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Question 1: What is the relationship between health beliefs and accepted treatment?

 **Firstly what is health beliefs?**

The Health Belief Model (HBM) was developed in the early 1950s by social scientists at the U.S. Public Health Service in order to understand the failure of people to adopt disease prevention strategies or screening tests for the early detection of disease. Later uses of HBM were for patients' responses to symptoms and compliance with medical treatments. The HBM suggests that a person's belief in a personal threat of an illness or disease together with a person's belief in the effectiveness of the recommended health behavior or action will predict the likelihood the person will adopt the behavior.

 The HBM derives from psychological and behavioral theory with the foundation that the two components of health-related behavior are 1) the desire to avoid illness, or conversely get well if already ill; and, 2) the belief that a specific health action will prevent, or cure, illness. Ultimately, an individual's course of action often depends on the person's perceptions of the benefits and barriers related to health behavior. There are six constructs of the HBM. The first four constructs were developed as the original tenets of the HBM. The last two were added as research about the HBM evolved.

**What is accepted treatment?**

 Accepted treatment teaches mindfulness skills to help individuals live and behave in ways consistent with personal values while developing psychological flexibility.

Practitioners of Accepted treatment help individuals recognize ways in which their attempts to suppress, manage, and control emotional experiences create challenges. By recognizing and addressing these challenges, individuals can become better able to make room for values-based actions that support well-being.

 **What are the relationship between the two**

Promoting health behavior change presents an important challenge to theory and research in the field of health psychology. In this paper, we introduce a context-driven approach, the Acceptance and Commitment Therapy (ACT) model which is built on Relational Frame Theory. The ACT-based intervention aims to promote individuals’ new health behavior patterns through the improvement of the key construct of psychological flexibility, which is defined as the ability to contact the present moment more fully with acceptance and mindfulness as a conscious human being. Building on the psychological flexibility model, implemented through the six core ACT processes, individuals improve maintenance of long term health behavior change through committed acts in service of chosen values while acknowledging and accepting the existence of contrary thoughts, rules, and emotions as part of themselves but not determinant of their behaviors. Taking advantage of this context-driven approach of health behavior change, we recommend researchers and practitioners to design their health behavior change intervention programs based on ACT.

B. How are biological processes influenced by culture

 Because the relative influence of genetic and environmental components varies depending on the specific genes and environments under consideration and their specific interactions, debates over the relative importance of nature vs. nurture are misguided. Analysis of the concept of heritability indicates the failure of these statistical formulations to answer the “gene vs. environment”; question. Recent efforts to identify genetically based biological causes as the primary sources of individual variations in communication fall prey to these failures. In place of a “common biological”; paradigm for communication, a multi‐causal model is suggested in order to attend to the complex and variable interactions among the many factors contributing to communication behaviors, including genes, gene products, physiological and environmental inputs, developmental processes, established biological structures, cognitive processes and inputs, cultural processes, social structural inputs, and codes.

 The way our ancestors ate, cooked, explored, and interacted with others has had a profound influence on our genetic inheritance. So how will modern culture shape the genetic legacies we leave to our descendent? You shouldn't be able to drink milk. Your ancestors couldn't. It is only in the last 9,000 years that human adults have gained that ability without becoming ill. Children could manage it, but it was only when we turned to dairy farming that adults acquired the ability to properly digest milk.

It turns out that cultures with a history of dairy farming and milk drinking have a much higher frequency of lactose tolerance – and its associated gene – than those who don't. Drinking milk is just one of example of the way that traditions and cultural practices can influence the path of our evolution. Culture and genetics are traditionally thought of as two separate processes, but researchers are increasingly realizing that they are intimately connected, each influencing the natural progression of the other. Scientists call it "gene-culture co-evolution." Why does it matter? If we can pin down how culture influences our genetic makeup – and how the same processes apply to other creatures too – then we can be better understand how the way we act as a society today could influence our future.

