Perspective

The Yamas and Niyamas in Population Health

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Don Berwick, former president and CEO of the Institute for Healthcare Improvement, has called for a new "moral era" in healthcare. He argues that the healthcare industry must change its focus from profit maximization to improving quality of care and that healthcare must be practiced with transparency and a lack of greed. "Without a new moral ethos," wrote Berwick, "there will be no winners."[1]

Yoga practices constitute three of the five most commonly employed complementary and integrative medicine (CIM) modalities.[2] However, we have observed that the foundational principles of yoga—the *yamas* and *niyamas*—have not been widely researched or systematically integrated into the delivery of yoga services. Yet in this discussion about values, ethics, morality, and health, the yamas and niyamas could make a potent contribution to improving healthcare delivery.

This article will use the yamas and niyamas (see Sidebar 1) as a foundation for discussing a new moral era in healthcare at the individual, organizational, and community levels, including exploring the causal relationship between morality and health. We define the yamas and niyamas as "morality" rather than "ethics." These words are often used interchangeably, but technically, morality refers to beliefs about what is right and wrong[3] while ethics refers to rules of behavior based on those beliefs.[4]

Sidebar 1. Yamas and Niyamas

Yamas

Ahimsa	Non-harming
Satya	Honesty
Asteya	Non-stealing
Brahmacarya	Higher awareness
Aparigraha	Non-greed

Niyamas

Sauca	Purity
Santosha	Contentment
Tapas	Sacrifice
Svadhyaya	Self-study
Ishvarapranidhana	Spirituality

Yoga Morality

Consideration of the link between morality and health dates back at least as far as Aristotle and the Stoics in the West and Buddhism and the subsequent systemization of the yamas and niyamas in the East. The Greeks linked *eudemonia* ("human flourishing") with virtue,[5] while Patanjali understood the yamas and niyamas as an antidote to "negative thoughts and actions [which] are the causes of unending misery and ignorance,"[6] and the Buddha declared that those who abide in morality will receive more "long life, beauty, happiness, and strength."[7] The yamas and niyamas, as outlined in Patanjali's Yoga Sutra, are descriptions of moral principles and

meta-ethical elaborations. They are a dual system, best understood in relationship to itself as opposed to linear, discrete principles, nested in another larger system of practice, the eight limbs of the yogic path. Buddha and Patanjali do not discuss "health" per se, but imply that a balanced lifestyle is integral to longevity and happiness. A holistic definition of health is central to the argument that the yamas and niyamas are integral to the yogic system of human thriving and self-actualization.

The yamas and niyamas can be utilized as a lens for biopsychosocialspiritual decision making. They promote prosocial behavior (*yamas*) and personal integration (*niyamas*), as well as an orientation toward a nonsectarian spirituality. While aspects of the yamas and niyamas can be found in every major religion, they can be considered trans-religious, beyond the boundaries of any particular tradition. According to Georg Feuerstein, "The foundation of Yoga, as of all authentic spirituality, is a universal ethics."[8]

While nuances of Patanjali's principles have often been debated in the yoga world, we propose conceptualizing them as an Ethics of Empathy (see Sidebar 2).

A common-language, non-Sanskritized, inclusive version of these two interdependent categories can be used to apply morality to healthcare innovation. The first category is Prosocial Behavior, which would include empathy/non-harming, honesty, generosity, holism, and sustainability. The second is Personal Integration, which would include clarity, contentment, endeavoring, self-awareness, and commitment to a higher purpose.

Prosocial Behavior

Ahimsa	Non-harming
Satya	Honesty
Asteya	Generosity
Brahmacarya	Higher awareness
Aparigraha	Sustainability

Personal Integration

Sauca	Clarity
Santosha	Contentment
Tapas	Endeavoring
Svadhyaya	Self-awareness
Ishvarapranidhana	Spirituality, surrender

The Call for Morality in Healthcare

Berwick suggests that the first era of healthcare was noble or idealistic wherein medicine was seen as inherently benefi-cent and capable of its own self-regula-tion. The second (present) era is an era of accountability, scrutiny, measurement, and markets in which we value and reimburse performance. Berwick calls for a third era that would reject the protectionism of the first and the reductionism of the second, replacing these with honesty, holism, and values.

Berwick's call for a system overhaul and identifying morality (ethics, in terms of our definition) as central contributes to historical calls for social justice, including President Obama's landmark speech in 2009 on healthcare reform.[9] Others call for designing safer systems of care,[10] the development of professional moral courage,[11] and a recently proposed 12-point code of ethics for public health that includes principles of human rights and distributive justice (a socially just alloca-tion of goods).[12]

According to the World Health Organization, lifestyle factors are the largest contributor to the global burden of disease. A conscious adherence to moral principles that help to moderate behavior is often promoted as useful for individuals looking to improve health outcomes.

