How the Creation of Vitamins Have Normalized Self-Medicating and Redefined How Americans Perceive Health

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

As of 2018, nearly 60 percent of Americans used at least one type of vitamin supplement on a regular basis (Mishra & Potischman, 2021). In one decade, vitamin use among American adults has jumped nearly 10 percent; this can average to about a 1 percent increase in vitamin use every year for the past ten years (Mishra & Potischman, 2021). This increase may seem negligible, but, with the current population of the United States falling over 331 million people, this data suggests vitamin companies are gaining almost 2 million new users every year. While it may seem that vitamins are an essential part of the modern American diet, vitamin use has historically never been as high as it is right now.

Vitamins have not always been popular supplements that they are today. The first chemical synthesis and discovery of the modern day vitamin was not until the early 20th century, and, like many scientific discoveries, was an accident. There are 13 essential vitamins, yet it was not until the mid 1700s that the first essential vitamin was discovered. The first essential vitamin was found because of a growing need to cure a popular disease at the time: scurvy. Scurvy, also known as 'sailor's disease,' was a common condition faced by men working on boats in the 16th through 19th century. Symptoms like abnormal swelling, bruise-prone limbs, and bleeding in the mouth resulted in nearly 2 million scurvy cases ending in fatality (Amogne et al., 2021). It was clear that the ramifications of the disease were large, which led to the first recorded study on scurvy was conducted in 1747 by a man named James Lind of the British Navy (Léger, 2008). He discovered that changing the foods the sailors ate affected who got scurvy. Oranges, lemons, and limes were found to be the most successful at preventing scurvy. Yet, the compound within these citrus fruits that was healing scurvy patients was unknown until 1928. In this year, a man named Albert Szent-Gyorgyi realized there was something in fruits that our bodies did not

naturally produce (Léger, 2008). In his laboratory, Szent-Gyorgyi was the first to chemically isolate the treatment for scurvy. Szent-Gyorgyi realized all these citrus fruits used as treatments for scurvy had the same chemical structures in them. Today, this vitamin is one of the most well-known and popular vitamins on the market; the modern name for this discovery is Vitamin C.

As the 1950s encroached, all 13 essential vitamins had been discovered: vitamins A, C, D, E, K, thiamine, riboflavin, niacin, pantothenic acid, biotin, B6, B12, and folate (Office of Dietary Supplements, n.d.). Being able to study and manipulate the chemical structures of vitamins led to the discovery that not all people maintain, consume, or have the same concentration of the 13 essential vitamins. Scientists learned that people with preexisting health conditions or illnesses were often deficient in one or more types of vitamin. When the first vitamins gained the ability to be commercially produced, they had very specific medical applications. Vitamins were recognized as plausible cures for disease previously of untraceable origin, which made use amongst the general public relatively nonexistent (Apple & Apple, 1996). However, this would change drastically as the 20th century progressed.

Direct dietary methods were the first means of intervention to increase vitamin content in sick patients. A main test subject for nutritional studies were World War II soldiers (Mozaffarian et al., 2018). These men had little access to food in general, let alone maintain a caloric and nutritious diet. Deficiency in fat, sugar, and carbohydrates from the foods the soldiers ate helped the scientific field put a new value on food. Vitamins started to be sold first to address deficiencies in places where access to food was scarce. Developing countries and areas in need of humanitarian aid were the first populations to use vitamins. But, as the 1970s encroached, many scientists began to infer that our diets were not enough to make us healthy. A surge of ready-to-buy vitamins were throw into the American market. The shiny new packaging and listed

health benefits were met with a population that welcomed them. Since then, the vitamin market has only been growing.

Today, the National Institute of Health values the dietary supplement market at nearly 56 billion dollars (Office of Dietary Supplements, n.d.). In the 21st century, a majority of Americans are using some type of vitamin and doing so regularly. Because vitamin use in American is so high, vitamin companies have consequently been able to significantly increase their profits. With more money feeding into vitamin companies, they are able to control a larger portions of the healthcare market, such as health advertising and direct-to-consumer selling of products. With a large economic capital, many vitamin companies can rebrand, create, and advertise whatever supplements as U.S. governmental control or restriction on these products is minimal. Because of this, many argue that vitamin use in America has shifted from a cure-based ideology to a dietary commodity only available to those who have the economic means to purchase them.

In the United States, a capitalist society contributes to a system where healthcare is either need-based or must be purchased through third-party insurance companies. Treatment is expensive, wait times are long, and medications can quickly add up in the absence of health insurance. This has made a lot of Americans unwilling or unable to consult with physicians before taking supplements, and has encouraged many Americans to take control of their own health by making judgements and guesses on what type of vitamins they think their body is deficient in. Companies solely devoted to selling supplements have created a culture of self-medicating. This paper analyzes how the creation of vitamins has altered consumption and overall perception of health and how much control we have over it. I sought to answer how much and how often American consume vitamins from their creation to present day, examine FDA

policy on the advertising of vitamins and to which demographics, and seek to find how often and accurately medical providers are actually recommending vitamins .

