

Roles and responsibilities of health care professionals in combating environmental degradation and social injustice: education and activism

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ABSTRACT

This article describes the causes and health consequences of environmental degradation and social injustice. These issues, which impact primarily on the poor and underserved (both in the United States and internationally) are rarely or inadequately covered in the curriculums of traditional health care professions. The discussion offers ways for health care professionals to promote equality and justice and uses the example of Rudolph Virchow's social activism to illustrate how one physician can lead society toward major public health gains. There is also an examination of the roles of institutions and organisations in enhancing environmental preservation and promoting social justice. Specific curricular suggestions from history and the humanities are offered for those teaching and mentoring new health professionals.

Introduction

Health care professionals share a responsibility to recognise the causes and health consequences of environmental degradation and social injustice, and to oppose those forces which contribute to the spread of poverty, inequality, racism, human rights abuses, and ecosystem destruction. Today our world faces a growing crisis due to the health consequences of environmental degradation and social injustice. As a result of our training, health care professionals are in a unique position to recognise the causes of this crisis. Because of our privileged positions in society, since we ourselves are in part responsible for these problems, and because our *raison d'être* is to promote health and fight injustice, we share a responsibility, individually and collectively, to oppose those forces which contribute to the spread of poverty, inequality, racism, human rights abuses, and ecosystem destruction. We can accomplish this through changes in our own lives, through education and policymaking, and by speaking out and working against the forces of injustice.

Causes and health consequences of environmental degradation and social injustice

Causes of environmental degradation include overpopulation, pollution, deforestation, global warming and associated weather extremes, unsustainable agricultural and fishing practices, overconsumption ('affluenza'), an increasing maldistribution of wealth – nationally and internationally, and militarisation and war. Consequences include increasing poverty and overcrowding, famine, destruction of vital ecosystems, species loss, medical illnesses (particularly infectious diseases), and widespread, preventable suffering due to military conflict.¹

The world's population has grown exponentially, reaching six billion in 1998.² Poverty, impaired access to reproductive health care services, and the social, legal, educational, economic and political marginalisation of women are driving this explosive increase, which primarily affects Africa, Asia and Latin America. Compounding this problem are urbanisation and a world migrant population of almost fifty million individuals, primarily war refugees and those fleeing environmental catastrophes.³ This Malthusian increase in population has stressed the world's ecosystems through unsustainable agricultural and fishing practices and air and water pollution.⁴

Worldwide, over one billion people live in abject poverty, consuming less than 2150 calories per day or earning less than 500 dollars (US) per year.⁵ Over one billion people have no access to clean drinking water, two billion have no electricity, and three billion lack adequate sanitation services. Two million children die each year of preventable diarrhoeal disease, and every two days hunger-related causes kill as many people as died in the atomic bomb explosion at Hiroshima.⁶ Tens of thousands of children die every day from malnutrition and disease, roughly the same as a hundred exploding jumbo jets full of children.⁷ Soil erosion exceeds soil formation,⁸ almost half of the world's farmland is seriously degraded due to destructive agricultural practices,⁹ and water use has tripled in the last fifty years, depleting aquifers and necessitating the development of large-scale irrigation projects like China's Three Gorges Dam.¹⁰ Untreated sewage from factory farms pollutes waterways,¹¹ and excessive agricultural antibiotic use has contributed to the spread of antibiotic-resistant food-borne pathogens among humans.¹² Widespread factory-trawler fishing has seriously depleted many of the world's major fisheries, necessitating fish farming, which in turn causes harm to local estuaries and harbours. Cyanide and dynamite fishing have accelerated the global warming-induced destruction of coral reefs, upon which most of the world's ecosystems ultimately depend.¹³