These various calls for morality and ethical behavior in healthcare are notable, but because healthcare is a vast field, several levels need to be considered.

These levels include looking at morality in the context of individual behavior, moral leadership, community development, and policy making. The call for morality is a systemic one that includes bridging the individual, organizational, and community spheres, from the moral attunement of individual providers and consumers to the behavior of policy makers and leaders in organizations.

Morality and Individual-Level Health Outcomes

According to the World Health Organiza-tion, lifestyle factors are the largest con-tributor to the global burden of disease.[13] A conscious adherence to moral principles that help to moderate behavior is often promoted as useful for individuals looking to improve health outcomes. Indeed, the lifestyle advice to eat well; get enough exercise and sleep; manage stress; wear seat belts; and limit harmful foods, risky sexual behavior, and exposure to drugs and alcohol is pervasive in our culture.[14]

There has been little agreement throughout the yoga research community about the foundational position of the yamas and niyamas within the eight limbs and whether or not they are a prerequisite for "higher" levels of practice, how they should actually be practiced. For example, there is sparse reference to the yamas and niyamas in the new publication *The Principles and Practice of Yoga in Health Care*,[15] and Tim Gard and his team of researchers in 2014 found only one study that looked at the effect of the yamas and niyamas on health outcomes.[16]

Beyond the yoga community, there is little research in general on the direct link between moral behavior and health. How-ever, a substantial amount of research has begun to emerge linking spirituality and religion to health.[17] This research suggests that those who engage in religion/spiritual-ity have improved health outcomes.[17]

Religion and spirituality have been shown to positively influence a wide range of health measures including wellbeing, meaning and purpose, depression and anxiety, alcohol and drug abuse, social support, cigarette smoking, heart disease, cancer, and high blood pressure.[17] How-ever, the extent to which the element of moral behavior has specifically contributed to this improved health has not been suffi-ciently identified in the research.[18]

The benefits of one component of morality, prosocial behavior, have been well studied outside of the contexts of morality or ethics. For example, there is research from the fields of moral cognition and moral psychology that looks at how prosocial behavior reinforces the power of moral self-concept.[19] From the viewpoint of Stephen Porges's polyvagal theory, proso-cial behavior and personal integration can contribute to overall health and improved functioning of the nervous system.[20] From a related biological perspective, oxytocin, a hormone associated with bonding and caring, enhances the interpersonal trust that is essential for prosocial behavior and is the foundation of morality in every cul-ture across the globe.[21]

However, despite the benefits of morality on facilitating prosocial behavior, which can then lead to better health out-comes, placing the moral responsibility of good health solely upon the individual is ineffective.[22] Numerous studies have demonstrated that health outcomes are extremely complex and intricately influ-enced by social determinants rather than solely by individual behavior.[22] In fact, rela-tively recent research suggests that up to 70% of the health locus of control is exter-nal to the individual and dependent upon social determinants of health.[23] According to Berwick, "Among the great disrupters of health are injustice, inequity, racism, and a failure to regard healthcare as a human right. The commitment to a fair and just society, one in which equality is embraced, [is one] in which responsibility for each other is part of the fabric."[24]

If the yamas and niyamas are founda-tional to yoga and are universally applica-ble and morality is beneficial to individual health outcomes, then we need a strategy to import this theme into the healthcare context. For that to happen, we need to

demonstrate the link between the yamas and niyamas and healthcare outcomes. Embedding these principles within behavioral health programs is one possibility; however, providing evidence of their effects will be essential.

Scaling Morality to the Organizational Level

Organizational Development (OD), a field of practice developed by psychologists in the 1930s, provides a body of knowledge for understanding the application of ethics at the organizational level. OD uses research, theory, and practice to optimize organizational change and performance and to help organizations learn and adapt to rapidly changing and complex environments by transforming organizational norms and values.[25]

In their chapter in *The Principles and Practice of Yoga in Health Care*, Alyson Ross, PhD, RN, and Andreas Michalsen, PhD, suggest that the implementation of yoga lifestyle could best be effected in schools and workplaces.[15] This could

dle morality with postures or breathing practices. A critical factor will be the evidence base regarding whether the yamas and niyamas are most effective as part of an eight-limb system or as a standalone practice.