 Another example of how culture influences our biology is the relationship between yam farming and malaria resistance. Throughout much of Africa, people are in constant battle with malaria, But there are some people who seem to have a natural defense force. Their red blood cells, normally shaped like flattened disks, are shaped instead like a crescent or sickle. Because of the odd shaped blood cells, sickle-cell disease can lead to blockages in blood vessels, which in turn cause pain and organ damage. Under normal circumstances, evolution keeps sickle-cell disease to a minimum because it can be so harmful and can reduce life expectancy. But because of a biological quirk, the sickle-cell gene can actually protect against malaria. So in parts of the world where malaria infection rates are extremely high, like Africa, natural selection may actually favour the sickle-shaped cells. In the gamble of life, protection against malaria may be preferable, even at the potential cost of suffering from sickle-cell disease. Here's what's interesting: those communities that farm yams have much higher rates of the sickle-cell gene than nearby communities with different agricultural practices. In order to cultivate yams, trees had to be chopped down. "The removal of trees had the effect of inadvertently increasing the amount of standing water when it rained, which provided better breeding grounds for malaria-carrying mosquitoes," writes biologist Kevin Laland of the University of St Andrews in Nature Reviews Genetics. More mosquitos mean more malaria, creating the conditions for sickle-shaped cells to become adaptive.

So while it's sickle-cell disease that's protective against malaria, it was a uniquely human behavior – yam farming – that allowed evolution to act. Not all examples of gene-culture co-evolution are quite as beneficial. Polynesians, for example, have a uniquely high prevalence of type II diabetes. It's among the highest worldwide, and is higher even than among neighboring human populations. One group of researchers has discovered that the Polynesians have a particularly high frequency of a variant of a gene called and that may be responsible for their high frequency of type II diabetes, at least in part. Why are they so uniquely afflicted by this disease? The researchers think it may have something to do with their ancestors' culture of exploration. As the Polynesians settled the islands of the Pacific, they endured long voyages across the open ocean, and faced the stresses of cold and starvation. Those conditions may have encouraged "thrifty metabolism", which allows people to build up fat deposits more quickly when food is available. Natural selection may have increased the frequency of associated gene variants among them. However the sort of metabolism that would have been useful to explorers can lead to obesity and type II diabetes for individuals in modern cultures with consistent sources of nourishment. So modern Polynesians may have inherited a susceptibility to type II diabetes not because they lead a sedentary lifestyle, but because their ancestors decided to climb into some canoes and explore their planet.

While these examples are perhaps the best understood examples of gene-culture co-evolution, researchers have identified scores of others. Our domestication of plants may have given a leg up to the genes that allow us to detoxify certain chemical compounds found in the plants we eat. Our history of exploring new territories and unfamiliar climates may have acted upon genes that allow us to tolerate more extreme heat or cold than our ancestors. The invention of cooking may have altered the evolution of our jaw muscles and our tooth enamel. The emergence of language and complex social cognition may have prompted natural selection to further guide the development of our brains and nervous systems.

3. What happens when Western medicine are introduced into a foreign culture ( use Nigeria as a case study)

 Before the advent of the European rule, Nigerians relied solely on indigenous medicine (read more about traditional Medicine here), which is peculiar to each culture, based on the illness or disease paramount to the culture. This is why traditional medicine in Nigeria is not uniform. Then, we had a well established medical system that uses the “Ifa” system to investigate the causes of illness and their solutions. This practice is pervasive and it influences all our activities. No wonder it is still in practice till date. The ancient medical system was limited, few for the people. Only the rich had access to it. It has limited power and influence in the society.

 Modern scientific medicine was for the rich private homes where there are personal relationships between the patients and the caregivers. The patients are treated as a whole where the overall circumstances surrounding them are treated. The treatment is holistic, the surroundings, social circumstances, situations and environments are treated and not only the symptoms. Also, there were few effective drugs and the available ones were provided by the whites. The enlightenment period that came with reasoning fought against religion and superstition. People believed they can develop new things which led to the development of science and technology. There was the emergence of bio-medicine. Medicine began to develop with development of science. Institutions and laboratories were built. There was also development in the formal training of doctors.