Industrialisation and the accelerating worldwide demand for fuel-inefficient automobiles have polluted our air and hastened global warming and the destruction of the protective ozone layer.¹⁴ Air pollution levels have been strongly linked to morbidity and mortality from cardiopulmonary and cerebrovascular disease.¹⁵ Global warming, a consequence of increasing atmospheric carbon dioxide and other

pollutants produced mostly by the world's wealthiest nations,¹⁶ has been associated with increasing average worldwide temperatures, the melting of polar icecaps and glaciers and augmentation of the destructive effects of extreme weather patterns such as El Niño and La Niña.¹⁷ Deforestation, spurred by overpopulation, poverty, unsustainable farming practices, and rapacious logging, to satisfy increasing demand for paper products, has in turn augmented global warming, degraded soil quality, and contributed heavily to species loss. Haiti, Mauritania and Ethiopia have been completely deforested, and previously lush island countries like Thailand and the Philippines have been transformed into net importers of forest products.¹⁸

We are currently living in the midst of the largest species extinction since that of the dinosaurs sixty-five million years ago.¹⁹ Of the 50,000 known vertebrate species, seven out of ten birds, one quarter of mammals, half of the 232 primate species, one third of fish species, and between one fifth and one quarter of reptile and amphibian species are threatened with extinction.²⁰ Because over half of the top 150 prescription drugs are derived from or patterned directly after natural products, and since less than 0.5 percent of known flowering species have been surveyed for their medicinal value, a major consequence of this mass extinction is the loss of a potentially valuable pharmacopoeia.²¹

Most garbage, produced as a by-product of First World overconsumption, is either recyclable or compostable. Our landfills are overflowing, contributing toxic leachate to our water supply, necessitating increased incineration of toxic waste and the desperate attempts of garbage-saturated areas to export their waste to financially needy states, Native American reservations, and countries that already suffer disproportionately from the effects of ecosystem degradation and poverty.²²

The health consequences of these phenomena and others include the decimation of the African subcontinent by the Acquired Immunodeficiency Syndrome (AIDS);²³ the persistence and in some cases resurgence of many preventable, or at least treatable, diseases like malaria, tuberculosis, viral encephalitis, cholera, hantavirus, schistosomiasis, influenza, trypanosomiasis, onchocerciasis, dengue, leishmaniasis, rabies, hookworm and yellow fever;²⁴ millions of pesticide-induced illnesses²⁵ and the stunted neurological development of millions of children due to lead emissions, a particular problem in countries like China and Russia where automobile use is skyrocketing and leaded gas remains the most commonly used fuel.²⁶ At the same time, despite their missions as institutions for the prevention and treatment of disease, hospitals contribute significant amounts of dioxins, mercury, cadmium and lead to local environments, in part through the incineration of polyvinyl chloride, which is found in medical supplies such as intravenous bags and tubing.²⁷

Contributors to environmental degradation and social injustice

The wealthy, particularly those in large industrialised countries, are the greatest contributors to worldwide environmental degradation. For example, while the United States contains just five percent of the world's population, it is responsible for twenty-five percent of the world's energy consumption, thirty-three percent of its paper use, and seventy-two percent of all hazardous waste production.²⁸ The worldwide gap between rich and poor doubled over the last thirty years and continues to grow rapidly. In the United States, the richest one percent of the population owns forty-eight percent of the country's wealth, while the poorest eighty percent owns just six percent (the widest gap of any industrialised nation). Worldwide, the top 358 billionaires are worth the combined income of the bottom 2.5 billion people (or forty-five percent of the world's population).²⁹

Real wages for the average American worker have decreased, job security is down, workers receive fewer benefits and possess less retirement savings, household and total credit card debt have blossomed and a continually increasing number of Americans lack health, life and disability insurance.³⁰ The United States lags behind most other industrialised nations in major health indicators, leading many to question the so-called 'superiority' of the US health care system.³¹

