



## Review Article

# Nudging for Public Health Improvement: A Review of Global Experiences and Applications in Diverse Cultures

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## Introduction

Nudging, a behavioral intervention technique that subtly influences choices without explicit coercion, has garnered substantial attention in public health. By designing choice architectures effectively, nudges encourage healthier behaviors without compromising individual freedom [1]. This essay examines the application of nudging in public health, emphasizing its potential in Arabic contexts and its role in improving health outcomes.

Nudges leverage psychological principles to guide individuals toward healthier choices. By addressing cognitive biases and employing insights from behavioral economics, policymakers and public health practitioners can design subtle interventions to shape behaviors positively [2]. The growing enthusiasm for nudging has led policymakers, researchers, healthcare providers, and insurance companies to adopt behavioral economics and psychology to encourage healthier lifestyles and habits.

## What is Nudging?

Thaler and Sunstein [1] define a nudge as “any aspect of the choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives.” Examples include warnings, reminders, and GPS alerts. Nudges preserve freedom of choice by providing information, making certain choices easier, or leveraging inertia. Schmidt and Engelen [2] outline three key features of nudging:

1. Cognitive Heuristics: Nudges often rely on fast, automatic thinking rather than reflective decision-making.
2. General Welfare: Nudges aim to promote overall welfare

or safety, not specific paternalistic decisions.

3. No Economic Incentives: Nudges exclude financial incentives like subsidies or taxes.

## Nudges in Healthcare

The rise of nudging has led policymakers, healthcare providers, and insurers to adopt behavioral economics and psychology to encourage healthier lifestyles. Examples include:

- Incentives: Framing rewards as losses rather than gains to motivate behavior change [3].
- Defaults: Presetting options (e.g., organ donation consent) while allowing opt-outs [1].
- Salience and Affect: Using emotional appeals, such as showing smokers videos of health consequences [3].
- Norms and Messengers: Leveraging public figures to promote healthy behaviors [3].
- Structuring environments to encourage healthier choices, like placing fruits prominently in cafeterias [1].
- Encouraging public pledges to quit smoking or lose weight [3].

## Arguments Supporting Nudges

1. Effectiveness: Nudges promote better health behaviors, environmental actions, and tax compliance at low cost and with ease of implementation [4].
2. Respect for Autonomy: Nudges do not restrict options or alter economic incentives, preserving freedom of choice [2].
3. Public Acceptance: Nudges align with goals people

endorse, making them more acceptable than traditional policies [1].

4. Inevitability of Choice Architecture: Since no choice presentation is neutral, nudges are justified in steering people toward beneficial outcomes [4].

### **Global Applications of Nudging in Health Services and Beyond**

Nudging, a concept popularized by Thaler and Sunstein, has gained significant traction among policymakers due to its ease of implementation, low cost, and potential for outsized benefits. Since the publication of *Nudge: Improving Decisions About Health, Wealth, and Happiness*, governments worldwide, including those in the U.K., U.S., Australia, Germany, the Netherlands, and Singapore, have established behavioral insights teams. These teams focus on encouraging behaviors that benefit the public good, such as timely tax payments, energy conservation, waste reduction, and healthier lifestyle choices. For instance, two nudge units within the U.S. government tested 349 nudges over four years, demonstrating the scalability and versatility of these interventions [5].

In the field of health policy, nudging has been applied across a wide range of domains, including preventive healthcare, service provision, long-term care, dementia prevention, community-based care systems, retirement planning, and technological innovation. Non-communicable diseases (NCDs), which account for a significant portion of global morbidity and mortality, are a primary target of nudge interventions. The World Health Organization (WHO) estimates that investing in cost-effective interventions to prevent and control NCDs in low- and middle-income countries could yield a seven-fold return by 2030. These “best-buy” interventions aim to reduce tobacco and alcohol use, promote healthy diets, increase physical activity, and improve the management of cardiovascular diseases, diabetes, and cancer. Given that behavior change is central to the success of these interventions, nudging has emerged as a powerful tool for addressing NCDs on a global scale.