Scaling Morality to the Community Level

Translating morality from an individual level to a community level requires collaboration across all sectors, including leaders in the fields of health, behavioral health, business, education, justice, and others. Developing critical mass in community leaders who share a common ethical commitment to change is essential for improving the health of the whole community. The yamas and niyamas may provide a moral platform from which community systems can allow creativity and problem-solving capacities to emerge. For instance, strategies like Collective Impact, a problem-solving framework that addresses major social issues with an integrated community approach across domains, could utilize an adapted version of the

For example, do *ahimsa* (non-harming) and *satya* (honesty) reduce allostatic load? Does *saucha* (purity, clarity) and *svadhyaya* (self-awareness) increase gray matter in the prefrontal cortex? Does *ishvarapranidhana* (spirituality, surrender) improve heart rate variability? Does *asteya* (non-stealing, generosity) facilitate the development of the social engagement part of the nervous system? Does oxytocin increase through adherence to asteya or *brahmacarya* (higher awareness)?

In terms of the yoga therapy community, what is the process for accessing organizational ethics given the lack of collaborative focus on the yamas and niyamas? In a recent SYTAR plenary talk, Matthew Taylor, PT, PhD, noted that he has tried to promulgate the importance of risk management in the yoga community but "nobody wants to talk about ahimsa."[28] Refining an appropriate social marketing strategy that will help the yoga therapy community improve the image of yoga as a healthcare system may increase interest in yoga's other limbs, including the yamas and niyamas. Until more research is undertaken, we will continue unwittingly perpetuating the reductive misconception of yoga as asana, which minimizes the potential benefit of yoga on health.

Another area of focus could be deepening the alignment of the yoga therapy profession with the integrative medicine community, which has already been adopted into the conventional medical system. Yoga therapy could gain more acceptance by collaborating and integrating with this, our most important professional alliance, which currently has better connections with the larger healthcare community. Because yoga practices contain the most commonly used CIMs, yoga therapists are uniquely skilled at providing techniques, practices, and a worldview that can be seamlessly merged into the delivery of truly integrative care. How can the yoga therapy community better align with the integrative medicine community to offer the practices and philosophy of yoga to the benefit of the models, philosophy, and implementation of integrative medicine? One way is through user leadership development programs to propagate ethical conduct within their communities of practice. In this way, both the yoga therapy profession and the integrative medical community will greatly benefit.

> ## Relatively recent research suggests that up to 70% of the health locus of control is external to the individual and dependent upon social determinants of health.

involve using organizational policies and procedures to reward culture change, as well as prosocial behavior and personal integration choices. Organizations like Google and Whole Foods have been developing values-oriented systems, and many schools promote ethics and values as foundational to their function and purpose.

In order for healthcare to change, a broader healthcare leadership committed to a process of deepening personal and professional morality will need to emerge and collaborate. The yamas and niyamas could be used as a central reference for quality management decision makers. As with the individual level, a solid evidence base for its effectiveness at the organizational level will be required. Workplace wellness and leadership development programs could be used as a vehicle, particularly if coupled with other aspects of the yoga system. Understanding the yamas and niyamas as part of a system will be important for some, although others may feel more comfortable not having to bun-

yamas and niyamas, like our proposed Ethics of Empathy, to provide an accessible language of morality to test the decisions and actions of these community-focused organizations.[26] "Accountable Care Organizations" or "Accountable Health Communities"[27] may be a context for aligning organizational values and ethics but, again, the credibility of a yoga-based ethical system must start with research.

Areas of Focused Action for the Yoga Therapy Community

If the yoga therapy community acknowledges the yamas and niyamas as foundational, then they should likewise be specifically acknowledged as central to the professional code of conduct. While there has been a significant effort to bring asanas, pranayama, and meditation into healthcare and to back up their effectiveness with empirical data, there is also a need to study yoga's first two limbs. An important goal is to research how adherence to, or practice of, specific principles affect health.

pists, we are now also equipped with the vocabulary that will allow us to directly communicate with Quinn's doctor.

5. Assess

The fifth and final step is to **assess**. This step evaluates the effects of the treatment plan we applied in our approach. In reality, the five A's of EIP are not linear or static. As we evaluate the effects on Quinn, we may update and revise our approach as we progress forward.

Quinn's experience with FMS is only one example of a client that might arrive at our clinic door for the healing power of yoga therapy. It is incumbent upon us to maintain higher ethical and professional standards for our practice. Through scientific literacy, we are empowered to cultivate our own evidence-informed practice to add to our repertoire of knowledge and expertise to better meet the unique needs and values of all of our clients. **YTT**

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Morality, ethics, and health are tangibly linked. If yoga therapy is to move beyond the studio, then morality needs to be a part of this expansion. As a community, we have an opportunity to expand our definitions and make the yamas and niyamas an integral part of our understanding of yoga therapy. **YTT**

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