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The use and trust of information sources related to the efficacy and safety of dietary supplements among US vs Chinese consumers: an exploratory study

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Dietary supplements are generally exempt from strict governmental regulations, leaving consumers to rely on various information sources to judge the safety and efficacy of these products. Given the differences in the US and Chinese marketplaces concerning government regulation and business responsibility, this study addresses the roles of different information sources for US and Chinese consumers. Findings reveal that while consumers in both countries rank family/friends and health professionals high (and marketer sources low), US consumers are more apt to trust online sources. While neither American nor Chinese consumers trust regulators to ensure supplement safety, Chinese consumers have lower trust than Americans.

keywords: nutritional supplements, dietary supplements, US consumers, Chinese consumers, government regulation, information source trust

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Introduction

Dietary supplements (also referred to as natural health products, complementary medicines, or food supplements) broadly include vitamins, minerals, herbs or other botanicals, amino acids, and other substances. Consumers often view them as a viable and low-cost approach to health enhancement, illness management, and personal improvement (Nichter & Thompson 2006). Despite the popularity and growing use of supplements, these products are generally neither regulated as conventional foods nor as drugs. As a result, regulations vary significantly across global markets. In the United States, for example, the Food and Drug Administration (FDA) regulates supplements as a separate category whereby "firms are responsible for evaluating the safety and labeling of their products before marketing to ensure that they meet all the requirements of the Dietary Supplement Health Education Act (DSHEA) and FDA regulations" (US Food and Drug Administration 2019). On the other hand, regulations are more stringent in China. The regulation of dietary supplements in China is governed by the Chinese Food and Drug Administration

(CFDA), which requires supplements to be registered and approved by the CFDA before they can be offered for sale. Manufacturers must submit detailed information about the composition of the product, the manufacturing process, and any safety and efficacy studies conducted. Any health claims made about the product must be supported by scientific evidence.

Regardless of government oversight, the burden generally falls on consumers to obtain accurate and comprehensive information regarding the efficacy and safety of dietary supplements. Customers have access to an array of information sources, and it is crucial to understand which sources consumers rely upon in their use of nutritional supplement products. Given the differences in economic and political systems and corresponding differences in the US and China marketplaces concerning consumer attitudes toward government regulation and business responsibility, it is reasonable to question how American and Chinese consumers differ in their trust in product-related information sources.

This study aims to understand various information sources' role for US and Chinese consumers in the risky but unevenly regulated nutritional supplement product category. It also examines consumer perceptions of supplement efficacy and safety. Finally, we examine which entities US and Chinese consumers believe should ultimately be responsible for ensuring dietary supplements' effective and safe use.

Literature Review

Market Size & Characteristics – USA

In American society, dietary supplements are now considered a viable and low-cost approach to health enhancement, illness management, and personal improvement (Nichter & Thompson 2006). Americans report using nutritional supplements to maintain or improve overall health and the health of specific organs, prevent disease, increase energy, improve mental health, achieve weight loss, and resolve miscellaneous health issues such as menopause and hot flashes (Bailey et al. 2013). Even though many dietary supplements are of dubious value and may be dangerous, they are mostly unregulated in the United States. In fact, the onus is placed on the Food and Drug Administration to prove a product is harmful rather than requiring manufacturers to demonstrate their products are safe and effective. (Wilson et al. 2006). American consumer dietary supplement expenditures are proliferating from US$32 billion in 2016 to a projected about $57 billion in 2024 (Mikulic 2019). According to the US Government Accountability Office (2013), approximately 150 million people in the United States use nutritional supplements, with 79 percent reporting daily use and 10 percent taking five or more different products per day. An estimated 77 percent of Americans use one or more of the tens of thousands of dietary supplements in place of prescription drugs, and 30 million use them instead of over-the-counter medications (Council for Responsible Nutrition 2019).

Research has explored the relationship between demographic factors (e.g. education, gender, and age) and beliefs about and intent to use supplements (Chandra et al. 2005, Gordon & Schaffer 2005). For example, a study of supplement use by US college athletes (Fralick & Trocchio 2019) revealed gender differences both in motivations (males: to gain strength; females; energy) and in the information sources they used (males: parents/guardians; females: coaches). Another stream of research compares the relative impact of dietary supplements versus prescription drugs on consumers' perceptions of a healthy lifestyle. Compared to nutritional supplements, medications reduce perceptions of health, diminish the importance of healthy lifestyle practices, and lead to lower motivation to engage in health-protective behaviors (Bolton et al. 2008). Subsequently, Royne et al. (2014) examined the impact of health consciousness on consumer attitudes and perceptions of supplement benefits and risks compared to prescription drug counterparts.