Methods

The medical, scientific, and pharmaceutical fields all play a role in changing the public's perception of health. In the U.S., these fields are all strictly regulated by government agencies, such as the Food and Drug Administration (FDA), Centers for Disease Control and Prevention (CDC), National Institute of Health (NIH), and Federal Trade Commission (FTC). I conducted policy reviews on existing laws for vitamins set by each of these agencies. I was able to collect population surveys conducted on the American public and vitamin usage statistics from the CDC specifically. Laws on vitamins, distributions practice, and direct-to-consumer advertising were sourced from the FDA, NIH and FTC public databases.

To supplement this, I examined media studies journals to review what platforms vitamin ads are being seen on and to which demographics in particular. These sources helped me define the patient profile of the average vitamin user in the United States. Physiological studies and interviews on vitamin users helped determine consumer decisions and methodology when opting to purchase vitamins. I then studied interview-style surveys on vitamin prescription habits of medical providers to analyze the role of professional on promoting and prescribing vitamins to their patients. The viewpoint from field professionals coupled with viewpoints from patients helped me discover discrepancies in how well-versed people were in nutritional education and what main factors play into seeking out vitamin the first place.

Lastly, I sought to see if these vitamins are actually making the changes Americans presume they are. Using published scientific research studies to decipher if vitamin supplements actually decrease the risk of cancers or chronic diseases was vital in discovering the motive of

these vitamin companies. Population samples from high risk groups and from the general population provided crucial data on vitamin taking habits of these people and the social/cultural backgrounds that helped shape the current market of vitamins users.

Results

Some critics categorize large vitamin distributors with that of "snake oil salesmen" due to embellished claims on wellness having little to no scientific basis (Hurley, 2007). Both the FDA and FTC play a role in the marketing and selling of vitamins. After visiting the FDA websites, it was found that vitamins are actually classified by the FDA under the broader term "dietary supplement." All dietary supplements are further classified as food products, which are handled by the Center for Food Safety and Applied Nutrition (CFSAN) under the FDA. According to the FDA website, "unlike drugs that must be proven safe and effective for their intended use before marketing, there are no provisions in the law for FDA to approve dietary supplements for safety before they reach the consumer" and "...dietary supplements, like conventional foods, may make other labeling claims that are not defined by statute or regulation (e.g., claims about taste or ingredient quality), as long as those claims are not false or misleading (Center for Food Safety and Applied Nutrition, 2022b)."

Advertisements of dietary supplements are exclusively handled by the FTC, but the FDA still handles labeling of vitamin bottles (Federal Trade Commission, 2022). Further research exposed that FDA policy on dietary supplements was last updated in 1994. FTA and FDA policy states that any claims that involve a nutrient deficiency disease can be used in advertising as long as the party mentions the prevalence of said disease in the United States (Center for Food Safety and Applied Nutrition, 2022a). Another term the FDA uses for this type of written statement is a "health claim," which, by law, only requires the party to mention a substance and tie it to a

disease for it to be used in the advertisement of a product (Center for Food Safety and Applied Nutrition, 2022c).

Advertisements for vitamins do not target all markets equally. A study on demographics most exposed to these types of health supplement advertisements uncovered that women are nearly 20 percent more likely to consume vitamins than men; this couples with an increased exposure of advertisements women experience in comparison to men (Eisenberg et al., 2017). Print, such as in magazines and newspapers, television, and social media domains are all markets vitamin companies target to reach the general populations. While science shows less than 10 percent of Americans are actually diagnosed with a nutrient deficiency disease that would require routine vitamin consumption, advertisements have been shown to target and increase usage for those without a high school education or without insurance (Eisenberg et al., 2017).

To explore personal consumer habits that sway Americans toward self-medicating with vitamin dietary supplements, I broke down a study conduction by the University of Chicago on Americans' relationship with healthcare provides. Via this study, it was concluded that 4 out of every 10 Americans will actively avoid going to health facilities, and roughly 1 out of 3 Americans will not purchase physician-recommended prescriptions due to the cost of medication (National Opinion Research Center, n.d.).

Further searching led me to examine studies on supplement prescriptions. One study from 2010 estimates that less than 1 in 4 instances would vitamin use actually be at the discretion of a licensed physician (Kantor et al., 2016). In general, supplements had a 10 percent higher prescription rate than dietary changes by licensed- mental health professionals, and, in some cases, vitamins were actually demonstrated to have adverse effects (Mörkl et al., 2021,Kantor et al., 2016).

Discussion

Outside of healthcare access, laws on vitamin use in the United States are not strictly classified by the government FDA as drugs that need a prescription. Under-regulation has allowed for many Americans to self-medicate without have to go through second party venders, such as pharmacies or medical professionals. Consequently, vitamin companies have flourished in the endless bounds of direct-to-consumer advertisements that our capitalist society encourages. Given that the FDA groups vitamins under this category, vitamins are able to escape a lot of regulatory and scientific studies that a regular drug would need to undergo before it comes to market. Clinical trials, statistical data on effectiveness, and other long-term patient studies are not required for vitamins.

