow directions	Participant thinks that Emory students generally do not follow OTCA ingestion directions on packaging	"Probably not" (Ava, P20)
It depends	Participant thinks that Emory students follow OTCA ingestion directions on packaging sometimes or depending on the circumstance	"I feel like occasionally people will take liberties" (Isaiah, P19)

Table 5b. Summary of participants' genders, ages, attitudes, identification abilities, ingestion methods, and perceptions of students' adherence to directions

Participant (Gender, Age)	Attitude(s)	Identification Ability	Ingestion Method	Perception of Students' Adherence to Directions
1 (W, 21)	Pill-positive	Medium	Follows directions	N/A*
2 (W, 21)	Pill-positive	Medium	Follows directions	N/A*
3 (W, 19)	Pill-positive	Medium	Takes two	N/A*
4 (W, 20)	Pill-negative	Low	Takes two	N/A*
5 (M, 21)	Pill-positive	High	Follows directions	N/A*
6 (M, 20)	(no determination)	High	Follows directions	N/A*
7 (W, 20)	Pill-negative	Low	Follows directions	Follow directions
8 (W, 20)	Pill-questioning	Medium	More pills = more pain	It depends
9 (W, 20)	Pill-positive to pill-negative	Medium	Takes two	Follow directions
10 (W, 21)	Pill-positive	Medium	Follows directions	It depends
11 (M, 21)	Pill-positive	Low	Follows directions	Follow directions
12 (W, 20)	Pill-positive to pill-negative	High	Follows directions	Follow directions
13 (W, 21)	Pill-positive to pill-negative	High	Follows directions	It depends
14 (M, 21)	(no determination)	Low	Follows directions	It depends
15 (M, 20)	Pill-positive and pill-questioning	High	Takes two	Follow directions
16 (M, 21)	(no determination)	Low	Follows directions	Do not follow directions
17 (M, 19)	Pill-questioning	Medium	Follows directions	Follow directions
18 (M, 20)	Pill-questioning	Low	More pain = more pills	Do not follow directions
19 (M, 21)	(no determination)	Medium	Follows directions	It depends
20 (W, 22)	Pill-negative	High	Follows directions	Do not follow directions
21 (W, 21)	Pill-positive	Medium	More pain = more pills	It depends
22 (M, 22)	Pill-positive	High	More pain = more pills	Follow directions
23 (W, 21)	(no determination)	High	Follows directions	Do not follow directions
24 (M, 22)	Pill-positive	High	More pain = more pills	Follow directions
25 (M, 22)	Pill-positive	Medium	Follows directions	It depends
26 (W, 19)	Pill-positive	Low	More pain = more pills	Follow directions
27 (M, 22)	Pill-positive	High	More pain = more pills	Follow directions

*I began to ask participants about this after the sixth interview. I discovered the importance of this topic after speaking with the first few participants and getting a better idea of the landscape and themes involved in OTCA use in Emory undergraduates based on their examples and stories.

Evident from data in Table 5b, there is no trend between participants' perceptions of students' adherence to directions on OTCA packaging and any other characteristic in this participant sample. If participants don't generally align others' OTCA consumption behavior with their own, there must be external factors influencing their perceptions. The level of trust that participants had for the reasons their peers use OTCAs is not the same for the trust they have in their adherence to OTCA directions.

Others follow directions

I return to Kyle (P27) for his comments about his peers' OTCA use. Recall that Kyle endures injuries from sports, learned about OTCAs from his parents, and ingests them in amounts proportional to his pain. Contrary to his own habits, he thinks that his peers generally follow the directions, venturing, "Probably. People here are pretty cerebral. I think people probably would pay attention about that kind of stuff. Maybe they're a little anxious." Kyle interprets characteristics about his peers to inform his thoughts about whether or not Emory students follow the directions, but he does not consider himself a member of that group. He is not calling himself unintelligent, but he repeatedly reminded me that he has no fear of the consequences of OTCAs and isn't anxious about using them. He does, however, raise an important point. He equates his peers' adherence to directions with their intelligence. Other participants who think Emory students follow directions volunteered similar statements – they thought Emory students were smart enough to at least be aware of what they were consuming.

