



BRIDGING MINDS

A MULTIDISCIPLINARY APPROACH TO INNOVATION AND INQUIRY

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Prof. Vibhor Airen

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EXCLUSIVE PARTNER



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by: Dr. Poornima Jogi, Anand Chauhan, Fasi Ur Rehman, Dr. Rupam Mukherjee, Dr. Mallanna. I. Biradar, Dr. Aarti Sharma, Dr. Vimalkumar Mistry, Prof. Vibhor Airen

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EXPANDING THE BOUNDARIES OF HEALTH: A MULTIDISCIPLINARY EXPLORATION OF PHYSICAL, MENTAL, SOCIAL, AND ENVIRONMENTAL WELL-BEING BEYOND CONVENTIONAL MEDICINE

Dr. Ananthaneni Madhuri ¹

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Abstract

Health is often seen as just the absence of illness, but in today's world it is understood as something much broader. While traditional medicine focuses mainly on diagnosing and treating physical disease, this chapter explores how health is influenced by many other factors such as mental well being, social relationship, economic condition, environmental quality, access to technology, and cultural practice. By taking a multidisciplinary approach, we can better understand the full picture of what it means to be healthy. This chapter introduces an integrated model of wellbeing that combines insight from psychology, sociology, economics, environmental science, and digital innovation. Through real life example such as community mental health program, urban planning for public wellness, and school-based nutrition initiative we show how working across discipline can lead to fairer, more effective, and more lasting health outcome. The chapter also discusses the importance of training health professional to think beyond medicine, shaping policy that includes all aspect of well being, and encouraging research that connects different field. This broader view of health helps us build a healthier and more inclusive society.

Keywords: Health, Traditional medicine, Multidisciplinary approach, Inclusive society.

Introduction: Rethinking Health in a Changing World

Health is a complex and dynamic concept. Traditionally viewed through the lens of biomedicine, health was primarily defined as the absence of disease or infirmity. However, with changing lifestyles, increasing life expectancy, and a rise in non-communicable diseases, this narrow view is no longer sufficient. The World Health Organization's definition of health as a "state of complete physical, mental, and social well-being" underscores the need for a more expansive understanding.

Modern health challenges, such as stress, depression, lifestyle disorders, pandemics, environmental degradation, and socioeconomic disparities, demand collaborative solutions. These issues do not emerge solely from biological causes but from a complex web of factors, including psychological resilience, social cohesion, economic inequality, and environmental sustainability. Addressing them requires insights from multiple disciplines working in harmony.

This chapter explores health beyond the clinic and the hospital. It examines how psychology, sociology, economics, environmental science, and technology intersect with medicine to create a holistic model of well-being. The focus is not only on curing disease but on cultivating environments and systems that promote thriving individuals and communities.

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1. The Limits of the Biomedical Model

The biomedical model has achieved great success in treating acute medical conditions, advancing surgical procedures, and developing pharmaceutical interventions. Its foundation in scientific methods and biological mechanisms brought about significant public health victories, including the eradication of smallpox and control of infectious diseases.

Despite these advances, this model has its limitations. It tends to isolate the physical body from its social, psychological, and environmental context. Mental health disorders, chronic lifestyle-related illnesses, and social determinants of health are often sidelined or oversimplified in a strictly biomedical approach. It focuses on symptoms rather than root causes, and interventions often occur late in the disease process rather than preventing illness altogether.

Furthermore, the biomedical model underestimates patient agency. It positions the healthcare provider as the expert and the patient as a passive recipient. This limits opportunities for patient empowerment, community engagement, and culturally sensitive care. A shift toward a broader, interdisciplinary model can address these gaps by bringing attention to the underlying causes of health and illness.

2. Psychology and Mental Health: The Inner Dimension

Mental health is an indispensable component of overall well-being. Psychological states influence behaviour, decision-making, stress responses, and physical health. Disorders such as anxiety, depression, and post-traumatic stress disorder are often invisible but have profound effects on an individual's life and society at large.

Psychological disciplines offer tools to understand and promote emotional resilience, coping mechanisms, and positive behaviour change. Interventions like cognitive-behavioural therapy, positive psychology practices, mindfulness, and trauma-informed care can prevent the escalation of mental health issues and improve quality of life.

Importantly, mental health must be destigmatized. Cultural taboos, lack of awareness, and limited access to professional support delay help-seeking behaviour. A multidisciplinary approach integrates mental health into general healthcare systems, community-based care, and educational programs, creating a network of support that is accessible and inclusive.

3. Sociology and Community: The Role of Society in Health

Sociology draws attention to the social structures that influence health. Elements such as income inequality, education levels, cultural practices, gender roles, and institutional access significantly impact health outcomes. These social determinants often explain why two individuals with similar biological risks may experience vastly different health trajectories.