A majority of the world's 100 largest economies are now transnational corporations, which are answerable to their shareholders (with most shares being held by a small percentage of wealthy individuals), as opposed to countries, which ultimately answer to their citizens.³² Ninety percent of transnational corporations are headquartered in the Northern Hemisphere, exacerbating the wealth and resource disparity between the Northern and Southern Hemispheres. Through tax law loopholes, the transfer of assets overseas and fraud, corporations are gaining increasing power.³³ Through lobbying, campaign contributions, control of a media which limits public debate on topics of environmental importance, and in some cases human rights abuses, corporations, in their pursuit of greater profits, fight to weaken environmental and occupational safety and health standards and to dismantle social legislation designed to protect the public's health.³⁴ Corporations have also benefited from various legal developments: Environmental Audit Laws, which absolve them of much of their responsibility for ecologically destructive activities; Food Disparagement Laws, which may override the US First Amendment protections on freedom of speech in certain states; Strategic Lawsuits Against Private Parties (SLAPP suits), designed to harass environmental groups and deplete their financial resources through threatened or actual litigation;³⁵ and support of so-called 'Tort Reform', designed to limit product liability risks. Further, corporations can benefit from the moving of production facilities to countries where cheap labour is plentiful and environmental, occupational, safety, health, and human rights

protections are minimal; and the intimidation and harassment of whistleblowers and union members.³⁶

Despite comprising one of the most profitable industries in the United States, pharmaceutical companies continue to charge exorbitant prices for anti-AIDS drugs, and have effectively lobbied and threatened trade sanctions against developing countries in order to prevent the production and importation of much cheaper, generic versions of these life-saving medications.³⁷ Biotechnology companies have dramatically increased production and exportation of genetically modified foodstuffs, despite worrisome potential sequelae of their use.³⁸

Corporate agendas are furthered by the World Trade Organisation and by policies of the World Bank and International Monetary Fund, which promote privatisation of social resources and export-oriented development. This contributes further to natural resource depletion and pollution and tends to concentrate wealth in the hands of fewer and fewer individuals, while the health and welfare needs of the average citizen are neglected. Many countries in sub-Saharan Africa and Central America face asphyxiating foreign debts, which minuscule levels of foreign aid and charitable donations have reduced only slightly.³⁹ The Malthusian consequences of overpopulation, ecosystem destruction, and growing disparities in wealth are both local and international conflicts. These conflicts contribute to suffering indirectly, through the diversion of resources away from countries' educational, social and health care needs, and directly, through forced migrations, destruction of agricultural settlements and forced famine, weapons, such as missiles and landmines (which kill indiscriminately) and genocide.⁴⁰ The fate of our species hangs in the balance given the ever-present threats of chemical, biological, and nuclear warfare.⁴¹

Astronomical military budgets divert much needed capital away from countries' educational, social and health care needs.⁴² Dwight Eisenhower recognised this, saying, 'The problem in defense spending is to figure out how far you should go without destroying from within that which you are trying to defend from without.' He added, 'Every gun that is made, every warship launched, every rocket fired, signifies in the final sense a theft from those who hunger and are not fed, those who are cold and not clothed.'⁴³

Environmental sexism and racism

Women suffer disproportionately from the effects of poverty, famine and human rights abuses, through impaired access to employment, education, reproductive (and other basic) health services, salary inequities, political and legal marginalisation, divorce restrictions and direct violence.⁴⁴ More than two thirds of the world's poorest citizens are women.⁴⁵ In the United States, African-Americans and Hispanics suffer disproportionately from the effects of poverty and environmental destruction. They are more likely to live in heavily-polluted inner cities, work in industries where they suffer exposures to toxic chemicals, live in close proximity to waste dumps and incinerators (for example the 'Cancer Belt' between Baton Rouge and New Orleans, Louisiana) and suffer the consequences of impaired access to health care.⁴⁶

Confronting environmental degradation and social injustice

The role of government and industry

There are many ways in which government, industry and the individual can combat the degradation of our environment and social injustice. Health professionals too should have a responsibility to recognise the links between human health care and global social issues. Government policy should encourage (or require) industry to take measures in the reduction, reutilisation and recycling of raw materials and there should be stronger environmental, occupational, safety and health requirements for industry. Government should eliminate tax breaks and subsidies to polluting industries and increase tax benefits and research funding for renewable technologies. There should also be financial support for research and development of alternative, less polluting fuels and more sustainable, safe methods of food production.⁴⁷ Government and industry need to ensure sustainable management of our natural resources. Government must enforce stronger legislation to punish environmental scofflaws, and revise economic analyses to account for the contributions of natural resources to the world's economies.⁴⁸ Incorporating environmental effects into both corporate and governmental comparative risk assessments and subjecting these assessments to public scrutiny would give greater transparency to issues affecting our environment. There should be support of ecumenical efforts by the world's major religions to promote environmentalism through a framework of shared values,⁴⁹ and aid to non-governmental organisations which fight for environmental and social justice, while de-emphasising the role of states, which for many reasons are constrained in acting altruistically, and hence are often impotent in the face of our deepening global crisis.⁵⁰