Others do not follow directions

Ava (P20) does not share Kyle's confidence in their peers' consumption habits. She attributes reasons students don't follow them to the readability of instructions, suggesting, "I took a health communications class and we talked all about labels and over-the-counter medications and prescription medications, and no one reads them." Ava's knowledge from class directly influences how she thinks her peers use OTCAs. Even though her primary source of information about OTCAs is her parents, additional information further informs her ideas about others' actions despite their education level. Ava spoke with the least confidence in her classmates out of all participants' motivation to read instructions and inability to do so. The readability of instructions on OTCA packaging is an established problem, one that researchers hypothesize requires a college-level education to comprehend them fully (Trivedi, Trivedi, and Hannan 2014, 474). Participants in my study confirmed this difficulty though they are current undergraduates at a reputable university. Had Ava not taken this health communications class, however, she might have a different perception of her peers' habits and this issue. The sources of information people use to guide their OTCA use could be of interest to researchers seeking to evaluate the best ways to package them as effectively as possible.

It depends

Participants without the previous two perceptions expressed that whether their peers follow OTCA directions depends on their needs. I asked Maggie if she thinks Emory students follow directions; her remarks capture this 'it depends' view:

> *My roommate does [follow directions]. She's also a big rule-follower in general. It's just who she is as a person. But me and my other roommate who suffer a little bit more, not really (Maggie).*

Maggie associates her roommate's personality traits with her OTCA habits. But for others, OTCA consumption depends on definitions of illness. Maggie and her other roommate suffer more, which are individual determinations about pain experiences and illness, and therefore don't follow the directions on OTCA packaging. Maggie's thoughts about her peers' OTCA use reflect her own OTCA ingestion method of taking more pills for more pain, but she also uses other information to make determinations about people’s use. Maggie affirms that OTCA use is not formulaic. It varies with people’s needs and experiences.

Conclusion

Participants perceive others’ OTCA use with various applications of trust: trust that others use OTCAs for legitimate reasons, trust that others follow directions (or not), and trust that people who use them won’t be considered different or ‘other’ from the rest of the group. All participants in this study trust that their peers use OTCAs for pain management and to return to a ‘normal’ state. There was no indication that they thought people would use them for an ulterior purpose of psychological pleasure or for simply no reason at all. Participants and their perceptions of others aligned in this sense. On the other hand, my findings indicate that participants do not have the same perceptions about how their peers consume OTCAs. Participants’ own ingestion methods and practices do not always correlate to what they think their peers do. They instead infer this information from other factors, like the readability of labels, the productivity culture at Emory, and traits like athletic involvement and pain tolerance.

My data shows that participants’ experiences and perceptions comprise larger group beliefs. The extent to which these individual and group beliefs align, however, remains unknown. Sharing OTCAs at Emory perpetuates beliefs that OTCAs are generally acceptable and not ‘weird’ to use, like other drugs might be. This preserves belief in OTCAs’ abilities to return people from ill to normal states and parallels the trust groups place in sources of healing in Lévi-Strauss’s model. But the way this belief evolves is different. Group trust in OTCAs stems from individuals’ experiences of healing rather than belief in healers’ actions on others. If individuals’ own belief in OTCAs does influence others’ use and group beliefs, this could help illuminate areas of group trust in OTCA providers today. Future research should focus on the relationships between individuals’ experiences with OTCAs, the extent to which these experiences influence their perceptions of others, and the scope of social networks and relationships that normalize OTCAs at Emory.

CHAPTER SIX

Discussion

In the United States, companies race to fill consumer needs with OTCAs, fight for product placement in stores, and publicize their brands as common household names. OTCAs are everywhere, but they helpful for some and harmful for others. On one hand, they are an inexpensive option for pain management that people rely on to treat illness and gain back their regular abilities. This access is important (Juhl 1998). On the other hand, they pose harmful consequences to users who follow the directions and those who don't (Abbott and Fraser 1998). The FDA works to reduce these risks so that when somebody does suffer harm from these medications, consumers often receive the blame. Consider my friend, an undergraduate at Emory, whose urgent care doctors were confused with her lack of knowledge about ibuprofen. The topics and findings of this thesis relieve consumers of some blame and submit that while OTCAs are normal in our everyday lives, they shouldn't be treated as such.