For example, people in underprivileged communities may suffer more from preventable diseases due to poor housing, unsafe workplaces, or limited access to nutritious food. Social isolation, discrimination, and lack of community support can also harm mental and emotional well-being.

Understanding these social contexts enables more effective health interventions. Community health workers, peer support programs, and participatory policy-making ensure that solutions are tailored to the cultural and social realities of the population. A sociological lens enables healthcare to move beyond the clinic into the community, where real-life health challenges unfold.

4. Environmental Health: Living in Harmony with Nature

Environmental health examines the relationship between people and their physical surroundings. Factors such as air and water quality, sanitation, climate change, and urban design have direct and indirect effects on public health. With increasing environmental degradation, new health risks have emerged, ranging from respiratory illness due to pollution to food insecurity driven by climate instability.

Green infrastructure, such as parks, tree cover, and sustainable transportation, promotes physical activity, reduces stress, and improves air quality. Clean water, waste management, and energy efficient housing can drastically improve outcomes in vulnerable populations. Environmental health is inherently multidisciplinary, involving collaboration between public health professionals, urban planners, ecologists, and policy makers. The health of individuals is inseparable from the health of the planet, a truth increasingly recognized in global health frameworks.

5. Economics and Access: Bridging Inequality in Health

Economic stability determines access to healthcare, nutritious food, education, and secure housing—all of which are foundational to health. In many parts of the world, health outcomes correlate strongly with income level. Those in poverty are more likely to suffer from both communicable and non-communicable diseases and have shorter life expectancies.

Health economics studies how resources are allocated in the health sector and how policies can improve efficiency and equity. It brings attention to the affordability and accessibility of services, the impact of insurance coverage, and the cost-effectiveness of various interventions.

By addressing health inequities through economic policy, such as universal health coverage, subsidized medications, and conditional cash transfers, governments can improve both health and economic productivity. A health system that ignores economic inequality risks reinforcing cycles of poor health and poverty.

6. Technology and Innovation: Transforming Health Systems

Technology is revolutionizing healthcare delivery and personal health management. Innovations like telemedicine, mobile health apps, wearable devices, and AI-assisted diagnostics are expanding access, improving monitoring, and enhancing patient engagement. Especially in remote or underserved areas, technology has become a critical bridge between people and healthcare providers.

However, these innovations are not without challenges. Issues related to data privacy, digital literacy, infrastructure limitations, and the cost of technology can widen the gap between the digitally connected and the excluded. Equity and ethical use must be central to the design and deployment of health technologies.

A multidisciplinary approach ensures that technologists, clinicians, ethicists, and policymakers collaborate to build systems that are user-friendly, safe, and inclusive. When implemented thoughtfully, technology has the power to create a more responsive and resilient health system.

7. Case Examples: Multidisciplinary Health in Practice

Multidisciplinary health approaches move beyond theory when implemented through real world programs and interventions. Across various countries and contexts, initiatives that integrate diverse disciplines such as medicine, psychology, public health, urban planning, technology, and policy have shown significant improvement in health outcomes. The following case examples from India, Scandinavia, and Rwanda illustrate how holistic health solutions emerge from collaborative frameworks.

7.1. Community Based Mental Health in Kerala, India

Kerala stands out in India for its progressive approach to public health, particularly in addressing mental health at the grassroots level. The District Mental Health Programme in Kerala is a pioneering model that brings mental health care into the community setting, making it both accessible and culturally sensitive.

This program integrates psychology, public health, and local governance. Trained community health workers and volunteers, many of whom are local, identify early signs of mental distress, offer basic counselling, and refer complex cases to district mental health professionals. Involving family and panchayat (village council) ensures that mental health is not viewed in isolation but as part of the social fabric. Such initiatives help destigmatize mental illness, reduce suicide rates, and improve early intervention. The success lies in recognizing the interplay between clinical expertise, social context, and local participation, demonstrating the power of multidisciplinary community led mental health care.

7.2. Health Promoting Urban Design in Scandinavia

Countries like Sweden, Norway, and Denmark have institutionalized the principle that urban spaces should actively promote health and well being. This multidisciplinary model blends urban planning, environmental science, public health, and behavioural psychology.

Scandinavian cities prioritize walkability, cycling infrastructure, green spaces, and community gardens. These design features encourage physical activity, reduce pollution, and foster social interaction, factors known to reduce stress and chronic illnesses like obesity and cardiovascular disease. For example, the city of Copenhagen has more bicycles than cars and invests heavily in safe bike lanes, contributing to high levels of physical activity and low carbon emissions.

These choices are not accidental; they are supported by data from public health researchers and shaped through participatory planning involving citizens, policymakers, and health experts. The outcome is a healthier population and improved quality of life indicators such as life satisfaction, longevity, and social cohesion.

