Editorial

Behavioral Eco-Wellness

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The impending climate catastrophe and the worldwide epidemics of metabolic syndrome, obesity, diabetes, and cardiovascular disease are linked to many of the same behaviors, especially to what people eat and how they move around. Epidemiology and population health science tell us that more than half of the variability in morbidity and mortality can be attributed to social and behavioral factors, with the rest coming from genetics, environmental influences, and health care [1–3]. Climate science tells us that perhaps 60% [4] to 75% [5] of humanity’s carbon footprint comes from greenhouse gas (GHG) emissions traceable to choices, habits, and behaviors at the individual and household levels [6]. The amazing and truly wonderful thing about these two sets of facts is that many, if not most, of the behaviors that support personal health also work towards ecological preservation and environmental sustainability. Obvious examples include walking and biking rather than driving [7] and eating plant-based rather than animal-based diets [8]. This confluence of health and sustainability benefits provides a tremendous opportunity to achieve win–win scenarios by tapping into the twin motivations of personal and planetary health, leveraging both the self-centered and the altruistic tendencies that reside in all of us [9]. Towards those goals, I am proposing with this essay that we develop a science of behavioral eco-wellness, one that identifies, assesses, and attempts to improve the choices, behaviors, and habits that contribute to both ecological sustainability and human health.

An increasing array of individuals and organizations have reviewed the evidence and concluded that anthropogenic climate change is the single greatest threat to the future health of humanity [10–12]. Climate change is the result of global heating, which is driven by rising atmospheric concentrations of greenhouse gases (GHGs), mostly from fossil fuel combustion but also from the destruction of forests and from poor agricultural practices. The concept of a carbon footprint and its measurement allow us to attribute GHG quantities to specific human activities [13]. For example, life cycle analysis tells us that driving one mile in an average car is responsible for the release of around 630 g of carbon dioxide equivalent (gCO₂e), compared to 260 gCO₂e from an electric car and more than 1000 gCO₂e from a gas guzzler [14]. In contrast, the carbon footprint of a mile on an electric bike is <10 gCO₂e, similar to walking and cycling. Nevertheless, with physical activity being one of the most potent drivers of health, and with fossil-fueled transport accounting for around a quarter of GHGs, the advantages of person-powered “active transport” are obvious and considerable, although not equally available to people with varying levels of resources and abilities.

The potential advantages of healthy and sustainable dietary intake patterns are likewise momentous [15]. Obtaining a day’s worth of protein (50 g) from nuts, beans, or peas has a carbon footprint of 150 to 400 gCO₂e, compared to 1600 to 2100 gCO₂e from dairy, 2800 gCO₂e from chicken, and upwards of 25,000 gCO₂e from beef raised on deforested land [14]. If the cow was fed on corn grown on land that was once prairie, the carbon footprint would drop to around 15,000 gCO₂e [14]. The footprint is slightly higher for pasture-raised cows, as it takes them longer to mature, and all that while they are belching up methane, a GHG 28 times more potent than CO₂. As the EAT-Lancet Commission has noted, transitioning towards plant-based diets could provide enormous health and sustainability advantages as well as significant cost savings [16].
Not surprisingly, the world’s more privileged peoples have higher carbon footprints than the economically disadvantaged [17]. At the same time, poorer populations suffer disproportionately from the unfolding climate catastrophe, despite their GHG contributions being lower [18]. For example, the risk of climate-related mortality is projected to be dozens or even hundreds of times higher for a poor person in Africa or Southern Asia than for someone in middle- or upper-income strata in the US or Europe [19]. The carbon footprint of a privileged person taking one flight may be higher than an entire year of living for a poor person residing in an under-developed nation [14]. Thus, the impetus to reduce GHG emissions is not only necessary for a future where humanity (and other species) can thrive, but should also be understood as a potent means to address disparity, which I consider a moral imperative.

One of the greatest misconceptions is that the privileged sectors would somehow have to decrease their health, happiness, or quality of life to reduce their carbon footprints. Nothing could be farther from the truth. It turns out that the path towards low-carbon living is also the path towards health and happiness. Economic privilege often involves sitting long hours in chairs and automobiles, which can lead to obesity, diabetes, and chronic back pain as well as stress, anxiety, and depression. Walking or biking rather than driving delivers mental as well as physical health benefits, and is much cheaper than fossil-fueled alternatives. High-carbon foodstuffs like meat and dairy drive up rates of cardiovascular disease and cancer [20]. Plant-based diets are healthier and less costly, and can be tastier and more enjoyable. Purchasing unneeded consumer items leaves a trail of refuse behind us, wastes our money, and may lead to feelings of guilt, being overwhelmed, or diminished self-esteem. Living isolated from each other in overly large and energy-intensive homes contributes to epidemic levels of loneliness, depression, and social disarray. Living life in accordance with our values (eudaimonic well-being) supports health and strengthens social cohesion [21].