OTCAs are everywhere on Emory's campus. Some students consume them freely in the hopes of relieving pain from small injuries or ailments. Others avoid them at nearly all costs. Regardless of how they're used, OTCAs allow people to assume responsibility and agency for their own well-being. Experiencing pain, identifying illness, and evaluating treatment options for oneself transforms people from being a patient into being one's own healer. To understand OTCA use is to understand that pain has many remedies. Experiences inform people's treatment preferences and attitudes towards using OTCAs to self-medicate pain. These attitudes stay the same, change, and sometimes never even develop. Nonetheless, they are a crucial part of OTCA use that should be further investigated to determine if there is a relationship between them and someone's OTCA consumption, knowledge, or both.

Participants in this study all learned about OTCAs from their parents, but not all have the same knowledge about the types of brand name and generic OTCAs available to them. There are also distinct ways in which participants ingest OTCAs that stem from personal notions of how much medication their bodies need to feel better or habits they learned from an external source. Yet, participants choose to consume OTCAs because they trust the providers of OTCAs – parents and pharmaceutical companies. Consumer roles shift as people grow older. Children learn habits from their parents and then leave to make their own decisions about OTCAs. The difference in ingestion methods among participants in this study calls into question the effect of certain sources of information over others. For example, does parental advice carry more weight than the directions on packaging? Do people change the ways they consume OTCAs over time based on exposure to new information? When students leave their parents and come to Emory, they enter a new environment with a culture of productivity and performance. Future studies should assess the significance of certain sources of OTCA information over others to determine if there are better ways to educate people about the risks and methods of using OTCAs. Doing so will result in more informed consumers and awareness of environmental effects on a person's tendency to use OTCAs.

But when Emory students arrive at college, they are not alone in their new environment. In fact, they share their experience with hundreds of new peers. Using OTCAs is a social experience through which students share attitudes, knowledge, and acceptance. The perpetuation of OTCA use on Emory's campus indicates that students normalize OTCAs as a solution to pain. This normalization is a result of individual experiences and trust in OTCA providers. Regardless of participants' attitudes towards using OTCAs for self-medicating pain at the time of this study, they had all used them at some point in their life. They share this background with others when they accept somebody's OTCA use as normal or provide them with medication itself. Normalizing OTCAs in a group setting preserves their demand in markets and creates opportunities for harm. OTCAs are widespread and easily accessible. A person could use them every day if they so desired. Given their popularity and the trust that consumers, and therefore groups, place in them, I hope that research to come focuses on the long-term effects of OTCAs and shifts blame away from uninformed, or misinformed, consumers and onto larger institutional drives for pharmaceutical profit and the culture of productivity and performance that students and athletes experience.

I call upon the work of Claude Lévi-Strauss one last time in summarizing the many differences and parallels I have shown between his traditional shamanistic complex and my argument for how a new, modified complex for self-medication supports Emory undergraduates' experiences with OTCAs. Figures 1 and 2 portray the variation between these complexes:

