

Coastal Tourism as a Health-Promoting System: 'Nature Six Doctors' Framework for Non-Pharmacological Interventions in Kenya

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Abstract

Coastal tourism is increasingly associated with health benefits from blue space exposure, yet Kenya's coast remains largely positioned as a leisure destination. This study develops the —Sun, Water, Air, Diet, Exercise, and Rest—framework to reposition coastal tourism as a non-pharmacological health intervention. Grounded in biophilia, salutogenesis, and EcoHealth, the study uses an integrative literature review of peer-reviewed and policy sources to construct a conceptual model linking coastal experiences to physical, mental, and social well-being. The framework incorporates moderating factors such as individual characteristics and environmental quality. It positions Kenya's coast as a holistic wellness destination and offers actionable insights for policy, planning, and development of evidence-based wellness tourism products.

Keywords: Blue-Health, Wellness-Tourism, Biophilia, Salutogenesis, Ecohealth, Kenya-Coast

Introduction

The global tourism industry is undergoing a paradigm shift, with travelers increasingly seeking health and wellness benefits from their experiences [1]. The wellness tourism market reached US\$830 billion in 2023, up from \$639 billion in 2017, reflecting rising demand for travel that enhances physical and mental well-being [2,3]. Unlike reactive, illness-oriented medical tourism, wellness tourism is proactive, emphasizing stress reduction, fitness, nutrition, and non-invasive interventions. This shift is evident in consumer behavior, with adults prioritizing health and well-being in travel decisions [4]. Consequently, destinations are repackaging natural and cultural assets into health-oriented offerings.

Kenya's coastal tourism, traditionally framed under the "Sun, Sand, and Sea" paradigm, has focused on leisure and recreation, with safari and beach products dominating the national portfolio [5]. However, emerging global trends create both an opportunity and an imperative to reposition coastal tourism toward preventive health and wellness. The National Tourism Strategy (2025–2030) identifies wellness tourism as a priority, supported by Kenya's diverse coastal ecosystems and rich cultural heritage. According to Spa and Wellness Association Kenya (SWAK), early initiatives in destinations such as Watamu and Diani—featuring yoga retreats, thalassotherapy, and blue therapy—demonstrate growing market potential.

Despite these advantages, a critical gap persists. Kenya lacks a structured conceptual framework linking coastal tourism experiences to measurable health outcomes, with existing research largely focused on economic indicators such as visitor numbers, revenue, and employment [6]. This limits recognition of multidimensional wellness benefits, including mental restoration, stress reduction, and physical fitness, thereby constraining innovation in product development and policy integration. In contrast, international "blue space" research consistently demonstrates positive health outcomes associated with coastal environments, including improved general health among populations living near or frequently visiting coastlines [7,8].

This study addresses the gap by proposing the "Nature's Six Doctors" (SWADER) framework—Sunshine, Water, Air, Diet,

Exercise, and Rest—as a theory-driven model positioning coastal tourism as a source of non-pharmacological health interventions. The framework conceptualizes routine coastal activities (e.g., swimming, sun exposure, sea air inhalation, local dietary experiences, and rest) as pathways to measurable health benefits. This reframing elevates coastal tourism from leisure to preventive healthcare, with implications for destination branding, wellness infrastructure investment, and cross-sector collaboration between tourism and health systems.

The study proceeds by outlining the theoretical foundations of the SWADER framework, followed by an integrative literature review methodology. It then presents the conceptual model, detailing the contribution of each component within Kenya's coastal context. The discussion situates these findings within international evidence while highlighting Kenya's comparative advantages. The paper concludes with contributions, limitations, and policy-oriented recommendations aimed at repositioning coastal tourism as a health-promoting system.

