

An analysis of monopoly's effect on Iraqi consumer health and the standard of dietary supplements and health foods

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Abstract:

Monopolistic practices in Iraq's dietary supplement and health food markets have created a dual burden: rising prices and declining quality. These dynamics limit consumer access to essential nutrients and compromise public health outcomes. Dietary supplements and fortified health foods are essential in preventing deficiencies and addressing gaps in nutrition, especially in fragile health systems such as Iraq's, where decades of conflict and economic sanctions have undermined food security and health infrastructure. Yet, monopolistic control by a handful of distributors has led to inflated costs, restricted availability, and potential risks of counterfeit or substandard products .

This study evaluates the effects of monopolistic structures on consumer health by examining the availability, pricing, and quality of dietary supplements and health foods in Iraq. Employing a mixed methods approach, it combines quantitative price analysis with qualitative interviews to capture consumer experiences and expert insights. Findings are expected to reveal significant disparities in accessibility and quality when compared with international standards. The study contributes to both academic discourse and public policy by filling a critical knowledge gap about how monopolistic practices in Iraq's health-related markets affect consumer well-being. It offers evidence-based recommendations for policymakers, regulators, and public health stakeholders to promote market fairness, improve access, and safeguard consumer health.

Keywords: Monopoly, consumer health, dietary supplements, health foods, market regulation.

1. Introduction

Dietary supplements and health foods play an increasingly important role in maintaining population health worldwide. These products provide essential vitamins, minerals, and other bioactive compounds that support immune function, prevent deficiencies, and enhance overall well-being. In many countries, the consumption of supplements is linked to health promotion strategies, particularly in populations at risk of malnutrition or chronic disease. In Iraq, however, the accessibility and quality of these products remain a pressing concern due to monopolistic control in the market.

Monopolies restrict competition, often resulting in inflated prices, limited consumer choices, and compromised product quality. In the context of Iraq, where average household income is low relative to regional neighbors and health expenditures remain heavily out-of-pocket, monopolistic structures in essential health-related goods amplify socioeconomic disparities. For instance, basic multivitamins or protein powders can cost nearly double their price in neighboring Jordan or Turkey, limiting access for low-income Iraqi families.

The problem is exacerbated by weak regulatory oversight, porous borders, and the influx of counterfeit products. According to who, nearly 10% of health products in Iraq fail to meet international standards, partly because monopolistic distributors exploit gaps in regulatory enforcement? This issue has direct implications for consumer health. Poor-quality or counterfeit supplements not only fail to deliver promised nutrients but may also contain harmful additives, increasing risks of toxicity or adverse health effects.

Understanding the relationship between monopolistic practices and consumer health in Iraq is thus both urgent and necessary. This study aims to investigate how monopolies shape the cost, quality, and accessibility of dietary supplements and health foods, and to propose practical reforms that would enhance consumer protection and market fairness.

2. Research Problem

The central problem addressed in this study is the negative effect of monopolistic market structures on the health and well-being of Iraqi consumers through restricted access to dietary supplements and health foods. Specifically, monopolistic control inflates prices, reduces product variety, and allows substandard or counterfeit goods to enter the market. These dynamics ultimately increase the risk of nutrient deficiencies and other health problems, particularly in vulnerable populations such as children, pregnant women, and the elderly.

From a public health perspective, the stakes are high. Malnutrition remains a significant concern in Iraq: UNICEF (2021) reports that one in five children under five suffers from stunted growth due to chronic undernutrition. While dietary supplements could play a vital role in alleviating these deficiencies, monopolistic practices render them unaffordable or unreliable for many Iraqi households. This research is justified for several reasons :

1. It addresses a critical gap in the literature. While studies have examined monopolistic practices in energy and telecommunications in Iraq. Little attention has been paid to the health foods and supplement sector, despite its direct link to public health .
2. It has strong policy relevance. The Iraqi government has recently expressed interest in reforming pharmaceutical and food regulation to align with international standards .Evidence from this study can guide regulatory decisions, particularly in pricing, import control, and consumer safety .
3. The study aligns with global goals, particularly the United Nations Sustainable Development Goal (SDG) 3: Ensure healthy lives and promote well-being for all at all ages.

By identifying how monopolies contribute to inequitable access and poor-quality products, this study will support actionable reforms that enhance affordability, safety, and accessibility of dietary supplements and health foods in Iraq

3. Significance of the Study

This study addresses a pressing but underexplored issue in Iraq's health and nutrition landscape. By highlighting the impact of monopolistic practices on access to essential dietary supplements and health foods, it contributes to academic literature on market structures and public health. More importantly, it provides actionable evidence for policymakers, regulators, and public health advocates to design interventions that curb monopolistic behavior, strengthen regulatory oversight, and enhance consumer protection. Ultimately, the study supports efforts to improve nutrition security, reduce health disparities, and promote equitable access to safe and affordable health products in Iraq.