7.3. Mobile Health Technology in Rwanda

In Rwanda, multidisciplinary collaboration has transformed maternal and child health through the integration of technology, community health work, and government policy. The Rapid SMS system, introduced in partnership with UNICEF, allows community health workers to collect and transmit data via SMS to healthcare facilities in real time.

This mobile health initiative enables early identification of pregnancy risks, birth complications, and childhood illnesses, ensuring timely intervention. Community health workers, trained not only in clinical protocols but also in mobile data usage and local communication strategies, act as the bridge between remote populations and formal health services.

This program has led to substantial reduction in maternal and infant mortality, thanks to real time data tracking, proactive care delivery, and strong government backing. The success of Rwanda's approach lies in its seamless integration of digital innovation, public health infrastructure, and grassroots community engagement, proving how low resource settings can achieve high impact outcomes through multidisciplinary synergy.

8. Implications for Education, Policy, and Research

A multidisciplinary health model necessitates a paradigm shift in how professionals are trained, how policies are formulated, and how research is conducted. Traditional silos in health education and

governance are no longer sufficient to meet the complexity of modern health challenges, such as chronic diseases, climate-related health issues, and health inequities. A comprehensive and collaborative approach is crucial to building resilient health systems and sustainable well-being.

8.1. Educational Reform for Health Professionals

Professional health education must evolve beyond the biological sciences to include training in the social sciences, psychology, behavioural economics, public communication, and policy analysis. Medical and nursing curricula should integrate modules on the social determinants of health, cultural competence, health equity, environmental sustainability, and digital health technologies. For instance, incorporating courses on community engagement and behavioural science equips future practitioners to better understand patient motivation, adherence to treatments, and the broader context of health behaviours. Likewise, understanding public policy equips health professionals to engage with systemic issues that influence individual and population health.

Cross disciplinary education, such as joint degrees in medicine and public health, or internships that place medical students in community-based organizations, urban planning offices, or environmental agencies, can deepen awareness of interconnections across sectors. These experiences foster collaborative thinking, ethical reasoning, and adaptability—skills critical for addressing health issues that span across traditional boundaries.

8.2. Inclusive and Intersectoral Policymaking

Health policy must be designed and implemented with input from a wide array of disciplines. Economists bring insights into cost-efficiency and equity; environmental scientists contribute knowledge on climate-related health risks; urban planners can design health-promoting spaces; and behavioural scientists help predict and influence public responses to health interventions.

When policymakers work in isolation from experts in these fields, they risk creating strategies that are narrow, impractical, or culturally misaligned. Intersectoral collaboration ensures that policies are comprehensive and grounded in the realities of people's lives. For example, designing a national nutrition program should involve not only medical professionals but also agricultural economists, education specialists, and local community leaders.

Furthermore, policy evaluation should include health impact assessments that measure not only immediate clinical outcomes but also social, economic, and environmental ripple effects. This holistic approach increases the sustainability and effectiveness of public health interventions.

8.3. Research on Systems, Not Silos

Conventional health research often isolates variables in controlled settings, aiming for clarity and precision. However, many real world health problems are systemic and cannot be understood through reductionist methods alone. For example, malnutrition is not merely the result of poor dietary intake; it is influenced by interlinked factors such as poverty, gender norms, agricultural practices, maternal education, and access to healthcare services. Multidisciplinary research approaches, such as systems thinking, participatory action research, and implementation science, are better suited for exploring such complexity. These methods encourage researchers to examine how different domains interact and influence each other over time. For example, a study on childhood asthma might simultaneously consider housing quality, urban air pollution, access to pediatric care, parental health literacy, and neighbourhood socioeconomic status.

Supporting such research requires structural changes in funding and academic evaluation. Grants should encourage collaboration across departments and disciplines, while scholarly journals should be open to publishing interdisciplinary findings that don't fit within narrow disciplinary frameworks.

Universities and research institutions can facilitate this by creating multidisciplinary research centres focused on health equity, climate-health nexus, or digital health ecosystems.

By rethinking professional education, broadening policy frameworks, and reshaping research practices, we can better prepare for a future where health challenges are increasingly complex, interconnected, and global in nature. Embracing this multidisciplinary ethos is not only a strategy for better health outcomes—it is a moral imperative for a more equitable and sustainable world.

Conclusion

True health is not confined to hospitals or clinics—it is embedded in homes, schools, workplaces, and communities. A holistic approach, grounded in multidisciplinary collaboration, is essential for understanding and addressing the full scope of human well-being.

By recognizing the roles of mind, society, environment, economy, and technology in shaping health, we can build a system that is proactive, inclusive, and sustainable. The future of health lies in breaking down silos and working across boundaries to create conditions where individuals and communities can truly thrive.

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