Theoretical Background

Human-Nature Interaction and Health: Biophilia and Restoration Theories

Human well-being is fundamentally linked to nature through evolutionary and psychological mechanisms. The Biophilia hypothesis, advanced by Fromm (1973) and Wilson (1984), posits an innate human affinity for natural environments, shaped by long-term dependence on ecological systems [9]. This affinity underpins observed psychological benefits, including improved mood, reduced stress, and enhanced cognitive functioning [10,11]. Empirical evidence shows that even brief exposure to natural settings—such as coastal or green environments—lowers cortisol levels, restores attention, and enhances emotional well-being [12]. In coastal contexts, the “Blue Mind” concept further emphasizes the calming and restorative effects of proximity to water, where ocean views and sounds promote relaxation and creativity [13,14].

Complementing biophilia, environmental psychology provides explanatory frameworks for these effects. Attention Restoration Theory (ART) argues that natural environments engage involuntary attention through “soft fascination,” allowing cognitive recovery from mental fatigue. Stress Reduction Theory (SRT) similarly demonstrates that natural stimuli rapidly reduce physiological stress, lowering blood pressure and muscle tension. Coastal environments are particularly effective, combining expansive visual fields and soothing sensory inputs. Together, these frameworks confirm that both active and passive interactions with nature generate measurable mental and physiological health benefits [15].

Salutogenesis: A Health-Promoting Orientation

Salutogenesis, as advanced by Antonovsky (1987), shifts focus from disease causation to the origins of health, emphasizing resources and behaviors that promote well-being even under stress [16]. Within this framework, natural environments function as health-promoting settings. Coastal “blue spaces” in particular demonstrate consistent salutogenic effects, with evidence linking exposure to aquatic environments to improved mental and physical health outcomes. A systematic review confirms that such environments enhance well-being by encouraging physical activity, enabling stress recovery, and fostering social cohesion—mechanisms aligned with core salutogenic principles.

Central to salutogenesis is the “Sense of Coherence,” comprising comprehensibility, manageability, and meaningfulness. Nature-based tourism strengthens these dimensions through predictable natural rhythms, restorative opportunities (e.g., fresh air, exercise), and meaningful engagement with landscapes and cultural heritage. Wellness tourism thus operationalizes salutogenesis by generating health, not merely preventing illness. Within this logic, SWADER elements—sunshine, air, water, diet, exercise, and rest—act as practical salutogenic resources that enhance resilience and overall well-being.

Empirical evidence further shows that access to coastal environments correlates with better self-rated health across populations. However, benefits depend on equitable access, highlighting the importance of inclusive planning [7].

EcoHealth and Blue Spaces: Integrating Ecosystems And Human Well-Being

The EcoHealth approach provides an integrated framework linking ecosystem integrity and human health, emphasizing that healthy ecosystems are foundational to well-being. Coastal systems—coral reefs, mangroves, and beaches—deliver critical ecosystem services, including clean air and water, climate regulation, and cultural and recreational benefits. High environmental quality reduces health risks (e.g., respiratory and waterborne diseases), while intact ecosystems enhance resilience by protecting shorelines and sustaining nutrition through fisheries. EcoHealth thus positions coastal tourism within a positive feedback loop: ecosystem conservation supports human health, and health-enhancing experiences incentivize environmental stewardship.

Applied to Kenya's coast, this approach prioritizes sustainable, nature-based tourism aligned with One Health and Planetary Health principles. Interventions such as improved water quality, ecosystem restoration, and conservation of coastal forests can simultaneously deliver public health and tourism value. EcoHealth also emphasizes community participation and cross-sector collaboration, enabling integration of indigenous knowledge—such as coastal healing practices—into wellness tourism. This supports a regenerative model where tourism contributes to conservation while enhancing long-term health benefits.

Overall, EcoHealth complements biophilia, restoration, and salutogenesis in framing nature-based tourism as a health

system. These foundations inform the SWADER framework, explaining how coastal environments generate measurable well-being outcomes.

Methodology

This study employed a qualitative, exploratory design grounded in conceptual synthesis to develop the SWADER framework. No primary data were collected; instead, the study relied on an in-depth, systematic desk-based review of interdisciplinary literature spanning tourism studies, environmental psychology, public health, and environmental science. A constructivist paradigm guided the process, positioning the framework as an interpretive and theory-building output rather than an empirically tested model, consistent with established approaches to conceptual development [17].