So, what can scientists, physicians, and other educated professionals do to improve the situation? A great deal, it turns out. We can reduce our own footprints, setting an example and giving us a sense of integrity. For greater impact, we can advocate for needed changes in the systems in which we work and live. While universities and research institutes contribute towards essential knowledge and innovative solutions, carbon footprints can be substantive [22]. Medical facilities, especially hospitals, are energy-intensive, accounting for 8–9% of the US’s national carbon footprint and 4–5% of GHGs worldwide [23,24]. For many facilities, switching to solar, wind, or hydro power can be an excellent starting point, as can energy efficiency measures such as insulation, LED lighting, and better calibration of heating, cooling, and ventilation systems. Promoting active transportation to commute to work and sustainable food programs within institutions should be prioritized. We should all be more careful in how we procure and use material items such as computers and other electronic devices, which have high life cycle impacts. Within health care, reducing the use of disposable gloves, gowns, needles, surgical instruments, and lab supplies can make a big difference. We can take advantage of tele-health so that patients no longer need to drive to clinics, park their cars, and sit in waiting rooms. We can reduce unnecessary lab tests and prescriptions, as well as meaningfully confront the serious problems of over-diagnosis and over-treatment [25,26]. Each of these choices will provide co-benefits, usually in terms of both economic savings and having more time to pay attention to the key missions of our institutions.

Finally, we should re-orient our systematic priorities from the reactive focus on identifying and solving emergent problems, and instead build a culture of prevention and salutogenesis [27]. The 2023 Achieving Whole Health report by the U.S. National Academies notes that “whole health is physical, behavioral, spiritual, and socioeconomic well-being as defined by individuals, families, and communities. To achieve this, whole health care is an interprofessional, team-based approach anchored in trusted longitudinal relationships to promote resilience, prevent disease, and restore health. It aligns with a person’s life mission, aspiration, and purpose” [28]. The rapidly growing Planetary Health movement brings a
new dimension to the WHO’s 1948 definition of health as “a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity” [29]. Now, it is not just physical, mental, and social health that we must work towards, but also the health of the Earth’s highly complex and fundamentally threatened eco-sphere.

As scientists and health professionals, it is our moral and professional duty to both acknowledge the realities of the climate catastrophe and the devastating consequences of poor dietary and mobility patterns, and to put our collective consciousnesses together to explore possible solutions to these twin calamities. Aiming to bolster a radical re-orientation of the dominant conceptual framework, I would like to introduce an aspirational definition of the word eco-wellness as living life to maximize health, happiness, and environmental sustainability. For humanity’s scientific enterprise that is exceedingly capable of posing and answering research questions, I propose a field of behavioral eco-wellness, defined here as the choices, habits, and behaviors that support both personal health and environmental sustainability [30,31]. Clearly, a wide range of rigorous research will be needed as we conceive, initiate, develop, implement, evaluate, and disseminate eco-wellness interventions while carefully paying attention to potential co-benefits, costs, tradeoffs, offsets, and spillover effects.

Climate change is an existential threat to humanity as well as tens of millions of our fellow species [32]. Metabolic syndrome, diabetes, dyslipidemia, and obesity are major risk factors for both cardiovascular disease and cancer, and they have reached epidemic proportions across the globe [33]. These health threats are caused in large part by the decreases in physical activity that accompany mechanized transport as well as by the over-consumption of carbon-intensive animal-based foods. The resumption of active transportation (walking or cycling rather than driving) and transitioning back towards the historical norm of plant-based diets will yield tremendous health and sustainability co-benefits; these can be brought about in ways that are technically feasible, economically advantageous, and ethically sound. While particular pathways will vary by geography, ecology, national and community identity, and cultural norms, the overarching theme will be consistent: Health, happiness, and economic viability are not only compatible with a transition towards environmental sustainability—they are the motivation, driving force, mechanism, and desired outcome. It is up to all of us to accept these facts, take responsibility, and move forward in appropriate directions.

Conflicts of Interest: The author declares no conflict of interest.

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