On a societal level, augmenting the status of women by strengthening family planning programs and equalising access to educational opportunities and legal and political representation;⁵¹ forgiveness of Third World debt and support of local economies; and encouraging the poor and minorities to exercise their rights to full participation in the political process, especially through voting, would minimise the most glaring social disparities having a harmful effect on global health issues today.

The role of the individual

As individuals, we can support 'green' products and organisations, financially and through volunteerism; invest in 'socially responsible' or 'green' mutual funds;⁵² decrease our meat intake and avoid over-fished species;⁵³ purchase organic fruits and vegetables and organic, shade-grown coffee; use less paper; avoid gas-guzzling vehicles and opt for walking, bicycling, public transportation, or carpooling; shun gold, silver, and diamonds originating in countries known for environmental, civil and human rights abuses;⁵⁴ select 'green electricity' and a 'green burial';⁵⁵ compost and recycle organic wastes and become mindful of their energy use and waste production.

Health professionals have inadequately addressed, individually and collectively, the links between human health, environmental degradation and social injustice. We can and should use our privileged positions to educate students and colleagues, inform the public and, through investment of our time and money, as well as via direct action, work to promote change which will improve the health of our planet and its inhabitants.⁵⁶

Rudolph Virchow as social justice activist

The life of the famous pathologist Rudolph Virchow stands as a worthy example of how we can fulfill these goals.⁵⁷ Best known for establishing the cell doctrine in pathology, Virchow also elucidated much of the pathophysiology of thrombosis, pulmonary embolism, leukocytosis and leukemia. Yet Virchow's contributions to social medicine were equally valuable. He recognised that 'If a disease is an expression of individual life under unfavorable conditions, then epidemics must be indicative of disturbances of mass life.'⁵⁸ He argued that typhus, cholera, tuberculosis, scurvy, some mental diseases, and cretinism were among those maladies that result from the unequal distribution of civilisation's advantages.⁵⁹ Virchow asserted the moral un-neutrality of medicine.⁶⁰ To him, physicians were the natural advocates of the poor,⁶¹ he wrote: 'If medicine is really to accomplish its great task, it must intervene in political and social life. It must point out the hindrances that impede the normal social functioning of vital processes, and effect their removal.'⁶² Virchow served as a member of state and local government for over thirty years and founded a journal entitled *Medical Reform*. Both in the legislature and through this periodical, he spoke out for public provision of medical care for the indigent, for the prohibition of child labour, for universal education and for free and unlimited democracy. He instituted programs for improving water and sewage systems, for stricter food inspection and for revamping the old, ineffective hospital organisation.⁶³ He elevated standards 'for the training of nurses [and set] new criteria of hygiene for the public schools.'⁶⁴ His study of cross-cultural cranial capacities helped to invalidate, albeit briefly, the pernicious myth of German racial purity. Other professionals, including Thomas Hodgkin, Margaret Sanger, Albert Schweitzer, and Florence Nightingale, have led inspiring lives of social activism – innumerable individuals today labor, often anonymously, in support of the disenfranchised.

The role of the health care institutions

Collectively, health care organisations should come out strongly in favour of environmental protections and universal access to food, clothing, housing, education, a living wage, political and legal representation and health care.⁶⁵ They should stand against corporate and governmental policies which harm the environment and adversely affect the health of many, in order to enrich the few. We must be ever-vigilant in the face of repeated attempts by local and national legislatures to roll back pre-existing environmental regulations.