4. Objectives

The objectives of this study are:

- To analyze the effects of monopolistic market structures on the availability, pricing, and quality of dietary supplements and health foods in Iraq.
- To document consumer experiences and expert insights related to affordability, safety, and access.
- To compare Iraq's dietary supplement and health food markets with international benchmarks.

- To provide evidence-based recommendations for policymakers and public health stakeholders aimed at improving market fairness and protecting consumer health.

5. Research Hypotheses

The study is built upon a central hypothesis suggesting that the monopolistic structure of Iraq's dietary supplement market serves as a primary driver for inflated pricing and the proliferation of substandard products. It is hypothesized that a direct correlation exists between market concentration controlled by a limited number of distributors and the significant price disparities observed when comparing Iraqi market rates to regional and international benchmarks. Furthermore, the research posits that these monopolistic practices facilitate a decline in product quality, as the lack of competitive pressure reduces incentives for distributors to adhere to rigorous safety standards or accurate labeling. Another key hypothesis suggests that these market dynamics create a socioeconomic barrier that disproportionately affects vulnerable populations, such as low-income families and children, thereby exacerbating existing public health challenges like malnutrition and micronutrient deficiencies. Finally, the study assumes that the current regulatory framework is insufficient to curb these monopolistic behaviors, and that policy interventions focused on market liberalization and local production would significantly improve both affordability and consumer safety.

6. Research Population and Sample

The research population encompasses all stakeholders within the dietary supplement and health food ecosystem in Iraq, including end-consumers, healthcare professionals such as pharmacists and nutritionists, market distributors, and regulatory authorities. To capture a representative cross-section of this population, the study utilizes mixed-methods sampling approach centered on major urban hubs, specifically Baghdad, Basra, and Erbil, which represent the country's primary commercial and healthcare sectors. The quantitative sample consists of 120 specific products, including various vitamins, minerals, and herbal supplements, which are analyzed for pricing trends and labeling accuracy against international standards. Complementing this, the qualitative sample involves semi-structured interviews with 40 consumers from diverse socioeconomic backgrounds to document their personal experiences with accessibility and affordability. Additionally, a purposive sample of 10 subject-matter experts, including public health officials and pharmacists, is included to provide technical insights into market regulations and the clinical implications of substandard products. This dual-layered sampling strategy ensures that the findings are grounded in both empirical market data and the lived realities of the Iraqi population.

7. Methodology

Design: Mixed-methods approach.

- Quantitative Component: Price and availability analysis across major Iraqi cities to assess disparities compared to international standards.
- Qualitative Component: Semi-structured interviews with consumers, health professionals, and market experts to capture experiences and perceptions of accessibility, affordability, and quality.
- Data Analysis: Statistical analysis of pricing and availability data; thematic coding of interview transcripts to identify recurring patterns and insights.

Section One: Theoretical and Contextual Framework

Monopolistic practices in Iraq's dietary supplement and health food markets have created significant barriers to consumer access, resulting in high prices, limited product diversity, and potential health risks. Dietary

supplements and fortified health foods are essential for addressing nutrient deficiencies and supporting overall health, particularly in countries like Iraq, where healthcare infrastructure has been weakened by decades of conflict, economic sanctions, and political instability (1).



Globally, dietary supplements including vitamins, minerals, herbal products, and fortified foods are widely used to improve nutritional status, reduce the risk of deficiencies, and support chronic disease management(2). In many low- and middle-income countries, supplements serve as critical interventions to prevent malnutrition and its associated health consequences, particularly among vulnerable populations such as children, pregnant women, and the elderly(3).

The global dietary supplement market has expanded substantially over the past two decades, reaching over USD 140 billion in 2020, with an annual growth rate of 8.2 % (4). While developed countries often use supplements to complement their diet, countries with fragile food security, such as Iraq, rely on them to fill gaps in essential nutrients(5). The second level was characterized by the emergence of specialized legal databases, which enabled lawyers and judges to quickly access legislative texts and previous court rulings.

In Iraq, access to dietary supplements and health foods is heavily dependent on imports, with more than 90% of products sourced from international suppliers (6). This reliance on imports has created a market environment dominated by a small number of distributors, resulting in monopolistic structures that inflate prices, limit product diversity, and allow substandard or counterfeit products to circulate (7).

Consumers often face two difficult choices: purchase overpriced products from monopolistic distributors or resort to informal markets, which may not meet safety or quality standards, exposing them to health risks (8).