A structured literature search was conducted across major academic databases, including Scopus, Web of Science, and Google Scholar, using combinations of keywords such as “coastal tourism,” “wellness tourism,” “blue spaces,” “nature-based health,” and “biophilia.” Priority was given to peer-reviewed articles published in Scopus-indexed journals to ensure academic rigor and credibility. Grey literature—including reports from the World Health Organization (WHO), Global Wellness Institute (GWI), and Kenyan policy frameworks (e.g., Tourism Strategy 2025–2030)—was selectively incorporated to provide contextual and policy relevance. In total, over 60 sources were reviewed, with a strong emphasis on high-quality systematic reviews, meta-analyses, and cross-country empirical studies [7,15].

The analysis applied thematic coding aligned with the six SWADER elements—sunshine, water, air, diet, exercise, and rest—linking each to established health outcomes and coastal tourism contexts. A conceptual model was iteratively developed, mapping relationships between coastal tourism exposures, health outcomes, and moderating variables (e.g., demographics, environmental quality). Causal pathways and feedback mechanisms were inferred from convergent evidence and refined to ensure theoretical coherence and empirical plausibility.

The resulting framework is conceptual, generating testable propositions for future empirical validation while ensuring strong scientific grounding and contextual relevance to Kenya’s coastal tourism system.

Results/Findings
SWADER Conceptual Framework Overview

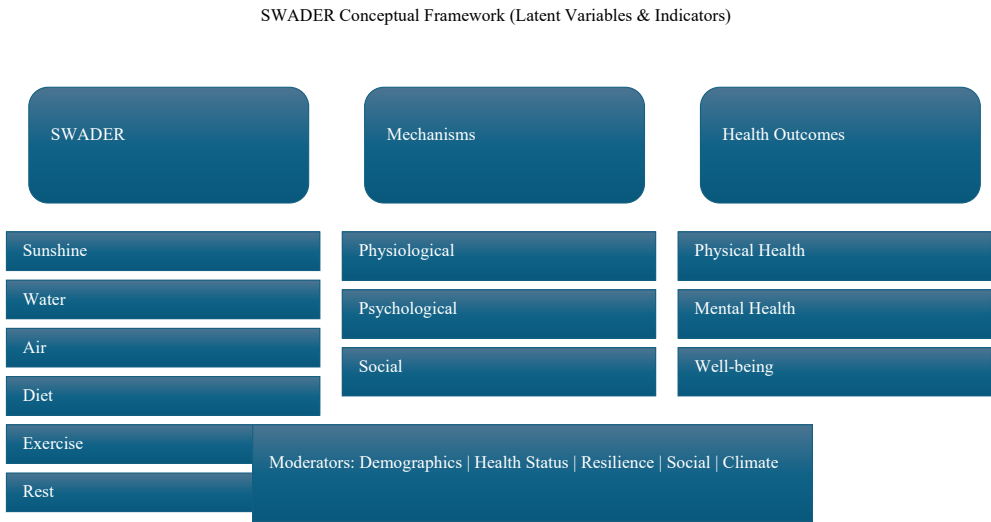


Figure 1: Swader Conceptual Framework Linking Coastal Tourism Experiences To Health Outcomes Through “Nature’s Six Doctors” (SWADER). Coastal And Marine Tourism Exposes Visitors To Sunshine, Water, Fresh Air, A Nutritious Diet, Physical Activity, And Rest, Which Are Hypothesized To Improve Health And Well-Being (Mechanisms). Moderators (e.g., Demographics, Prior Health, Psychological Resilience, Environmental Quality) May Mediate Or Moderate The Strength Of This Relationship (Source: Author).

The SWADER framework (Figure: 1) conceptualizes coastal tourism as a health intervention composed of six synergistic natural elements: Sunshine, Water, Air, Diet, Exercise, and Rest. Engagement in coastal activities—from beach relaxation to ocean-based recreation—exposes individuals to these “Nature’s Six Doctors,” generating multidimensional health outcomes. These include physical benefits (e.g., improved vitamin D levels, cardiovascular fitness), psychological gains (e.g., stress reduction, mood enhancement), and social well-being (e.g., bonding and spiritual renewal). However, outcomes are moderated by intervening factors such as demographics, pre-existing health conditions, environmental quality, and social context, which shape both the magnitude and distribution of benefits.