### **Nudging in Dietary and Lifestyle Changes**

Nudging has also proven effective in promoting healthier dietary choices and lifestyle changes. In the United Kingdom, mandatory calorie labeling on restaurant menus has led to a significant reduction in calorie consumption, demonstrating how small changes in information presentation can influence consumer behavior [4]. Similarly, in the United States, opt-out systems for organ donation have dramatically increased donation rates, showcasing the power of default options in shaping health-related decisions [2].

### **Geographical Patterns in Nudge Deployment**

While nudging has been widely adopted in regions such as Western Europe, North America, and Australasia, its application remains uneven globally. Africa, despite being a hub for innovative public health interventions, has seen limited integration of behavioral insights into policy. Similarly, the Middle East, Eastern Europe, and South America have been slower to embrace nudge-based approaches. This disparity underscores the need for greater investment in behavioral science research and capacity-building in these regions to unlock the full potential of nudging in addressing global health challenges.

### **Future Potential of Nudging in Public Health**

The application of behavioral economics in public health holds immense promise for the future. As noted by Ara Darzi [7], the field is ripe with opportunities to improve health outcomes through innovative, low-cost interventions. By leveraging insights from behavioral science, policymakers can design more effective health policies, enhance service delivery, and empower individuals to make healthier choices. However, realizing this potential requires a concerted effort to integrate behavioral insights into policy frameworks and ensure their equitable application across diverse contexts.

### **Applying Nudging in Arabic Contexts: Cultural Considerations**

While the core principles of nudging are universal, their application in Arabic societies requires attention to cultural nuances and specific contexts to ensure acceptance and effectiveness. Understanding local customs, beliefs, and social norms is essential for the success of nudging interventions. Nudging strategies in Arabic contexts must be culturally sensitive and ethically sound, avoiding paternalistic approaches and respecting individual autonomy [1].

Incorporating cultural and religious values can enhance the relevance and acceptance of nudges in Arabic societies. For instance, using Islamic messages or references to religious principles can effectively promote healthier behaviors. Such culturally tailored interventions align with local norms and preferences, ensuring greater resonance with the target population [4]. From current experiences, cultural and religious beliefs play a significant role in health-related decisions and in shaping health behaviors. Nudges that are perceived as contradicting religious values, such as those involving financial incentives, may be viewed as unethical or inappropriate [8].

Platforms like Facebook, Instagram, and Twitter are widely used in Arabic countries. Nudges in the form of short videos, infographics, and testimonials from cancer survivors can raise awareness and

reduce fear or misconceptions about screening. Incorporating educational components, such as workshops or informational pamphlets, can bridge this gap [9].

### **Public Health Applications of Nudging in Arabic Societies**

Nudging can address a wide range of public health challenges in Arabic societies, including:

- **Healthy Eating:** Promoting nutritious food choices through menu labeling, calorie labeling on menus, and default healthy options in cafeterias can encourage individuals to make healthier food choices. Placing fruits and vegetables at eye level in grocery stores or using attractive packaging for healthy foods can nudge consumers toward nutritious choices. Such interventions can be particularly effective in urban areas with access to supermarkets [10].

- **Physical Activity:** Encouraging active lifestyles by designing walkable cities, providing accessible sports facilities, and incorporating gamification techniques.

- **Smoking Cessation:** Implementing smoke-free zones in public spaces, such as malls and parks, raising cigarette taxes, and using graphic health warnings on cigarette packs. Using graphic images and warnings on cigarette packs can deter smoking by highlighting its harmful effects. This approach has been effective in reducing smoking rates in several Arabic countries [11].

- **Mental Health:** Reducing stigma, improving mental health literacy, and increasing access to mental health services. Public awareness campaigns featuring influential figures can reduce stigma and encourage individuals to seek help. In Arabic societies, where mental health is often stigmatized, such interventions are crucial [12].