 Modern Medicine dated back to about 500 years ago with the advent of Portuguese traders from the Southern part of Europe. Also, the Arabic medicine was introduced during this period through the contact with North Africa. The voyages of discovery by Prince Henry, who was a navigator, opened up the trade with the Portuguese. Pepper and slaves were the items for trade. Unfortunately, the malaria and Yellow fever outbreak brought hardship on the traders and slaves. To combat the epidemics, the Portuguese doctors were called upon to look after the traders and to confirm if the slaves were fit to travel across the Atlantic to Europe. Thus, the first doctors that came to Nigeria were these doctors who were meant to treat the traders and slaves in order to ensure no loss of profit. The slaves and the traders were not attended to because it was rare to see a doctor who could volunteer to treat them. This shows that social strata and inequality have always been in existence. By the year 1789, it became mandatory for all ships conveying slaves to have at least a physician to examine their physical and mental health. Colonial masters and Missionaries brought Western Medicine into Nigeria( read about modern medicine and its advantages here) and has become the official medical system ever since. It came as an alternative medicine to indigenous system of health care. Among the Missionaries, the Catholic Church took the lead, followed by the Church Missionary Society (C. M. S). The missionaries forced 12 medically qualified doctors to West Africa of which 5 were sent to Nigeria. The first hospital in Nigeria is The Sacred Heart Hospital which was established by the Roman Catholic Mission in Abeokuta in the year 1800. This hospital was fully established years later and by 1886, the Catholic Nuns sent a crew of sisters as nurses and medical practitioners to the hospital.

Afterwards, the health care system began to gain grounds in other parts of Nigeria. In 1870, the colonial government established some hospitals in Lagos, Calabar, and other parts of the country. Between 1893 and 1914, medical stations have been established in the North and in places like Kano, Jos, Nguru, and Maiduguri. In 1928, hospitals spread to Eastern parts of Nigeria. The first Medical Training Institution was the Yaba Medical Training College in 1930, which came into operations ten years later. The institution was meant initially for the training of medical assistants. The Ministry of Health was established in 1946 to control health services in the country irrespective of the founders of health institutions. The University of Ibadan which included Nigeria’s first full Faculty of Medicine was established in 1948. University College Hospital (U. C. H), Ibadan is an annex of the U. C. H, London. The adoption of the 1978 Alma- mater declaration of primary health care further increased the provision of health care facilities, and since then had expanded in Nigeria all through the 1980s and 1890s, but with problems. The Roman Catholic Church, who was the greatest body that brought modern medicine into Nigeria, also helped in training brilliant Nigerians. Scholars and brilliant students were sponsored by the Missionaries and sent out of the country to be trained in medical field and related fields (paramedics). They also provided elementary schools for basic education.

The World Recession also affected the health sector. Inflation in prices, devaluation of Naira led to the inability to purchase medical equipment. Government hospitals lost their standard of operations and people started looking for better health care system. Few hospitals were available with increasing sick population. Demand for health services was higher than the available hospitals. The available ones were over-crowded, even with poor medical facilities. The private owned hospitals saw this period as an opportunity to root their establishment. Medical personnel and paramedics (medical – related personnel), drugs, equipment were being diverted to the private hospitals.

During the period of Nigerians fight for independence, the colonial health care system was subjected to oppositions. They were regarded as the “Elitists”. The early hospitals were mainly for the Europeans and later extended to their employees and their family members. It took more time before it got extended to the general population. It was after independence that the health care system was free for government workers and their families, and was subsidized for the general population. As such, health care system was for the rich few people in the country and not for the poor. Equal distribution of health practices has been one problem of Nigeria health care system.

These health care services started from secondary health care and designed to cure illness. Primary health care and preventive systems were not first the aim of the health care centers. The establishment of the hospitals then was to the disadvantage of our immediate health care systems. Most rural areas were not provided with at least one doctor, a nurse and a public health officer. Nearly all major towns now have at least one general hospital sponsored by the State government. All universities towns now have teaching hospitals backed up by the Federal government; modern medicine is now almost all around us.

4. In what way has corona virus pandemic impacted global health? Lay emphasis on the influence of culture and response to disease treatment

 Like all of you, we’ve been following the coronavirus outbreak very closely. But today I think we’d like to expand the conversation beyond the serious health concerns and look at the global consequences of the outbreak. The COVID-19 pandemic has created unprecedented disruption for the global health and development community. Organizations fighting infectious disease, supporting health workers, delivering social services, and protecting livelihoods have moved to the very center of the world’s attention. But they find their work complicated by challenges of access, safety, supply chain logistics, and financial stress like never before.

The short-term implications of this global challenge are evident everywhere, but the long-term consequences of the pandemic — how it will reshape health and development institutions, occupations, and priorities — are still difficult to imagine.