Sunshine – Natural Light and Health

The framework is inherently non-linear and integrative, recognizing that SWADER elements operate cumulatively rather

than in isolation. Single activities often deliver multiple exposures simultaneously—for example, ocean swimming combines exercise, sunlight, water immersion, fresh air, and relaxation—producing compounded physiological and psychological effects. Accordingly, the model posits causal linkages between SWADER exposure and health outcomes. Increased sunlight and clean air are associated with improved vitamin D status and respiratory health, while physical activity enhances cardiovascular and metabolic function [18,19]. Psychological restoration emerges from the combined effects of scenic environments, relaxation, and detachment from routine. These propositions are supported by global evidence linking blue space exposure to increased physical activity and improved mental well-being.

Importantly, the SWADER model does not assume automatic therapeutic outcomes but positions coastal tourism as an enabling environment for health-promoting behaviors and exposures.

Sunshine, a defining feature of Kenya's coast, exemplifies these dynamics. It supports physiological health through vitamin D synthesis, essential for bone health, immunity, and disease prevention, while also enhancing mood via serotonin regulation [18]. With 8–12 hours of daily sunshine, coastal regions such as Mombasa provide optimal conditions for these benefits. Moderate exposure (10–30 minutes daily) is typically sufficient, particularly for visitors from low-sunlight regions. Psychologically, sunlight contributes to improved well-being and can alleviate conditions such as seasonal affective disorder. However, benefits require balanced exposure, necessitating sun safety measures to mitigate risks such as heat stress and overexposure.

Water – Ocean Therapy and Blue Space Benefits

Water is a central therapeutic element in coastal tourism, historically recognized through thalassotherapy—the use of seawater, marine climate, and ocean-derived products for health benefits. Kenya's coastline, with its warm waters, coral reefs, mangroves, and beaches, provides an ideal blue space environment. Seawater immersion supports circulation, skin health, and relaxation, while coastal resorts increasingly incorporate marine-based treatments such as seaweed wraps and salt therapies, reflecting established global practices [11,20].

Beyond structured therapies, proximity to the ocean delivers significant psychological benefits. Empirical evidence shows that blue spaces enhance mood, reduce stress, and improve attention, often outperforming urban and, in some cases, green environments. Kenya's warm ocean temperatures (25–29°C) facilitate prolonged engagement through swimming and snorkeling, combining physical activity with restorative effects. Underwater environments further induce meditative states through reduced sensory noise, while encounters with marine life contribute to emotional well-being and a sense of awe [20,21].

Water-based activities also foster social interaction—family recreation, group excursions, and shared experiences—which enhance mental health through bonding and positive affect. Additionally, natural ocean sounds stimulate parasympathetic responses, promoting relaxation. Within the SWADER framework, the ocean functions as a multisensory therapeutic system, integrating physical, psychological, and social benefits.

Air – Fresh Coastal Air Quality

Coastal environments are widely associated with improved air quality, contributing to better respiratory and cardiovascular health. Clean air—characterized by higher oxygen levels and lower particulate matter—enhances oxygenation and reduces lung irritation. According to World Health Organisation (WHO) guidelines, optimal health requires minimal exposure to PM_{2.5} ($\leq 5 \mu\text{g}/\text{m}^3$ annually) [22]. In Kenya's coastal regions, ocean breezes disperse pollutants, resulting in generally low particulate concentrations compared to urban areas. This creates conditions conducive to healthier breathing and improved circulatory function.

Sea air may offer additional benefits. It is often rich in negative ions, which some studies associate with improved mood and serotonin regulation, though evidence remains emergent. Historically, maritime climates were prescribed for respiratory conditions, reflecting long-standing recognition of their therapeutic value. Within the SWADER framework, "Air" encompasses both environmental quality and the act of breathing in restorative settings. Coastal air is typically humid and moderate, reducing irritation for individuals with asthma or allergies [23–26].