Market Size & Characteristics – China

China's dietary supplement market is growing at an estimated CAGR of about 13−14 percent. It is on track to overtake the United States as the largest supplement market, projected to reach US$40 billion by 2023 and US$69 billion by 2027. Several market factors fuel this growth, including the rise of China's consumer class, increasing health consciousness, an aging population, growth in e-commerce, and concerns regarding food security (China Business Review 2016). Chinese consumers' more popular supplements include collagen, grape seed extract, whey protein powder, and fish oil. It is common for Chinese consumers to take multiple supplements per day to promote overall well-being. Chinese consumers primarily opt for foreign supplement brands, mainly from the US and Australia, as these are more reliable than domestic brands. In turn, foreign brands have responded to the demand to include specific ingredients, branding, and packaging to better suit the Chinese market.

Supplement use in China spans age groups, with the heaviest usage among those 18−29. Consumers under 40 represent 62 percent of total buyers of food supplements (GMA 2020). While gyms and fitness centers are becoming popular in major cities like Shanghai and Beijing, these facilities are less common in smaller towns and rural areas. Vitamins and other dietary supplements provide an accessible alternative to participate in the wellness movement.

Government Regulation – USA

The Dietary Supplement and Nonprescription Drug Consumer Protection Act of 2006 requires mandatory reporting of serious adverse events associated with supplements and nonprescription drugs. However, the FDA can act against misrepresented claims of dietary supplements or adulterated products only after these supplements have reached the market. Thus, unlike prescription medications, tight regulatory oversight in the nutritional supplement category is lacking, and they need to be tested in controlled scientific studies. This regulatory approach, "innocent until proven guilty," provides consumers with inadequate protection despite reports of harm from contaminated and adulterated products (White 2020).

Even though some supplements contain substances similar to drugs, their regulations differ, particularly regarding product safety and health claims (Mason 1998). The FDA does not require supplements to have premarket approval or safety testing, as is necessary for new drugs and food additives (Vignuolo 1997). Supplement manufacturers were not required to submit evidence of efficacy or safety because the ingredients were found in food or had been used safely before the passage of DSHEA. Manufacturers must submit evidence of safety to the FDA seventy-five days before market release for those supplements that contain unproven ingredients. However, this safety information, which could include any citation to a published article, may be of questionable quality (e.g. a potentially biased study conducted by the manufacturer) (McNamara 1996).

Besides safety standards, DSHEA has fewer strict rules for substantiating health-related claims than the FDA has for drugs or food. DSHEA restricts FDA authority over supplements and gives manufacturers greater freedom to tout their products' health benefits. Although the Act mandates that the "nutrition statements of support cannot be false or misleading," there are no requirements for the manufacturer to substantiate the claims to the FDA, only notification that it is making a claim. Furthermore, the FDA can investigate documentary evidence for new drugs but has no expressed power to examine documentary records for supplements (Gilhooley 1997). White (2020) has been critical of the DSHEA and argues that it "was written to limit the FDA's oversight of dietary products" and cautioned that the supplement industry disregards consumer safety. Thus, self-regulation is unlikely to work.

Critics of the US nutritional supplement industry actively expose what they see as deficiencies in the industry regulations. They believe existing laws do not protect customers well, and there is substantial potential for harm from supplement use, ranging from financial loss to serious adverse health consequences. Dietary supplements continue to be used at a high rate because most consumers are uninformed about these issues. Multiple challenges in regulatory enforcement have significant public

health consequences, including inadequate evaluation of safety, insufficient requirements for efficacy, minimal surveillance for unsubstantiated labeling and marketing claims, inadequate quality assurance and control, and gaps in reporting of adverse events (AEs) in the context of a post-market regulatory framework (Starr 2015). Given what they see as a "Wild West" scenario, these industry critics have argued that regulators amend the DSHEA to require independent laboratory verification of new products and spot-checking products on shelves (White 2020).