- **Reducing Anxiety and Stress:** Encouraging healthier coping mechanisms to alleviate psychological burdens [2].

- **Family Planning and Infertility Management:** Providing resources and information to empower informed decisions about reproductive health. Culturally sensitive information about family planning options can empower individuals to make informed reproductive health decisions. This is particularly important in Arabic societies, where cultural and religious factors may influence family planning choices [13].

### **Nudging in Cancer Screening and Prevention**

- One notable application of nudging is in cancer screening programs, where early detection significantly reduces morbidity and mortality rates. For example, Colorectal Cancer (CRC) screening uptake has been successfully increased through nudge strategies. In Saudi Arabia (KSA), research has shown that targeted nudges, such as using positive and selective language by family

physicians and nurses during patient interactions, can effectively encourage individuals to participate in CRC screening programs. Policymakers can leverage these findings to design evidence-based guidelines for CRC screening, ultimately improving public health outcomes [6].

- Similarly, in the United Kingdom, where cancer survival rates lag behind those of comparable countries, nudging has been employed to improve early diagnosis and screening participation. For instance, simplifying appointment scheduling, sending reminder messages, and framing screening as a default option have all been shown to increase uptake. These strategies highlight the potential of nudging to address systemic barriers to healthcare access and improve population health outcomes.

### **Ethical and Practical Challenges**

Despite its potential, the implementation of nudging faces several challenges. Interventions must be culturally appropriate, ethically transparent, and designed to avoid manipulation or coercion. The concept of libertarian paternalism, as described by Thaler and Sunstein [1], emphasizes guiding choices while preserving individual freedom. Furthermore, the long-term effectiveness of nudging strategies needs careful evaluation to ensure sustained health improvements [2]. For example, public health campaigns and nudging interventions require significant resources, which may be limited in low- and middle-income Arabic countries. This can restrict the scalability and sustainability of such initiatives [14].

In many Arabic countries, gender norms may influence healthcare-seeking behavior. Nudges targeting women for breast and cervical cancer screening should be delivered through female healthcare providers or community leaders to build trust and reduce stigma [15]. One of the challenges is the limited research on the effectiveness of nudging in Arabic countries, making it difficult to design evidence-based interventions. Most nudging strategies are derived from Western contexts, which may not be directly applicable [14]. Healthcare providers and policymakers may be resistant to adopting nudging strategies due to a lack of familiarity or skepticism about their effectiveness [16]. Many Arabic countries have fragmented healthcare systems with poor coordination between public and private sectors. This makes it difficult to implement nudges that require seamless integration across healthcare providers [16].

### **Conclusion**

Nudging, as popularized by Thaler and Sunstein [1], is a powerful tool for public health interventions worldwide. Its application in Arabic societies holds significant promise, provided strategies are culturally aligned and ethically sound. By leveraging psychological principles and incorporating cultural and religious values, public

health practitioners can design interventions that resonate with target populations. As the field continues to evolve, there is a growing need to expand the reach of nudge-based interventions, particularly in regions and populations where their potential remains untapped. By doing so, we can harness the power of behavioral science to create healthier, more sustainable societies.

The use of nudges is ethically justifiable for changing people's behavior provided the means pursued are transparent and democratic. The ethical evaluation of nudges should not be generalized and should be done on a case-by-case basis. It is by no means a magical toolbox for all problems, but certainly a key player in combating public health issues and will remain so in the future. Nudging requires a culturally sensitive, context-specific approach that considers the unique social, economic, and political landscapes of each region. Collaboration between policymakers, healthcare providers, and community leaders will be essential to ensure that nudging interventions are effective, ethical, and sustainable.

While nudging is not without its challenges, addressing ethical considerations and respecting individual autonomy can maximize its effectiveness. As this essay demonstrates, carefully designed choice architectures can promote healthier behaviors, helping policymakers and public health professionals create a healthier future for Arabic societies and beyond.

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### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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