Kenya's coast further enhances this effect through natural scents from ocean aerosols and coastal vegetation, contributing to relaxation and potential aromatherapeutic benefits. Activities such as beachfront yoga and meditation leverage clean air and mindful breathing to promote both mental calm and physical health. Additionally, good air quality supports outdoor physical activity without exposure to pollutants.

Diet – Coastal Nutrition and Gastronomy

Diet is a key component of the SWADER framework, reflecting the role of nutritious food in enhancing health during travel. Kenya's coastal cuisine—rich in seafood, tropical fruits, and coconut-based dishes—aligns with principles of a balanced diet. Foods such as fish provide lean protein and omega-3 fatty acids for cardiovascular and cognitive health, while fruits and plant-based ingredients supply essential vitamins, antioxidants, and fiber [27,28].

Compared to highly processed diets, coastal food experiences tend to be fresher and less refined, supporting improved

metabolic health. The warm climate also encourages lighter meals and higher hydration. Additionally, traditional spices and herbal ingredients (e.g., ginger, turmeric) offer anti-inflammatory and digestive benefits, reinforcing the concept of “food as medicine” [29,30]. Beyond physiological effects, diet contributes to psychological and social well-being. Shared meals, culinary exploration, and cultural immersion enhance travel satisfaction and social bonding. Wellness tourism increasingly integrates nutrition through curated menus and educational experiences, such as cooking classes or farm visits. In Kenya, this could extend to linking biodiversity conservation with nutrition, drawing on local food systems and indigenous knowledge.

The framework assumes that improved dietary patterns during travel support energy balance, recovery, and overall well-being. However, outcomes depend on behavioral choices, as tourism can also encourage overindulgence. A wellness-oriented approach would prioritize healthy local options—such as fresh seafood, fruits, and coconut water—while minimizing processed foods.

Exercise – Active and Passive Fitness Opportunities

Exercise is a central SWADER component, recognizing physical activity as fundamental to physical and mental health. Coastal destinations naturally enable both active (e.g., swimming, surfing, beach sports) and low-impact activities (e.g., walking, stretching), making movement accessible and enjoyable [31]. These activities improve cardiovascular fitness, strength, flexibility, and mental well-being through mechanisms such as endorphin release and anxiety reduction [32].

Kenya’s coast functions as an open-air exercise environment. Beaches provide natural resistance for walking and running, increasing energy expenditure, while scenic settings enhance motivation and enjoyment. Organized activities—such as beach yoga, aquarobics, and water sports—further promote engagement. Even informal or cultural activities, including beach games or festivals, contribute to physical activity.

Within the framework, exercise delivers both direct health benefits and indirect psychological gains. Increased activity during holidays often exceeds routine levels, as recreation replaces structured exercise. Evidence shows that coastal and nature settings are associated with higher levels of moderate-to-vigorous activity, yielding measurable outcomes such as improved cardiovascular function and metabolic health.

The framework also incorporates both structured and incidental movement, including participatory tourism (e.g., fishing, sailing) and light activities like walking through heritage sites. By framing exercise as leisure rather than obligation, coastal tourism encourages broader participation, including among sedentary individuals.

Rest and Relaxation – Mental Restoration

Rest, within the SWADER framework, extends beyond sleep to include relaxation, stress reduction, and mental recovery. Coastal environments inherently promote these outcomes through calming stimuli such as rhythmic waves, expansive ocean views, and slower-paced settings. Visitors to Kenya’s coast often experience a shift away from routine pressures, enabling physiological recovery, including reduced cortisol levels, lower blood pressure, and improved immune function [10].

Empirical evidence supports the restorative effects of blue spaces. Studies indicate that coastal environments consistently enhance feelings of calm, freedom, and psychological refreshment, often exceeding the restorative impact of green spaces [33]. Rest functions both as a direct outcome and as a facilitator of broader health benefits, enabling recovery and regeneration. Sleep quality, in particular, improves due to natural light exposure, increased daytime activity, and reduced noise, supporting circadian regulation.