Individuals and groups can make their positions known through actively seeking media exposure,⁶⁶ public speaking engagements, alliances with like-minded groups, writing op-ed columns and letters to influential legislators, volunteerism, and even running for public office.

Health care institutions should improve medical waste management through better segregation of infectious material; worker safety training; safer disposal methods; reuse and recycling programs; and by phasing out mercury-containing and polyvinyl chloride-containing compounds.⁶⁷ Investigators should be encouraged to carry out studies looking at ways to cut waste in delivery of medical care.⁶⁸ Modification of medical and nursing schools' affirmative action policies to include a focus on social class as well as race may contribute to improved care for the underserved because of the tendency of a physicians' socio-economic origins to correlate with their patterns of service to the disadvantaged. Furthermore, physician-patient communication would be enhanced based on shared experience.⁶⁹ As epidemiology continues to evolve from a science that identifies risk factors for disease to one that analyses the systems that generate patterns of disease,⁷⁰ public health programs should keep focusing on and emphasising issues of social justice.⁷¹

Hospitals must be especially wary of corporate contracts which limit academic freedom and/or the dissemination of research findings vital to the public's health.⁷² Scientific and ethics organisations and health professions schools should counter corporations' deliberate attempts to obfuscate environmental issues – sponsored environmental education curriculums for public schools; deceptive advertising; the vigorous promotion of faulty science by corporate front groups and 'astroturfing' – the creation of artificial 'grassroots coalitions' which may contain only a few members.⁷³ In the United States, companies capitalise on citizens' environmental ignorance, which is in part a by-product of a public education system in disarray, particularly in poor and minority neighborhoods, which suffer disproportionately due to under-funded school systems.⁷⁴ Health care organisations should divest themselves of stock holdings in harmful products such as tobacco,⁷⁵ and advocate for strong laws and treaties to curb tobacco use.⁷⁶ They should support evidence-based humanitarian interventions⁷⁷ and work toward solutions to poverty, such as replacing the current minimum wage with a federally-mandated living wage. Finally, strong advocacy for peace, decreased militarisation, and increased international cooperation is essential in these dangerous times.⁷⁸

Education in health professions and the medical humanities

Schools for health professions need to devote significantly more curricular time to teaching students and trainees, in creative ways, about the causes and health consequences of environmental degradation, poverty, racism, and other forms of social injustice. Medical schools must respond more aggressively to the Institute of

Medicine's 1995 recommendations regarding increases to training in the prevention and treatment of diseases related to the environment. These schools need to re-emphasise the role of social class as a contributor to morbidity and mortality.⁷⁹

Curricular surveys have shown that environmental ethics is largely ignored in US medical schools.⁸⁰ Furthermore, medical schools do not adequately address the medical aspects of human rights issues in required courses,⁸¹ despite broad recognition of the important role that medical professionals can play in the prevention of international torture and in the treatment of its survivors.⁸² Medical and nursing school curriculums also inadequately cover the roles of providers in combating militarisation and genocide.⁸³ Schools should educate health professionals regarding the consequences of chemical, biological and nuclear warfare, so that they in turn can help educate the public and its leaders about the devastating effects weapons of mass destruction would have on the earth and its inhabitants.⁸⁴