Market Regulation – China

Dietary supplements are regulated as *health foods* in China, together with functional foods. Before 2015, when the new Chinese Food Safety Law went into effect, there needed to be more transparency in laws governing the manufacture and sale of supplements. This led to mistrust on the part of consumers and an environment that allowed unscrupulous parties to sell unsafe, shoddy, and in some cases, toxic products (Grebow 2015). The 2015 law establishes a notification-based system for certain supplements (vitamins and minerals) that allows those products to bypass the China Food and Drug Administration's (CFDA) registration process. The law implements function and ingredient catalogs, enabling the CFDA to oversee supplement components and end products. The new guidance also requires more detailed and comprehensive R&D reports from manufacturers, emphasizing product safety and scientific evidence of functionality. Jeff Crowther, executive director of the US-China-Health Products Association, says the new law helps boost transparency and eliminates some gray areas within the China supplement-regulatory framework that had grown murkier over the years. Supplements other than vitamins and minerals continue to be subjected to the long-standing *blue hat* system (named for the logo attached to approved products) that requires companies to engage in costly and extended review processes for each finished product. This system often prompts companies to sidestep the supplement approval process by classifying their products as *foods* (Grebow 2015).

Consumer Trust in Information Sources

US Consumers

With no clear, authoritative source of information, supplement users must determine which sources of information to trust (Thompson & Nichter 2007) and employ one or more sources of product information when choosing to use a particular dietary supplement. These include physicians and other health practitioners, family members and friends, mass media, in-store displays, advertisements, and online sources (Peters et al. 2003). Thompson and Nichter (2007) found that while supplement users receive information from a wide range of sources, 20 percent of respondents expressed skepticism about the value of the information obtained from most of these, including *scientific* knowledge about clinical trials of efficacy. In contrast, 35 percent trusted information and recommendations from lay referral networks or family members and friends. Another 23 percent characterized their supplement use decision as an *experiment* in which they employed knowledge and personal experience over *expert* sources of information.

When consumers reported they were motivated by family or friends to try a supplement, they cited a recommendation based on a positive experience, a family tradition, or culture as the influencing factor. They preferred to trust advice from those within their social support network. Attitudes regarding mass media credibility affected the degree to which consumers relied on news stories and product advertising (Teoh 2019). These findings comport with more general discoveries that one-third of Americans do not trust marketing. More than two-thirds of Americans are more apt to rely on advice from friends and family than in corporate marketing messages, with positive word-of-mouth having a significant impact. Consumers also count on online reviews before purchasing high-involvement products, with 73 percent of American adults indicating they would not consider a product with negative online reviews (Morrison 2014).

Previous consumer research on dietary supplement marketing primarily examined consumer reactions to direct-to-consumer advertising, unsubstantiated nutritional supplement claims, product warnings, and disclaimers (Mason & Scammon 2011, Royne et al. 2014). One such effort finds that government-mandated disclaimers do not impact supplements and that heavy users respond differently to disclaimers than light supplement users (Mason et al. 2007). The FDA has authorized several initiatives to improve product labeling to allow consumers to make more informed decisions about supplements. Homer and Mukherjee (2018) found that consumers made decisions about supplement efficacy despite limited information, unsubstantiated claims of benefits, and downplaying risks. Indeed, despite findings that many dietary supplements fail to deliver on promised benefits, consumers continue to exhibit high confidence in these products (Dodge & Kaufman 2007). White (2020) and others have called for consumers to be educated by health professionals about quality and efficacy issues and the risks of taking non-verified supplements. However, accepting this information is likely met with resistance by some consumers.

Chinese Consumers

Chinese consumers' purchase of vitamins and food supplements is often due to a recommendation made by friends or family members in China (GMA 2020). Chen et al. (2015) report on the usage and credibility of product information sources by Chinese rural customers for several products, including nutritional supplements. Over 1000 respondents from 34 rural counties/villages in 11 Chinese provinces participated in the study. The results show that rural Chinese consumers utilize various information sources depending on product categories. Most rural Chinese consumers (77%) ranked TV commercials as the top source for purchasing nutritional supplements. This study also establishes the link between perceived source credibility and information use. Chinese rural customers seemed to rely mostly on their family's recommendation for nutritional supplements (31%), followed by salesperson recommendations (26%) and TV commercials (23%) (Chen et al. 2015). Tzeng et al. (2022) report that nutritional knowledge influences Chinese consumers' acceptance, intention to purchase, and actual consumption of dietary supplements. Without advice from professionals, dietary supplement consumers typically identify products based on existing knowledge.