Coastal tourism also fosters social and emotional restoration. Shared relaxation experiences strengthen social bonds, while the hospitable and low-stress cultural environment enhances psychological safety. Structured wellness offerings (e.g., spas, meditation, digital detox programs) further reinforce these benefits.

Summary of Findings: Kenya’s Coast as a Wellness Hub

The findings indicate that Kenya’s coastal tourism has strong potential to evolve into a holistic wellness hub. All SWADER elements are naturally embedded: abundant sunshine, warm ocean waters, and clean air; nutritious coastal cuisine; diverse opportunities for physical activity; and an environment conducive to rest. Individually, these elements provide established health benefits; collectively, they address physical, mental, and social dimensions of well-being.

Comparative international evidence supports this positioning. Similar to Mediterranean health tourism models, Kenya’s coast can leverage its natural assets alongside distinctive cultural practices [Click or tap here to enter text.](#) [34]. Empirical studies linking coastal proximity to improved health reinforce the transferability of “blue health” benefits. Additionally, the growing global demand for nature-based, non-pharmacological wellness aligns with the SWADER framework, positioning coastal tourism as both a market opportunity and a contributor to public health outcomes.

The analysis also highlights the importance of intervening factors. Health outcomes vary by demographics, baseline

health, and socio-environmental conditions, suggesting the need for tailored wellness offerings (e.g., low-impact programs for seniors, stress-reduction packages for professionals).

Discussion

Positioning Kenya's Coastal Tourism in the Global "Blue Health" Discourse

The findings position Kenya's coast within the global "blue health" movement, which recognizes aquatic environments as therapeutic landscapes that enhance mental and physical well-being [7]. Through the SWADER framework, Kenya's coastal resources—sun, sea, and scenic environments—align with established wellness destinations such as Bali and the Mediterranean [34]. However, Kenya holds a competitive advantage in its rich cultural heritage and biodiversity, which can be integrated into wellness offerings (e.g., Swahili healing practices, sacred forest experiences) to enhance authenticity.

International experience shows that natural assets alone are insufficient; effective packaging and management are critical. Successful destinations have developed structured wellness products (e.g., retreats, detox programs), combining scientific evidence with compelling narratives [35]. The SWADER framework provides a credible foundation for such positioning, enabling Kenya to market coastal tourism as both restorative and evidence-based.

A key consideration is equity. While coastal access improves health outcomes broadly, benefits are not automatically inclusive [7]. Maximizing impact requires deliberate strategies to ensure accessibility for local communities and domestic tourists. Integrating tourism with public health initiatives—such as community access to wellness spaces or nature-based prescriptions—can enhance inclusivity [36].

Theoretical Contributions and Alignment

The integration of Biophilia, Salutogenesis, and EcoHealth into tourism constitutes a key theoretical contribution, linking health promotion directly to tourism planning. The framework operationalizes salutogenesis by reframing tourism as a set of health-promoting experiences that enhance resilience and well-being, rather than mere consumption. It also extends biophilia into practice, suggesting that travel to natural environments fulfills innate human needs for nature connection, yielding psychological benefits. EcoHealth further broadens the model by embedding environmental sustainability within the tourism–health relationship.

A central implication is the repositioning of coastal tourism as preventive rather than curative. The framework aligns with wellness tourism's proactive focus on maintaining health, raising the possibility that structured tourism experiences could contribute to long-term health improvements. Emerging evidence—such as links between regular vacations and reduced metabolic risk or improved mental health—supports this proposition, though longitudinal research is needed to validate sustained impacts.

The framework also reinforces established environmental psychology theories. It operationalizes Attention Restoration Theory and Stress Reduction Theory by demonstrating how coastal environments provide conditions for cognitive recovery and stress relief. This offers practical implications for destination design, including optimizing restorative features and minimizing environmental stressors to enhance wellness outcomes.