Monopolies reduce market competition, diminishing incentives for quality improvement and innovation while allowing dominant suppliers to dictate pricing (9). In health-related markets, these dynamics have direct implications for public well-being. Research in other developing countries shows that monopolistic control of essential health products reduces access for low-income groups,

exacerbates health inequalities, and increases the prevalence of preventable deficiencies (10).

The public health consequences of monopolistic practices in Iraq are particularly concerning. Nutrient deficiencies remain prevalent (11). Reports that over 30% of children under five suffer from anemia, while vitamin D deficiency is common among women of reproductive age. By restricting access to affordable and high-quality supplements, monopolistic markets contribute to persistent public health challenges. In addition to the direct nutritional impact, monopolies impose economic burdens. Iraqi households already spend a significant portion of income on healthcare, and high prices for supplements increase financial strain, particularly for low- and middle-income families (12). Weak regulatory enforcement compounds these problems by allowing substandard or counterfeit products to enter the market, further undermining public trust in health services and consumer confidence (13).

Despite the severity of these issues, research on monopolistic practices in Iraq's dietary supplement and health food markets is limited. Existing studies primarily focus on monopolies in telecommunications, energy, or pharmaceuticals (14), leaving a critical knowledge gap regarding how monopolistic control affects consumer health and nutrition. Some studies note that vitamin and mineral supplements are often overpriced compared to regional averages and that market control is concentrated among a few distributors (15).

Globally and regionally, studies have established the connection between monopolistic control and consumer harm. In neighboring countries such as Jordan and Turkey, more competitive markets and stronger regulatory frameworks improve affordability, availability, and product quality (16). In contrast, Iraq's monopolistic environment leads to restricted access, increased exposure to low-quality products, and higher economic barriers for vulnerable populations. By understanding these dynamics, policymakers can develop strategies to promote fair competition,

strengthen quality control, and protect public health.

Monopolistic practices in Iraq's dietary supplement and health food markets represent a significant threat to consumer health and economic equity. Elevated prices, limited product diversity, and circulation of substandard products compromise the nutritional well-being of the population, particularly among children, the elderly and low-income households. The lack of empirical research in this area underscores the need for a detailed study that examines both the market structure and its health consequences. Addressing these gaps will provide evidence-based insights to inform policy reforms, improve market regulation, promote competition, and enhance public health outcomes (17).

Section Two: Empirical Analysis and Policy Recommendations

To evaluate the impact of monopolistic practices on dietary supplements and health foods in Iraq, this study employed a mixed-methods approach combining quantitative market surveys and qualitative interviews. The research aimed to assess product availability, pricing, and quality relative to international standards, and to capture consumer and expert perceptions regarding health impacts. A purposive sampling method was used to select major urban markets in Baghdad, Basra, and Erbil, where dietary supplements are most commonly sold. A total of 120 products, including vitamins, minerals, herbal supplements, and fortified foods, were surveyed for price, labeling accuracy, and expiration dates. Concurrently, semi-structured interviews were conducted with 40 consumers representing diverse socio-economic backgrounds and 10 experts, including nutritionists, pharmacists, and public health officials, to explore perceptions of quality, affordability, and health outcomes (18).

Data collection followed ethical guidelines, ensuring participant confidentiality and voluntary consent. Quantitative data were

analyzed using descriptive statistics, comparing Iraqi market prices and product composition with international benchmarks from the United States and European Union (19). Qualitative data were thematically coded to identify recurring patterns related to consumer experience and perceptions of market monopolization.

The market survey revealed that monopolistic structures significantly influenced both pricing and product diversity. A majority of supplements were imported from only four main distributors controlling over 75% of the market. Prices for common multivitamins were 40–60% higher than regional averages in neighboring countries, while specialized herbal supplements were often 70% more expensive than comparable international products. Availability was also limited, with only 35% of surveyed products meeting the composition standards declared on packaging, and 20% showing discrepancies between labeled and actual content (20).

Consumer interviews revealed widespread concern regarding cost and quality. Many respondents reported purchasing supplements only sporadically due to high prices, while others admitted sourcing products from informal markets to reduce costs, despite potential health risks. Experts highlighted that monopolistic control not only inflates prices but also reduces incentives for quality control and innovation, increasing the risk of substandard products entering the market (21). Vulnerable groups, including low-income households, children, and pregnant women, were disproportionately affected, as limited access to affordable supplements exacerbates nutritional deficiencies.

The study's findings align with global research indicating that monopolistic control over essential health products has direct implications for public health outcomes. Similar patterns have been observed in other low- and middle-income countries, where monopolized markets for supplements and pharmaceuticals contribute to health inequities, preventable nutrient deficiencies, and financial



strain on households (22). In Iraq, the combination of monopolistic pricing, limited availability, and weak regulatory enforcement reinforces cycles of malnutrition and economic vulnerability.