Research Propositions Development

We offer the following research propositions based on the literature review presented above and in light of this study's objectives.

Information sources: As consumers have access to an array of information sources regarding dietary supplements, including those from marketers (e.g. advertising, salespersons, and in-store displays) and third parties (e.g., online sites and family/friend recommendations), we propose our first research proposition: do American and Chinese consumers differ in their reliance on different sources of information?

Trust in efficacy by country-of-manufacture: Over 60 percent of nutritional supplements sold in China are imported from the US. Conversely, a limited number of Chinese-made supplements are available in the American market, so our second proposition is: does the trust in the efficacy of nutritional supplements differ for American and Chinese consumers based on the supplements' country of manufacture?

Trust in safety by country-of-manufacture: The research revealed that Chinese consumers value country of origin as a cue and an indicator of safety, with confidence in products manufactured in countries such as the US, Australia, and New Zealand (Mirosa et al. 2020). Therefore, our third proposition is: does the trust in the safety of nutritional supplements differ for American and Chinese consumers based on the supplements' country of manufacture?

Perceptions of where responsibility lies for ensuring supplement efficacy and safety: The literature reveals that both US and Chinese consumers use a variety of information sources in assessing supplement safety and efficacy, although there are differences in which sources they trust. For example, Chinese consumers trust media sources more than US consumers, who are skeptical about marketers. In the food industry, Chinese consumers also value safety certifications (Mirosa et al. 2020), while one in five Americans is skeptical of scientific studies and trials. Thus, our forth proposition is: do Chinese and American consumers vary on who they believe is responsible for ensuring supplement efficacy and safety?

Methodology

Research Instrument

The survey instrument was developed, which consisted of 26 questions, of which three were used to assess purchase frequency in five product categories – dietary supplements, over-the-counter drugs, skin care products, cars, and major appliances. The researchers developed these items based on the literature review. They tested on a sample of graduate students to ensure that they understood and captured the concepts of interest. Then, participants were asked to rank (1=most, 8=least used) the usefulness of eight information sources (television/radio commercials, online sources, family/friends, personal experience, print advertising, salespeople, in-store displays, health professionals) in making purchases for each of the product categories. Respondents also ranked the five product categories according to how much they trusted product efficacy and safety in each category. Participants were then asked to provide their opinions as to whether manufacturing location (US vs China), reliance on their knowledge and judgment, the manufacturer/retailer brand, and governmental regulations influenced their trust in the efficacy and safety when they purchased dietary supplements and the extent to which they felt various entities bore responsibility for ensuring product efficacy and safety. These were each assessed using 5-point Likert scale items (1=strongly disagree, 5=strongly agree). The respondents were then asked to provide general demographic information, including gender, age, education level, income level, and location, as in the case of the Chinese respondents.

The questionnaire was translated into Chinese, back translated, and modified until there was equivalency between the two versions. The appropriate Institutional Review Board approved the questionnaire, methods, and administration procedures for using human subjects. All subjects were apprised that they had provided their informed consent to participate in the study by completing the questionnaire. US citizens completed the English version, whereas, in the Chinese version, respondents included US-based individuals but were all either Chinese or Taiwanese nationals.

Sample

All questions were pre-tested by students in an undergraduate marketing class at a major university in the Northeastern US to ensure that they were clearly understood and unambiguous. Data was collected online through Qualtrics. We sent the relevant links to participants by email, using the network sampling method, starting with a convenience sample of students in the class of one of the co-authors. The final usable sample comprised 200 respondents (92 American and 108 Chinese). About 36 percent of the respondents were male, and 63 percent female. Within the US sample, 32 percent were male and 67 percent were female; within the Chinese sample, 39 percent were male and 60 percent were female. Across all respondents, 57 percent (US 84%, China 35%) were 18−24 years of age; 38 percent (US 7%, China 63%) were 25−34; one percent (US 2%, China 1%) were 35−44; and two percent (US 6%, China: 0%) were 45−64.

Results and Discussion

We used T-tests to assess differences between the mean responses of US and Chinese respondents on these variables: information sources, trust in supplement efficacy by country-of-manufacture, efficacy of

supplements by country-of-manufacture, perceptions of where responsibility lies for ensuring supplement efficacy and safety, and information sources regarding the efficacy and safety of dietary supplements. In the next section, we discuss the following research propositions in the context of differences between US and Chinese consumers.