Practical Implications for Destination Development and Policy

To leverage these insights, Kenya requires a strategic shift in destination development, marketing, and policy integration. Public–private collaboration can drive wellness-oriented products such as integrated coastal resorts (combining exercise, nutrition, and spa therapies), nature therapy trails, and cultural wellness festivals rooted in local traditions. Environmental quality is foundational. Health benefits depend on clean, well-managed ecosystems; polluted or overcrowded environments undermine outcomes. Strengthening coastal conservation, pollution control, and climate-aligned policies ensures that ecosystems function as health-supporting assets. This aligns with Kenya's Blue Economy and climate commitments, positioning coastal ecosystems as part of national health infrastructure.

Cross-sector collaboration is critical. Integrating tourism and health policy—such as establishing "Blue Health Zones"—can institutionalize standards for environmental quality, safety, and wellness programming. These zones could serve both tourists and local communities while generating data to validate health impacts and refine interventions.

The hospitality sector must also adapt by building capacity in wellness delivery, from specialized services to integrating health narratives into visitor experiences. Marketing should emphasize evidence-based outcomes alongside experiences, ensuring credibility and avoiding superficial "wellness washing."

Potential Challenges and Mitigating Factors

Despite strong prospects, several challenges require attention. Seasonality and climate change pose risks: monsoon periods may reduce visitation and sunshine, while climate impacts on coral reefs and extreme weather could undermine environmental quality and visitor experience. Mitigation strategies include year-round wellness programming (e.g., indoor facilities) and climate adaptation measures such as reef restoration and early warning systems.

Measurement of success is another constraint. Unlike conventional tourism metrics, wellness outcomes are less tangible. Developing evidence through partnerships with researchers—using surveys or biometric indicators—can validate health impacts and strengthen market positioning. Certification and accreditation systems will also be important to assure quality and credibility in wellness offerings.

Maintaining balance with traditional tourism products is essential. Rather than replacing safari tourism, wellness can complement it through integrated itineraries, enhancing diversification while preserving core market strengths. This approach may also promote longer stays and repeat visitation, aligning with sustainable tourism objectives.

Contributions

Theoretical Contributions

This study contributes theoretically at the intersection of tourism and public health in three key ways. First, it introduces the SWADER framework, a structured model linking nature-based tourism experiences to health outcomes. By synthesizing concepts from wellness tourism, biophilia, and salutogenesis, the framework operationalizes health promotion within tourism planning. It also provides a taxonomy of wellness elements (sun, water, air, diet, exercise, rest), enabling the development of measurable indicators—such as exposure levels and activity intensity—linked to well-being outcomes. Second, the study advances “blue space” literature by situating it within a developing country context. Most existing research is concentrated in Western settings; by focusing on Kenya, the study highlights how coastal health benefits manifest in tropical and culturally distinct environments. This opens avenues for cross-cultural comparison and deeper analysis of how environmental and cultural factors interact in shaping wellness outcomes.

Finally, the study reframes tourism destinations as health resources rather than mere attractions. This perspective strengthens sustainable tourism theory by linking natural capital to human well-being, thereby reinforcing conservation incentives. It also expands the concept of tourism value co-creation, demonstrating that tourism can generate public health benefits alongside economic value, aligning with broader sustainability and regenerative tourism goals.

Practical Contributions

From a practical perspective, the SWADER framework provides a structured blueprint for destination managers and policy-makers to design and enhance wellness tourism. It functions as a checklist across six domains—sunshine, water, air, diet, exercise, and rest—ensuring a holistic approach to visitor well-being. This supports both the development of new wellness products and the upgrading of existing coastal resorts beyond narrow offerings such as spas.

For policy-makers and marketers, the framework enables repositioning Kenya’s coast as a destination for healing and renewal, attracting high-value wellness tourists and supporting diversification goals. It strengthens evidence-based branding and can be integrated into tourism education and strategy.

The framework also has public health relevance, positioning tourism environments as extensions of health promotion systems. This opens opportunities for cross-sector initiatives, such as “blue health” programs or nature-based prescriptions, where coastal infrastructure contributes to disease prevention and well-being.

