



EMPHNET's Research Digest

Sugar Reduction Initiatives in the Eastern Mediterranean Region: A Systematic Review

Introduction

Countries in the Eastern Mediterranean Region (EMR) are experiencing a nutrition transition with a significant increase in sugar consumption. This is linked to an alarming surge in non-communicable diseases (NCDs).

Sugars are classified as Total Sugars (TS), Added Sugars (AS), and Free Sugars (FS), with the World Health Organization (WHO) recommending reducing FS to less than 10% of total energy intake (EI).

The WHO Regional Office for the Eastern Mediterranean (WHO EMRO) set policy goals aligning with the WHO's regional plans for 2020–2030 and obesity prevention framework for 2019–2023. Despite these efforts, a comprehensive evaluation of national sugar reduction strategies across the EMR is lacking.

[“Sugar Reduction Initiatives in the Eastern Mediterranean Region: A Systematic Review”](#) published in *Nutrients*, seeks to identify and

assess existing initiatives, as well as evaluate their impacts when data permits. This digest summarizes the findings and implications, highlighting the importance of continued efforts and collaboration in addressing health challenges related to sugar consumption in the EMR.

A comprehensive literature search of 11 electronic databases and grey literature identified 162 documents. Of which, 72 were peer-reviewed articles, and 90 were documents/sources obtained from the grey literature, webpages, links, references from country contacts through a questionnaire, and references from within articles.

Key Findings

1. Assessment of Total Sugar (TS), Added Sugar (AS), and Free Sugar (FS) Intake:

Out of the 22 EMR countries, 13 reported estimates related to TS intake, and only four had information on AS or FS intake.

TS Intakes: National surveys conducted in Lebanon showed that TS intake ranged between 17.4–40% EI among under-five children, the highest being in 0–6-month-old infants, while in adults, it ranged between 10.5–12% EI. In Afghanistan the per capita estimate is 5% EI, while in Jordan the estimate is 11.8% EI.

As for regional studies (i.e., specific regions within the country) TS intake among adults were estimated at 13.5% EI and 14.7% EI in Palestine (West Bank) and Lebanon (Beirut), respectively, 7.6% within populations of rural women in Iran, and 16% EI among populations of urban women in Egypt.

Few countries evaluated TS intake among adolescents with Jordan (Amman) reporting the highest levels (42–48% EI), and Libya (Benghazi) reporting the lowest (20.4% EI). TS intakes estimated among under-five children in United Arab Emirates (UAE: Abu Dhabi, Dubai, Sharjah),

ranged between 20-33.5%, the highest observed in 0-6 month-old infants.

AS and FS Intakes:

Lebanon provided the only national estimates for AS and FS, with AS intake being 11.2% EI among 4-13-year-olds, and FS intake 6.3-11.9% EI among under-five children and 12.6-12.9% EI among ages 6-18 years. In UAE regions, AS intake ranges between 0.3-8.5% among children under 4 years old, and FS between 2.3-10.6% EI among children under 5 years old, with the intake of both increasing with age.

Among adults, FS intake was estimated at 11.4% EI in Lebanon (Beirut), while in Libya (Benghazi), an intake of 12.6% EI was reported among 12-year-old adolescents. In Iran (Hamadan), an FS intake of 11.7% EI was noted among adult women. In Tunisia, among ages 15-19 years, FS intake exceeded recommended level.

2. Compliance/Adherence to Sugar Recommendations:

Children and adolescents in Lebanon and the UAE exceed the WHO FS upper limits; 24.8-54.2% of under-five children and 58.1-62.2% of 6-18-year-olds in Lebanon, and 28%, 54%, and 52% of ages 12-23.9 months, 24-35.9 months, and 36-47.9 months, respectively, in UAE, exceeding the limit.

Similarly, only a minority of children in KSA comply with WHO guidelines, and only 0.9% of ages 6-12 years consume <5% EI of FS. In contrast, adults in Tehran, Iran are largely adherent (82.2% of males and 89.8%). for AS, only 29.1% of children and adolescents in Lebanon are compliant with the recommendations set by the American Heart Association (≤ 25 g/day).

While in Sudan, based on the STEPS survey among adults, the

average weekly intake of AS was ~ 6.3 teaspoons, within the WHO recommended daily intake of 50g i.e., 12 level teaspoons.

3. Assessment of Sugar Levels and Sugar-Related Knowledge, Attitudes, and Behaviors (KAB):

Six countries (Iran, Jordan, Lebanon, Oman, Qatar, and Tunisia) have evaluated sugar levels in local foods. High levels were reported in bakery products, ready-to-eat cereals, chocolates, and biscuits. Iran was the only country to show decreasing sugar levels in food products.

KAB information was available from 10 countries, mostly demonstrating a preference for high sugar foods, poor knowledge related to sugar food sources, and a lack of success in restricting sugar in diets. For example, > 65% of school-aged children in Jazan, KSA, had poor knowledge about sugar content, and only 1.7% of mothers were successful in limiting/controlling their child's FS intake.

4. National Sugar Reduction Initiatives:

A total of 21 countries (excluding Syria) had national sugar reduction strategies. Additionally, four countries (Jordan, KSA, Morocco, Oman) had government-led national strategies targeting NCDs or healthy lifestyles, with Jordan and KSA specifying in their strategies the reduction of FS and monosaccharides, respectively.

Taxation, Subsidies, and Marketing:

The majority of countries (19/21) are working on taxation of sugar-rich products, elimination of subsidies, and regulation of marketing, with the least popular mechanism being marketing regulations.

Specific taxation initiatives have mostly targeted sugar sweetened beverages with some countries extending the tax to include other products.

Product Reformulation, Education, and Labeling:

Most countries (18/21) are implementing or planning strategies related to food product reformulation, consumer education, labeling initiatives, and interventions in specific settings.

The most common intervention is consumer education (71% out of the countries that have initiatives), while the least common was food labeling initiatives (43% out of the countries that have initiatives).

Monitoring, Evaluation, and Impact Assessment:

Monitoring and compliance assessments have been conducted in only a few countries including Iran, Jordan, and Kuwait, reflecting a focus on accountability. Impact assessments were undertaken in Iran and KSA to understand the effects of taxation on consumption patterns.

Conclusion

Despite data scarcity, the review establishes that intakes of AS and FS remain alarmingly high, especially in children and infants and surpassing the WHO's upper limits across all age groups. While almost all EMR countries have implemented some form of sugar reduction initiatives, there is a pressing need for more concerted and multicomponent interventions.

The most promising efforts have been those that combine several strategies, as they are expected to have a greater impact compared to single policy initiatives.

Unfortunately, monitoring and impact assessment remain limited, revealing an urgent need for strengthening regulatory capacities and compliance monitoring.

The positive momentum in some countries must be built upon to ensure that the entire region meets the targets set in their national action plans and strategies.

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