Information sources: US and Chinese consumers relied most heavily on family/friends and health professionals and relied least on marketer information sources to make dietary supplement purchase decisions. Both rank the opinions of family/friends and health professionals highly, but the differences are not significant. The major difference between the two was in the use of online sources, with American consumers ranking online sources significantly ($p<.01$) higher (mean=3.53, where 1=most used) than their Chinese counterparts (mean=4.21). Interestingly, the use of information sources also varied across some of the other products studied, such as skincare and major appliances, but these are not reported here as they are not the focus of this study. Table 1 reports the differences between the nationalities.

Table 1. US and Chinese Consumers: Use of Information Sources Regarding Dietary Supplements

Source		Mean	SD	T-Score
Online	US.	3.53	1.55	9.46**
	China	4.21	1.61	
Family/Friends	US.	2.77	1.38	2.48
	China	2.49	1.14	
Health	US.	3.28	2.63	2.84
Professionals	China	2.72	2.07	
Marketer Sources	US.	5.99	.96	.00
	China	5.98	.71	

** $p<.01$, df=199

Trust in Supplement Efficacy by Country-of-Manufacture: US and Chinese consumers indicated higher trust in the effectiveness of dietary supplements produced in the US than in China. While both sets of consumers placed greater confidence in the efficacy of US-manufactured supplements, interestingly, US consumers were significantly ($p<.05$) more likely to trust Chinese-made products (mean=2.62) than the Chinese (2.37). Table 2 reports the differences between the nationalities.

Table 2. US and Chinese Consumers: Efficacy of Supplements by Country-of-Manufacture

Group	Mean	Std. Deviation	*T*-Score
Chinese-manufactured			
U.S. consumers	2.62	.86	2.09*
Chinese consumers	2.37	.75	
U.S.-manufactured			
U.S. consumers	3.17	.99	-1.06
Chinese consumers	3.30	.65	

*$p<.05$; $df=182$

Trust in Supplement Safety by Country-of-Manufacture: US and Chinese consumers were more apt to trust the safety of dietary supplements manufactured in the United States than those produced in China. However, there were no significant differences between the two sets of consumers. However, like their greater trust in the efficacy of Chinese-made supplements, US consumers also believed more in the safety

of Chinese-produced supplements (mean=2.74) than their Chinese counterparts (mean=2.45). Table 3 reports the differences between the nationalities.

Table 3. US and Chinese Consumers: Safety of Dietary Supplements by Country-of-Manufacture

Group	Mean	Std. Deviation	*T*-Score
Chinese-manufactured			
U.S. consumers	2.74	.82	2.58*
Chinese consumers	2.45	.72	
U.S.-manufactured			
U.S. consumers	3.38	.87	-.75
Chinese consumers	3.48	.71	

* $p<.05$; $df=182$

Perceptions of where responsibility lies for ensuring supplement efficacy and safety: Chinese consumers indicated they were more likely (mean=3.87) than their American counterparts (mean=3.56) to believe they were responsible for ensuring supplement efficacy and safety instead of messaging from supplement manufacturers or government regulators in providing nutritional supplements that are safe and effective. Table 4 reports the mean, SD and associated significance level.

Table 4. US and Chinese Consumers: Judgment/knowledge in the Purchase of Dietary Supplements

Group	Mean	Std. Deviation	*T*-Score
U.S. consumers	3.56	1.12	-2.26*
Chinese consumers	3.87	.67	

* $p<.05$, $df=182$

In general, both Chinese and US consumers indicated that the responsibility for ensuring the efficacy and safety of dietary supplements rested more with the manufacturer than with government regulators. However, the differences were not statistically significant. US consumers were significantly ($p<.00$) more apt to believe that the government was responsible for ensuring product safety than their Chinese counterparts. Table 5 reports the differences between the nationalities.