Topics related to environmental ethics and social justice can be taught from both scientific and ethical perspectives, and would likely be more interesting if they incorporated history and the humanities. For instance, a session on toxic pollution could discuss the leak of methylisocyanate gas during a factory explosion in Bhopal, India,⁸⁵ the nuclear power plant explosion in Chernobyl,⁸⁶ and the Exxon Valdez oil spill of 1989.⁸⁷ William Eugene and Aileen Smith's photoessay on the health consequences of methylmercury poisoning in Minimata Bay, Japan,⁸⁸ powerfully communicates the depth and poignancy of suffering among those exposed prenatally and as adults. A session on deforestation could relate the events leading to the desertification of Easter Island.⁸⁹ George Orwell's 'How the Poor Die'⁹⁰ and Anton Chekhov's *Ward No. Six*⁹¹ offer timeless descriptions of some of the horrific conditions which even today can be found in inadequately-funded public hospitals. Upton Sinclair's *The Jungle*⁹² relates the experience of a poor immigrant family in the United States – the novel's revolting descriptions of Chicago's meat packing plants spurred public pressure on Congress to pass the Pure Food and Drug Act of 1906. Henrik Ibsen's *An Enemy of the People*⁹³ portrays how a doctor battled with city officials to clean up the local water supply. William Carlos Williams' *The Paid Nurse*⁹⁴ describes a community physician's disdain at the inadequate treatment provided to a victim of an industrial accident by a company physician.⁹⁵ Earnest J Gaines' *The Sky is Gray*⁹⁶ relates the story of a poor, single African-American farm mother trying to obtain dental care for her ill child in a racist Southern farm town. Doris Lessing's *An Old Woman and Her Cat*⁹⁷ provides a moving fictional entrée into the world of society's dispossessed, through its description of the daily struggles of an aged gypsy and her adopted alley cat trying to cope with life on the streets of London. Exposing medical professionals to the realities of historical events and evocative literature that highlights the human suffering caused by environmental disasters and social disparity can promote a more personal human understanding and inspire health professionals to use their role to take action against injustice.⁹⁸

Compulsory community service volunteer work and mentored service-learning projects would immerse students in their communities, giving them greater insight to the health and social problems facing patients,⁹⁹ as well as an opportunity to conduct activist-oriented research.¹⁰⁰

Conclusions

Regrettably, discourse regarding environmental issues by our elected and industrial leaders is marked by ignorance and oversimplification, and is often influenced by campaign contributions from individual and corporate polluters: 'The most precious thing in the world is capital.'¹⁰¹

Ralph Waldo Emerson, on the other hand, eloquently attacked isolationism and the accumulation of capital: 'As long as civilisation is essentially one of property, of fences, of exclusiveness, it will be mocked by delusions. Our riches will leave us sick; there will be bitterness in our laughter, and our wine will burn our mouths. Only that good profits which we can taste with all doors open, and which serves all men.'¹⁰² George Bernard Shaw wrote that 'The worst sin toward our fellow creatures is not to hate them, but to be indifferent to them: that is the essence of inhumanity.'¹⁰³ And Pastor Niemoller's 'First They Came for the Jews' powerfully exhorts us to speak out on behalf of the disenfranchised, especially since one day we may join their ranks:

First They Came for the Jews
First they came for the Jews
and I did not speak out –
because I was not Jew.
Then they came for the communists
and I did not speak out –
because I was not a communist.
Then they came for the trade unionists
and I did not speak out –
because I was not a trade unionist.
Then they came for me –
and there was no one left
to speak out for me.¹⁰⁴

While the litany of environmental destruction and social injustice presented herein could provoke overpowering depression, we must avoid succumbing to nihilism or cynicism.¹⁰⁵ Philip Noel-Baker, in his 1959 acceptance speech for the Nobel Peace Prize, said: 'Defeatism about the future is a crime. The danger is not in trying to do too much, but in trying to do too little.'¹⁰⁶ Elie Wiesel's Nobel speech echoes the sentiment: 'There may be times when we are powerless to prevent injustice, but there must never be a time when we fail to protest. The Talmud tells us that by saving a single human being, man can save the world.'¹⁰⁷ And, Margaret Mead's reminder, 'Never doubt that a small group of thoughtful, committed citizens can change the world; indeed it is the only thing that ever has,'¹⁰⁸ should motivate us to struggle, both

individually and collectively. Doctor Evgeny Chazov, in his Nobel speech of 1985 representing International Physicians for the Prevention of Nuclear War, said: 'If we are to succeed, our vision must possess millions of people. We must convince each generation that they are but transient passengers on this planet earth.'¹⁰⁹ Finally, let us act not primarily for ourselves, but for each other,¹¹⁰ and mainly for generations to come; for, as the Native American saying reminds us, 'We have not inherited the Earth from our ancestors, but have borrowed it from our children.'

ENDNOTES

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