At the community level, SWADER highlights opportunities for local enterprise development, including culturally grounded wellness services (e.g., traditional activities, nutrition experiences, nature-based practices). These can generate income while preserving indigenous knowledge.

Limitations

This study has several limitations. First, it is entirely conceptual and literature-based, with no primary empirical validation. As a result, the causal relationships and relative importance of SWADER components remain hypothetical. Validation through field data—such as surveys or physiological measurements—is necessary. There is also potential confirmation bias, as the review emphasizes positive outcomes while underrepresenting negative or neutral findings.

Second, generalizability is constrained. Much of the supporting evidence is drawn from high-income contexts, which may not fully reflect Kenya’s diverse tourist profiles or cultural dynamics. While the framework assumes universal responses to nature, cultural variations in wellness practices may influence outcomes.

Third, measurement challenges persist. Quantifying exposure to SWADER elements and isolating their individual effects is complex, as these factors often interact (e.g., sunshine and exercise). The framework separates them conceptually, but empirical distinction may be difficult.

Fourth, the analysis treats Kenya’s coast as homogeneous, overlooking regional and seasonal variations across different destinations. It also focuses primarily on leisure tourists, excluding residents or long-term visitors.

Finally, the model does not explicitly account for other determinants of health outcomes, such as service quality, safety, or individual behaviors, which may significantly influence results.

Future Research

Future research should prioritize empirical validation of the SWADER framework by measuring health outcomes among coastal tourists. Mixed-method approaches—combining surveys, interviews, and biometrics (e.g., cortisol, blood pressure)—can assess changes in stress, mood, and physical health, including post-visit persistence. Comparative studies between wellness-focused and conventional tourism can isolate added value.

Further work is needed to determine the relative influence of each SWADER component and potential synergies. Techniques such as structural equation modeling can assess how different elements contribute to health outcomes and inform investment priorities.

Research on intervening variables should examine how factors such as age, health status, and cultural context shape responses to coastal experiences, enabling more personalized wellness offerings. Ethnographic studies can deepen understanding of local engagement with coastal environments.

Community-level impacts also require investigation, particularly how wellness tourism affects local health, equity, and resource access, aligning with EcoHealth principles.

Comparative and longitudinal studies across destinations can strengthen global relevance and assess the cumulative benefits of repeated exposure. Economic and policy research should evaluate demand, willingness-to-pay, and integration of health metrics into tourism performance indicators.

Finally, innovation-focused research can explore technology integration and climate resilience, ensuring the long-term viability of coastal wellness tourism.

Conclusion

This study reconceptualizes Kenya's coastal tourism as a provider of non-pharmacological health interventions through the "Nature's Six Doctors (SWADER)" framework—sunshine, water, air, diet, exercise, and rest. Drawing on interdisciplinary literature, it demonstrates how these natural elements, abundant in coastal settings, function as integrated therapies that enhance physical, mental, and social well-being. The framework shifts tourism beyond leisure and economic value, positioning it at the intersection of public health, sustainability, and experiential development.

The analysis reveals Kenya's coast as a holistic wellness landscape. Its climatic conditions, ecological assets, and cultural richness collectively enable restorative experiences—supporting physical health through activity and nutrition, and mental health through relaxation and nature connection. In this sense, coastal tourism can be reframed as preventive healthcare, strengthening Kenya's tourism value proposition and aligning with global wellness trends.

To operationalize this potential, the study emphasizes integrating wellness into tourism planning, strengthening cross-sector collaboration, and safeguarding environmental quality. Initiatives such as "Blue Health Zones" and evidence-based wellness programming can institutionalize this approach. Crucially, the framework reinforces that environmental sustainability underpins health outcomes, linking tourism development with conservation and broader Sustainable Development Goals, including health, economic growth, and marine protection.

In conclusion, the study presents both a conceptual model and a strategic direction. It positions Kenya's coast as a destination for renewal and healing, capable of meeting growing global demand for wellness-oriented travel. Realizing this vision requires coordinated action, continued research, and a commitment to aligning tourism development with health and environmental resilience.

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