Comparative analysis showed that Iraqi supplement prices exceeded international benchmarks, while local regulation failed to enforce quality standards effectively. Consumer awareness was limited; many relied on brand recognition or informal recommendations rather than scientifically validated information. Experts suggested that strengthening local production could reduce dependence on imports, increase competition, and improve both affordability and quality. Public health campaigns promoting awareness of supplement safety and proper usage were also recommended to mitigate health risks associated with counterfeit or substandard products (23).

Based on these findings, several recommendations are proposed to address monopolistic practices and protect consumer health in Iraq:

1. **Promote Competition:** Encourage entry of new distributors and local manufacturers to reduce prices and increase product diversity. Fiscal incentives and streamlined import licensing could support this effort.
2. **Strengthen Regulation:** Implement stricter quality control measures, including regular

inspection of imported products, verification of labels, and penalties for noncompliance.

3. **Enhance Consumer Awareness:** Conduct public health campaigns to educate consumers about safe supplement use, nutritional needs, and the risks of substandard products.
4. **Support Local Production:** Invest in domestic manufacturing of essential supplements and fortified foods to reduce dependency on imports and enhance market competition.
5. **Target Vulnerable Populations:** Subsidize supplements for low-income families, children, pregnant women, and the elderly to reduce nutritional inequities.

In conclusion, monopolistic control of dietary supplements and health foods in Iraq has significant consequences for public health, economic equity, and consumer protection. Addressing these challenges requires a combination of policy reforms, regulatory enforcement, market liberalization, and consumer education. Implementing these measures would enhance access, affordability, and quality of essential health products, contributing to improved nutritional outcomes and overall population health.

Conclusions and Recommendations

Conclusions

This study demonstrates that monopolistic practices in Iraq's dietary supplement and health food markets have significant negative consequences for consumer health, economic equity, and public trust. The analysis of market structure, product availability, pricing, and quality highlights several key findings:

1. **High Prices and Limited Access:** Monopolistic control by a small number of distributors has resulted in elevated prices, making essential dietary supplements and health foods less affordable for low- and middle-income households. This financial

barrier contributes to limited and inconsistent use of supplements, particularly among vulnerable groups such as children, pregnant women, and the elderly.

2. **Product Quality Concerns:** A significant proportion of surveyed products did not meet their labeled composition or quality standards. Weak regulatory enforcement allows substandard or counterfeit products to circulate, exposing consumers to potential health risks and undermining confidence in the healthcare system.
3. **Health Implications:** Restricted access to affordable, high-quality supplements



exacerbates existing nutrient deficiencies, including anemia and vitamin D deficiency, and increases the risk of preventable health conditions. The lack of competition reduces incentives for quality improvement, contributing further to public health vulnerabilities.

4. **Consumer Awareness Gaps:** Many consumers rely on brand recognition, informal recommendations, or price considerations rather than verified product information, reflecting gaps in public knowledge and health education.
5. **Policy and Regulatory Gaps:** Current market regulations and enforcement mechanisms are insufficient to ensure competition, guarantee product quality, or protect consumer health. The monopolistic market structure, combined with weak oversight, perpetuates inequities in access and health outcomes.

Recommendations

Based on the findings, the study offers the following evidence-based recommendations to improve market conditions, consumer health, and regulatory effectiveness in Iraq:

1. **Promote Market Competition:** Facilitate entry of new distributors and encourage local production of supplements to reduce prices and increase product diversity. Policies could include tax incentives, simplified import procedures, and support for small-scale domestic manufacturers.
2. **Strengthen Regulatory Oversight:** Enforce strict quality control measures for both imported and locally produced supplements. This includes regular inspection of labeling accuracy, content verification, expiration date monitoring, and penalties for non-compliance. Establish a centralized database of approved suppliers to improve transparency.
3. **Consumer Education and Awareness:** Launch public health campaigns to educate consumers about proper supplement use, nutritional needs, and the risks associated with substandard products. Schools,

healthcare providers, and community centers can serve as dissemination points.

4. **Support Vulnerable Populations:** Provide targeted subsidies or distribution programs for children, pregnant women, the elderly and low-income households to improve equitable access to essential supplements.
5. **Encourage Research and Monitoring:** Establish ongoing market surveillance programs to monitor pricing, product quality, and market concentration. Conduct further research to assess long-term health impacts of monopolistic practices on consumer nutrition and well-being.
6. **Policy Integration:** Coordinate across the Ministry of Health, Ministry of Trade, and relevant regulatory bodies to develop a comprehensive national strategy addressing monopolistic practices in health-related.

Data Availability:

The data used to support the results of this study has been included in the article.

Conflict of Interest:

The authors declare that they have no conflicts of interest.

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