 In a matter of months, the world has been transformed. Thousands of people have already died, and hundreds of thousands more have fallen ill, from a coronavirus that was previously unknown before appearing in the city of Wuhan in December 2019. For millions of others who have not caught the disease, their entire way of life has changed by it.

The streets of Wuhan, China, are deserted after authorities implemented a strict lockdown. In Italy, the most extensive travel restrictions are in place since World War Two. In London, the normally bustling pubs, bars and theatres have been closed and people have been told to stay in their homes. Worldwide, flights are being cancelled or turning around in mid-air, as the aviation industry buckles. Those who are able to do so are holed up at home, practicing social distancing and working remotely.

It is all aimed at controlling the spread of Covid-19, and hopefully reducing the death toll. But all this change has also led to some unexpected consequences. As industries, transport networks and businesses have closed down, it has brought a sudden drop in carbon emissions. Compared with this time last year, levels of pollution in New York have reduced by nearly 50% because of measures to contain the virus.

In China, emissions fell 25% at the start of the year as people were instructed to stay at home, factories shuttered and coal use fell by 40% at China’s six largest power plants since the last quarter of 2019. The proportion of days with “good quality air” was up 11.4% compared with the same time last year in 337 cities across China, according to its Ministry of Ecology and Environment. In Europe, satellite images show nitrogen dioxide (NO2) emissions fading away over northern Italy. A similar story is playing out in Spain and the UK.

Only an immediate and existential threat like Covid-19 could have led to such a profound change so fast; at the time of writing, global deaths from the virus had passed 20,000, with more than 400,000 cases confirmed worldwide. As well as the toll of early deaths, the pandemic has brought widespread job losses and threatened the livelihoods of millions as businesses struggle to cope with the restrictions being put in place to control the virus. Economic activity has stalled and stock markets have tumbled alongside the falling carbon emissions. It’s the precisely opposite of the drive towards a decarbonised, sustainable economy that many have been advocating for decades.

A global pandemic that is claiming people’s lives certainly shouldn’t be seen as a way of bringing about environmental change either. For one thing, it’s far from certain how lasting this dip in emissions will be. When the pandemic eventually subsides, will carbon and pollutant emissions “bounce back” so much that it will be as if this clear-skied interlude never happened? Or could the changes we see today have a more persistent effect? Other ways corona virus has impacted to global health are

* Decreased air pollution:

Manufacturers are shutting down factories in the interest of social distancing, and that’s giving the planet room to breathe.By early March, the coronavirus had taken hold of China’s Hubei province. Meanwhile, energy experts were already seeing a change in China’s air quality. China’s carbon emissions were 25% lower in February compared to the same time last year, Lauri Myllyvirta, lead analyst at the Center for Research on Energy and Clean Air in Helsinki told the AP.That reduction is equivalent to more than half the annual emissions of the UK alone, according to the Center for Research on Energy and Clean Air. China’s level of nitrogen dioxide, a greenhouse gas that can cause respiratory problems and cancer, was down 42%, according to government monitoring stations.

* Animals have more room to roam:

As humans take to the indoors indefinitely, animals have begun to encroach on urban areas. In Nara, Japan, the sudden cessation of tourism has prompted herds of deer, who used to feed on food scraps left by people in public parks, to wander farther into the streets in search of a quick bite.In New Delhi, India, and Lopburi, Thailand, packs of wayward monkeys are loitering at storefronts and invading closed shops. In Oakland, California, wild turkeys were seen playing tag in a schoolyard as children are taking lessons from home.And, in the Welsh town of Llandudno, a herd of wild mountain goats had their fun while villagers watched from their windows.

* China banning wildlife trade:

Many experts have placed blame for the coronavirus outbreak, as well as some previous viral epidemics, on the notorious exotic animal trade, which includes the sale of bats, dogs, cats and more.The historically under-regulated and unsanitary industry, with a stronghold in some Asian countries, has furthermore been detrimental to populations of rhinoceros, elephants, crocodiles, tigers, turtles and pangolins.Under global pressure to reign in this black market, lawmakers in both China and Vietnam have decided to place a ban on the consumption of wild animals.“Once the pandemic is controlled and the ‘tourniquet’ can be released, I see the world paying attention to the original cause,”