In general, the FDA is limited to post market enforcement because, unlike drugs that must be proven safe and effective for their intended use before marketing, there are no provisions in the law for FDA to condone dietary supplements unless they pose a serious risk to public safety. Claims stating vitamins as ailments to disease can be highly unspecific and merely need to alert the consumer audience of the prevalence of such disease. Outdated FDA and FTC policy support the theory that the vitamin market is highly unregulated. An essential part to understanding this under regulation is the classification of vitamins as food, but not drugs.

Due to the lack of independent categorization and under-regulation of dietary supplements, vitamins have been able to slip through the cracks of FDA regulation. While they are consumed as food products, the claims of treatment and benefit for disease and illness are far too broad to be labeled on food products. Rather, these claims align more closely to that of drugs. However, the FTC and FDA only require companies to label how widespread a disease is for it to be included in vitamin advertising. For example, as long as a company mentions how

widespread scurvy is in the United States, they can claim their vitamin C product is a scurvy ailment. These claims do not mention how much vitamin C is effective or even give any statistical data or clinical information on the extent of these studies.

A new amendment to the FTC would better explain the intended use of vitamins. Changing the classification of vitamins from a food product would also alter how vitamins could be purchased. As food products can be purchased in grocery stores across America, not all drugs can be purchase on the shelves of our local markets. A nation-wide policy was to restrict how easily new vitamins can brought onto the market. If the FTC where to amend current laws regarding advertisements of vitamins, general and misleading claims would certainly decrease the amount of Americans believing in the benefits of vitamins.

Yet, since the creation of vitamins, around 70 years have passed. This time period is ample enough to pass through more than one generation into control over FDA policies. While the time has changed, it seems that this stagnation in policy can be owed to internal pressures within the FDA itself. In a highly capitalist society, larger companies have the power to dominate smaller government agencies. This has been see in the past with large brands, like McDonald's, Kentucky Fried Chicken, and Coca-Cola, and politicians spending more than 30 million dollars in lobbying efforts in the year 2015 (GOSTIN, 2016). It seems that vitamins are not different that food lobbying already seen by fast food company. If this was not this case, FDA policy would have some restrictions in place for a product that has loose reins on the amount of health claims that can be labeled and sold to Americans.

There are clear trends in the types of people using vitamins. Similar to fast food advertising to younger children and families, vitamin companies also target certain populations. It is clear from population studies that women, less educated, and uninsured people are

disproportionately targets of vitamin direct-to-consumer advertisements. Much like markets that have already been explored, vitamin companies promote and omit certain information for capital advantages. Fast food and processed food companies use terms like “naturally-derived” or “natural flavor” and so do vitamin companies. Blanket terms like “natural” are unspecific about what is actually in the product. According to the FDA, for a product to be natural it just cannot have artificially synthesized chemical in it. However, this label details nothing about the use of pesticides or pasteurization that are far from natural undisturbed states of food growth, production, and consumption (Center for Food Safety and Applied Nutrition, 2021). Vitamins can also use the terms “natural” on their labeling and even use this term in their company name. The 5.75 billion dollar company by the name Nature’s Bounty, is a prime example of how using health associated words like natural, green, and plant are associated with positive health-increasing benefits that make consumers trust the brand or product more.

Vitamins, available for purchase online or over-the-counter at any grocery store or pharmacy, have swayed many Americans away from licensed physicians due to how quickly and easily alternate treatments can be obtained. It is clear that most American prefer to avoid expensive meeting with medical professionals when they can simply go to any grocery store and buy vitamins prescription-free.

Conclusion

Government policy is outdated and classifies vitamins too simply as food products. Lofty claims and unclear wording on vitamin labels can easily be misinterpreted by consumers unfamiliar with FDA labeling policies. The use of blanket terms, like the word natural, have historically been used in the marketing of processed foods, and the same thing can be seen in vitamin marketing. Advertisements produced by vitamin companies are strategically placed to

target certain demographics. As vitamins are actually considered a food, many of the same lobbying trends that can be seen in the fast food and processed food industry have brought billions of dollars to vitamin companies. Verbiage, health claims, and benefits all have reduced requirements than drugs. No proof of effectiveness is needed to sell a vitamin as a health improving supplement. Internal lobbying that has ensued in the fast food and processed food market has carried over to the vitamin market and convinced many consumers that they are in power to choose in what ways they can become healthy. In reality, it seems that large companies continue to dominate public influence and create problems where there is a marketable solution. Vitamins are a highly-profitable market that prey on many Americans and make them believe they are in control. Yet, the upper hand continues to be in the field of companies when big brands dominate government agencies and prevent FDA policy changes that would prevent misleading and loose claims with no scientific backing to be advertised to the public.

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