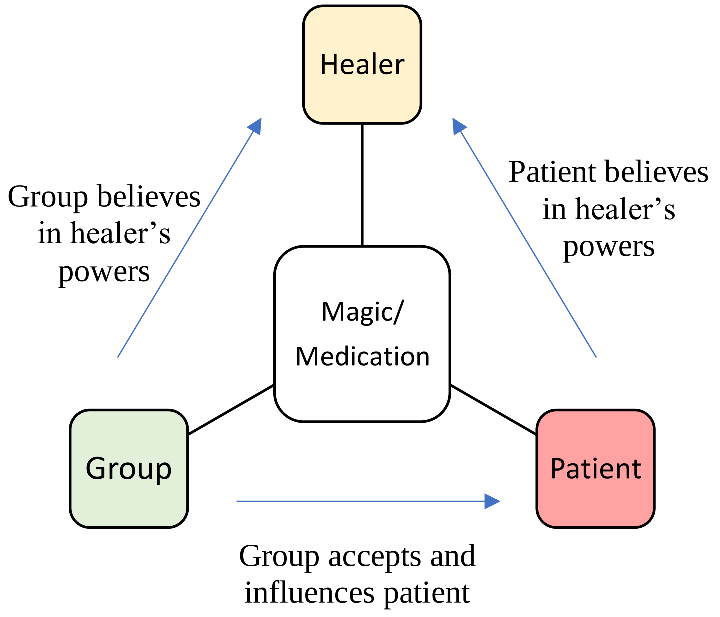


Figure 1. Lévi-Strauss's traditional shamanistic complex

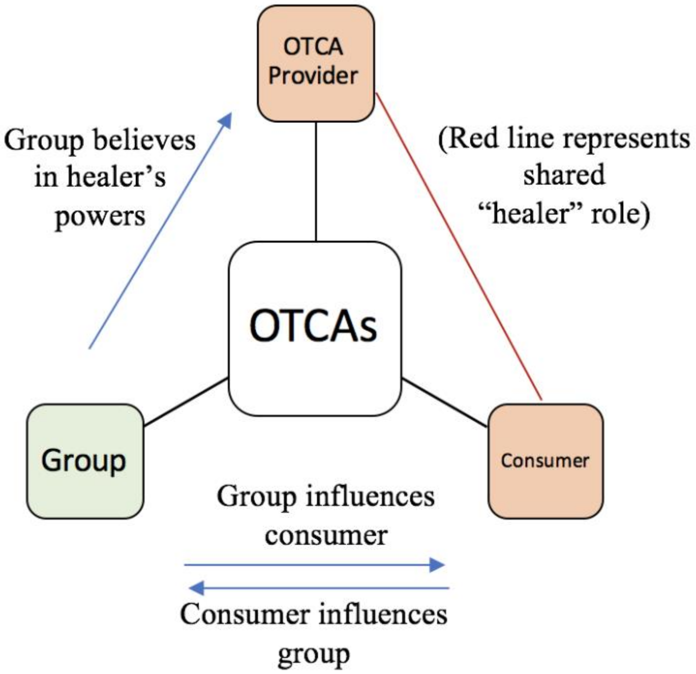


Figure 2. Modified shamanistic complex

In the modified shamanistic complex, consumers embody the role of a healer because they identify their own pain, illness, and make determinations about how to treat it. This requires special knowledge, ability, and trust in one's decisions about illness and treatment. OTCA providers are parents and pharmaceutical companies who give consumers OTCAs as a doctor would give a patient medication. OTCA providers furnish effective medication and earn consumers' trust if it works. Thus, the dual role of a healer to identify illness and provide successful treatment is filled by both consumers and OTCA providers. Consumers' trust in OTCA providers to produce effective medication also allows them to fill the role of a patient who trusts a healer's techniques. The group's role in the traditional and modified complex is similar in the ways it affirms the role of healers in society and influences patients and consumers, but the way group beliefs evolve in each complex are different. In the traditional shamanistic complex, group beliefs result from witnessing a healing miracle, trusting the healer, and accepting the healed patient. These group beliefs influence individual beliefs about the healer, but the group is separated from the experience of healing itself. In the modified shamanistic complex, group beliefs in healers are comprised of individuals' beliefs about OTCAs as a source of healing. Individuals are the ones who experience the healing OTCAs provide and contribute to group beliefs through their social networks. This modified shamanistic complex provides a way of thinking about how we interact with OTCAs, how OTCAs interact with us, and how they define our perceptions of illness and healthcare. When we use OTCAs, we are our own patients and healers.

Appendix A. Interview Questions Guide

- Tell me about yourself, including any hobbies or activities.
- How would you describe your state of health?
    - Prompt: What makes you think this? What criteria do you use to judge your health?
- How often do you experience pain?
    - Prompt: Describe it for me. An example would be great.
    - Prompt: What is the cause of your pain?
    - Prompt: How do you decide if your pain is mild/moderate/severe?
- What do you do when you experience pain?
- Was there ever a time when you relied on yourself or others (not a healthcare professional) to manage your pain?
    - Prompt: If so, why?
    - Prompt: How did you make that decision?
- Are you familiar with over-the-counter analgesics (pain relief medications)?
    - Prompt: If so, tell me a little bit about how you learned about them.
    - Prompt: How would you describe these to someone else who may not be familiar with them?
- Could you describe why you use over-the-counter analgesics?
- When you use OTC analgesics, how do you use them?
    - Prompt: Describe the frequency, dosage used.
    - Prompt: Do you read or follow the directions?
- Do you have a go-to type of OTC analgesic?
    - Prompt: Why do you use this over others?
- Could you speak a little bit about how you think Emory students use these medications?
    - Prompt: Popular/common reasons for use
    - Prompt: Do you think Emory students use them correctly?
    - Prompt: Do you think Emory students know a lot about them?
- Do you have any other comments you'd like to add or any questions you'd like to ask?

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