

The Rising Burden of Fatty Liver Disease in the Middle East: Why Oman Must Act Now?

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Steatotic liver disease, characterized by abnormal lipid accumulation in the liver (hepatic steatosis), has become a global health challenge.¹ The nomenclature has evolved in recent years, with the traditional term non-alcoholic fatty liver disease (NAFLD) being updated to metabolic dysfunction-associated steatotic liver disease (MASLD) and metabolic-associated fatty liver disease (MAFLD), to emphasize the underlying metabolic dysfunction.^{2,3} While closely related and often used interchangeably, MASLD now refers explicitly to a redefined diagnostic framework that excludes significant alcohol consumption, whereas MAFLD emphasizes the metabolic syndrome context. This editorial uses these terms interchangeably, to reflect current transitional usage.

MAFLD is now the leading cause of chronic liver disease worldwide and a major contributor to liver-related illnesses and deaths. Global prevalence has risen to an estimated 30%—a significant 50% increase over the past 30 years.⁴ Alarming, the prevalence is highest in the Middle East due to the region's escalating rates of obesity and metabolic syndrome.^{4,5} Oman serves as a prime example, with its unique demographics and growing metabolic health challenges highlighting the urgent need to address this silent epidemic. The situation demands immediate and comprehensive efforts, including collaboration and public education, to raise awareness and combat MAFLD at local, regional, and global levels.

Oman's youthful population (most under 40) makes early intervention critical.⁶ Over the past three decades, MAFLD prevalence has steadily increased, placing Oman among the countries most affected by this condition.⁷ According to the Global Burden of Disease studies, Oman ranked among the top four countries globally for age-standardized MAFLD

prevalence between 1990 and 2017.⁷ Alarming trends also indicate that Oman has one of the fastest-growing rates of MAFLD worldwide, particularly among children, adolescents, and young adults.⁸

Unfortunately, comprehensive studies on MAFLD in Oman are scarce; however, smaller investigations highlight the severity of the issue. For instance, nearly 68% of obese patients in one study were found to have MAFLD, with most individuals under the age of 50.⁹ Additionally, nearly 90% of individuals with diabetes and almost half of inactive hepatitis B virus carriers were diagnosed with MAFLD.^{10,11} Among young adults, over a quarter have MAFLD, reflecting the growing impact of obesity and poor metabolic health in the younger population.¹²

Other Gulf Cooperation Council nations are facing similar challenges. Saudi Arabia, for example, has one of the world's highest MAFLD rates, closely linked to increasing obesity and diabetes.¹³ Qatar and Bahrain also report concerning levels of metabolic syndrome, emphasizing the shared regional issues of unhealthy diets and sedentary lifestyles.^{14,15} Learning from the experiences of neighboring countries could help Oman develop effective, tailored solutions.

The rise in MAFLD prevalence in Oman is closely tied to increasing rates of metabolic syndrome. A nationwide study revealed that over two-thirds of Omani adults are overweight or obese, with 36% having high cholesterol, 33% hypertension, and 16% diabetes. Shockingly, 95% of participants had more than one metabolic risk factor.¹⁶ Obesity, particularly among women and children, has surged over the past decade, driven by sedentary lifestyles and calorie-rich diets.^{17,18} This sets the stage for worsening liver disease, including more severe forms like metabolic-associated steatohepatitis and liver fibrosis.

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MAFLD already accounts for approximately one-third of liver cirrhosis cases in Oman,¹⁹ and nearly half of Omani diabetes patients have significant liver fibrosis, increasing their risk of severe complications.¹¹ Additionally, almost half of inactive hepatitis B virus carriers in Oman have MAFLD, a factor associated with an elevated fibrosis risk.¹⁰

MAFLD has profound implications for Oman's healthcare system. Without effective intervention, the country is likely to face a surge in MAFLD-related liver complications, including cirrhosis and hepatocellular carcinoma (HCC). Between 1990 and 2017, Oman ranked among the top three countries with the fastest-growing rates of MAFLD-related cirrhosis.²⁰ Although MAFLD currently accounts for a small percentage of HCC cases, this is expected to rise as more patients progress to advanced stages of liver disease.²¹

Beyond liver disease, MAFLD is associated with a higher risk of cardiovascular complications and type 2 diabetes, adding further strain to Oman's healthcare resources.^{14,22} The economic burden of managing these complications is expected to escalate, necessitating immediate action. The cost of treating MAFLD-related complications—including liver cirrhosis and HCC—is substantial and will strain Oman's healthcare resources if not addressed promptly.

Despite the concerning trends, significant gaps remain in understanding and addressing MAFLD in Oman.²³ Further research is needed to fully understand the scope of the problem, particularly among children and young adults. Early detection methods, such as non-invasive screening, should be prioritized for high-risk groups, including individuals with obesity or diabetes. The absence of comprehensive prevention and treatment initiatives for MAFLD in Oman represents a significant deficiency requiring immediate attention.²³

Raising public awareness is critical, but it must be reinforced by evidence-based policies. Educational campaigns targeting healthcare providers and the public should be paired with nationally implemented interventions promoting healthier diets and physical activity, particularly among young people. Building on Oman's existing 50% SSB tax (implemented in 2020), Qatar's similar policy demonstrated a reduction in soft drink sales growth from 3.78% to 2.45% post-implementation, confirming such taxes curb sugar consumption.²⁴ Similarly, Bahrain's

comprehensive school-based nutrition programs, such as Ajyal Salima, which integrate hands-on nutrition education and family engagement, show measurable improvements in children's dietary habits.²⁵ These regionally validated approaches, including Oman's own fiscal measure, offer actionable pathways to amplify MAFLD prevention.

Additionally, healthcare providers require more training to effectively detect and manage MAFLD. Saudi Arabia's nationwide initiative to train primary care physicians on non-communicable diseases, including MAFLD, has already shown promising results.²⁶ Finally, fostering partnerships among policymakers, healthcare professionals, and community organizations could amplify these efforts. As demonstrated by Singapore's successful diabetes prevention programs, collaborative initiatives can effectively address complex health challenges such as MAFLD.²⁷

In conclusion, Oman stands at a critical juncture in addressing MAFLD. Immediate and coordinated action is essential to curb the disease's growing impact. By prioritizing prevention, early detection, and comprehensive care, Oman can protect the health and well-being of its population for generations to come.

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