Table 5. US and Chinese consumers: Information Sources re. Efficacy/Safety of Dietary Supplements

Group	Mean	Std. Deviation	T-Score
Efficacy: Responsibility of the manufacturer			
US consumers	3.31	.97	-.40
Chinese consumers	3.36	.68	
Efficacy: Responsibility of government regulators			
US consumers	3.12	1.13	-.39
Chinese consumers	2.98	.94	
Safety: Responsibility of the manufacturer			
US consumers	3.33	1.05	-1.27
Chinese consumers	3.50	.70	
Safety: Responsibility of government regulators			
US consumers	3.12	1.09	-4.35***
Chinese consumers	2.98	.86	

*** $p<.00$, $df=182$

This study provides insight into how American and Chinese consumers view the purchase of nutritional supplements. Both American and Chinese consumers rank family/friends and health professionals high when considering supplements. The critical difference is in online sources, where US consumers rank these significantly higher than Chinese consumers. Marketer sources (advertising, salespersons, and in-store messages) are not seen as trustworthy by either group (Table 1). As shown in Tables 2 and 3, American consumers trust the effectiveness (mean=2.62 vs 3.17) and safety (mean=2.74 vs 3.38) of nutritional supplements manufactured in China less than those manufactured in the US. Chinese consumers also place greater trust in both the efficacy and safety of US manufactured versus Chinese manufactured supplements. Still, interestingly, the only statistically significant difference is that US consumers have greater belief in both the efficacy and safety of Chinese-manufactured ones than do Chinese consumers. Consistent with the high ranking of personal information sources, reliance on the manufacturer and retailer brand image is relatively similar between American and Chinese consumers when purchasing nutritional supplements. Finally, while neither American nor Chinese consumers trust the government to ensure supplement safety, Chinese consumers have lower trust than Americans as Table 5 shows.

Implications for Policy Makers

One finding that should be troubling for marketers is the low ranking of the use of marketer sources by both US and Chinese consumers. Given the projected growth in nutritional supplement sales, as discussed earlier, marketers must build trust in their information as they invest in marketing expenditures to gain a larger market share. One area for them to explore is influencer marketing since this capitalizes on the use of online media and the influence of friends/family and health professionals, which the data shows is popular among consumers. Chinese manufacturers of nutritional supplements need to improve perceptions of effectiveness and safety in the American market, particularly at home. Using independent labs to test and certify supplements can help raise consumer trust in the safety and efficacy of these products. Nonprofits such as NSF International and the US Pharmacopeial Convention that review and set standards for supplements and verify them by auditing manufacturing facilities and testing for quality also, offer independent certification. Still, only some supplement manufacturers seek this certification (McGinty 2021). Different actors in the supplements sector can address some of the issues raised in this study. Manufacturers and retailers can provide free nutritional supplement samples to American and Chinese consumers to generate positive experiences. Good experiences will motivate consumers to purchase that brand's dietary supplements and generate positive word-of-mouth. While American and Chinese governments are tightening regulations and playing a more active role in ensuring safety and efficacy by setting more specific and strict regulations and working with the industry to improve product safety and quality, consumers still expect supplement manufacturers to ensure this.

Limitations and Directions for Future Research

The limitation of this study is that most survey participants are college students. Most respondents belonged to one of two age groups, 18−24 (56%) and 25−34 (38%). This limitation limits the ability to generalize the findings to the overall population. Future studies should attempt to reach all age groups of nutritional supplement users, especially among populations where low incomes and lack of access to healthcare cause people to self-medicate or rely on untested and unproven remedies. Another limitation is that this study needs to control participants' experiences of using nutritional supplements. Different experiences may lead to a different level of trust that customers place in dietary supplements. Further studies should categorize customers based on their experiences of using nutritional supplements. Since the data was collected for this study, the global pandemic has ravaged many countries since early 2020.

This pandemic has revealed weaknesses in national healthcare systems and the unevenness in citizens' access to them. It has also led to the advocacy of various untested and unproven Covid remedies, often by individuals who are not healthcare specialists. Sometimes, doctors and manufacturers have used social media to promote these remedies (Maxmen 2021). For vulnerable populations in the US, China, and elsewhere, such as low-income immigrant populations with high rates of COVID-19 infection but limited access to healthcare, unregulated drugs are appealing because of cost and accessibility.

Future research might explore changes in the sources of nutritional supplement information used by consumers post-pandemic; whether consumers are more attentive to the country of manufacture, their trust in and expectations of manufacturers, retailers, and healthcare professionals; and whether confidence in government regulators to ensure safety and efficacy have changed. Given the considerable growth in sales of supplements because of the pandemic, the issue of trust in quality, safety, and efficacy may become more important as consumers seek to maintain their health and well-being.

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