



Review Article

'Population self-reliance in health' and COVID-19: The need for a 4th tier in the health system



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ARTICLE INFO

Article history:

Received 22 July 2020

Received in revised form

15 August 2020

Accepted 16 September 2020

Available online 21 September 2020

ABSTRACT

The COVID-19 pandemic is straining health systems globally. The current international biomedical focus for disease control and policies fails to include the resource of a population's capacity to be self-reliant in its health care practices. The ancient wisdom of Ayurveda ('the knowledge of life') and Local Health Traditions (LHTs) in India understand that health is about *Svasthya*, 'being rooted within'; a concept that includes the relationship and balance between the individual, their families, communities and the environment in creating and maintaining their own health. This 'population self-reliance in health' is the focus of the 4th tier in the health system which honours and respects an individual's capacity for self-care and their inherent responsibility to the health system and its values. It encourages the inclusion of this knowledge in the creation of health systems and in the policies that direct them. Research and practice into the 4th tier will provide health systems and policy information into how communities are managing the COVID-19 epidemic. These insights will help in the creation of future health systems that are better aligned to the 'self-reliance in health' of individuals and their communities.

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"The true measure of any society can be found in how it treats its most vulnerable members" - Mahatma Gandhi [1].

1. Introduction

The COVID-19 pandemic is demonstrating that a biomedical approach to disease control alone is insufficient when considering the overall health of a population during an infectious disease pandemic. This approach fails to recognise that a population can be 'self-reliant' in its health care practices, a philosophy and perspective that is held within the ancient tradition of Ayurveda and Local Health Traditions (LHTs) in India.

This paper presents an opportunity for health systems to engage with population self-reliance in health through the inclusion of a 4th tier in the system that respects individual and community self-reliance and a community's responsibility for the

creation and production of a healthy society. The objectives of this paper are: 1) To comment on how health systems have responded to the COVID-19 pandemic with a particular focus on values; 2) To highlight the concept of 'population self-reliance in health' from the ancient teachings of Ayurveda and LHTs; 3) To present the perspective of the 4th tier of the health system and its importance in health, health systems and in health policy and systems research (HPSR); and finally 4) To use the COVID-19 pandemic as an opportunity to consider research and in particular HPSR that includes the perspective of 'population self-reliance in health' and the 4th tier.

2. Global health systems response to the COVID-19 pandemic

The COVID-19 pandemic has demonstrated our vulnerability as individuals, as nations and as a world community to deal with an infectious disease pandemic. The world order has lapsed into division, separation, and competition. However, this rather grim place offers an opportunity to listen to and learn from Asian countries, about their efforts to deal with COVID-19 from non-mainstream health cultures and to highlight the importance of ancient health traditions in the creation of health.

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Peer review under responsibility of Transdisciplinary University, Bangalore.

This pandemic has demonstrated the capacity of mainstream health system structures and processes to cope with the pandemic and the values inherent in those systems. Relationships are at the core of all health systems and the values of dignity, respect, trust, equity and social justice need to be considered [2,3]. These values help to clarify the failings in the health systems and suggest how they can be improved to encourage not only a focus on 'disease' but also on the concept of 'the production of health' [4–6]. Whether it is in India, China, South Korea, USA, UK or any other affected country, this virus has demonstrated the strengths and weaknesses of our health systems and provides a focus for future research into these factors and into the creation of more effective infectious disease control policies [6].

By July 2020, the virus had infected over 12 million people globally with more than 500,000 deaths and it continues to spread rampantly [7]. Currently, the countries with the highest death toll are those with the demographics of an elderly population, with chronic disease among the middle-aged and elderly [8,9] and with areas of high socio-economic deprivation. Over 80% of cases are asymptomatic and the death rates range from 0.6 to 3%; however, the true mortality rate will not be known accurately until the pandemic is over [10,11]. In UK, by June 2020, more than 40 percent of deaths had occurred in nursing homes [8]. Health care workers have been at high risk of acquiring the infection and a disproportionate number of deaths have occurred in these groups because of their higher risk of exposure to the virus [12–14].

2.1. Emerging health system themes

The fear instilled in the world population regarding the virus is huge. This may have been beneficial for biomedical control methods but not for the overall health of the population. Other themes that are emerging include: our vulnerability as a world; stigma; isolation; mental health problems; violence and other social determinants of health [15–19]; and our failure to sufficiently communicate and involve the population in ensuring that they work to remain healthy during the pandemic. Each individual has a responsibility to look after themselves and others; this is the nature of 'respect for others' [2] and it is an important aspect of being self-reliant in our health and wellbeing.

The overall philosophy for pandemic control in the international community has been situated in the dominant perspective/lens of the biomedical model which focuses more on outcomes and endpoints (e.g. vaccines, drugs, etc). This biomedical focus does not encourage the involvement of other ancient wisdom traditions or local health traditions where there is a strong understanding of health and wellbeing and in the 'production of health'. Nevertheless, in some countries, notably in China and India the population will be seeking the knowledge of these traditions. The Traditional Chinese Medicine (TCM) community has been involved in the infectious disease control policies around COVID-19 containment and control from the start of the Chinese epidemic [20–22], as it was with the SARS epidemic in 2002 and more recently in India where the AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy) community has been asked by the Indian Government to be partners in helping with the biomedical pandemic policy for the country [23].

Despite the rather bleak themes that are emerging, there is a counterbalance produced by the focus on care and support within all health systems. Care is about 'providing physical needs, health and comfort to someone' [24]. It is about awareness and actions, our ethics in giving attention to others. The relationships between doctors and nurses and their patients is at the core of the health system and health care workers and care-givers worldwide have been exemplary in their dedication to patients and in ensuring that

health systems continue to function in the pandemic. In addition, the roles of families, of communities and of the NGO sector [25,26] in supporting the overall health of populations has been innovative and impressive [27]. The ethics of care is at the heart of all health systems [2].

3. 'Population self-reliance in health and need for a 4th tier in health care'

3.1. 'Svasthya'

'Population self-reliance in health' and the knowledge that health is about 'Svasthya' about 'being rooted within' [28,29] is embedded in the wisdom of Ayurveda, which means 'the knowledge of life'. For example, a major part of the *Sutrasthana* of classical text *Astanga Samgraha* explains various concepts (*dinacharya*, *ritucharya*, *swasthavritta*, etc) useful for the maintenance of health and well-being [30]. It explains human health and life comprehensively and understands health as a many sided equilibrium (*samya*), which is a result of a balanced interaction and interrelations with living beings and their environment [31]. This is about 'embodied knowledge' and encourages every individual to take responsibility for their own health. It determines health through the concept of relationship with biological, psychological, spiritual, ecological, metaphysical factors which are interdependent. It extends the concept of relationship to the most subtle to the gross stage, confirming the philosophical idea of the existence of deep connections between microcosm and macrocosm [32]. This is intergenerational, bio-culturally embedded knowledge, which communities in India have been practising for generations, and it is through this knowledge that population self-reliance emerges.

3.2. The creation of the concept of the 4th tier

In 2015, discussions began between the Foundation for the Revitalisation of Local Health Traditions (FRLHT) and the University of Transdisciplinary Health Science and Technology (TDU) Bengaluru; the Society for Community Health Awareness and Action (SOCHARA), Bengaluru; Action for Community Organisation, Rehabilitation and Development (ACCORD) The Nilgiris, Tamil Nadu; and the London School of Hygiene and Tropical Medicine (LSHTM) on values within health systems. The meetings focused on the values and ethics inherent in Ayurveda and LHTs and their role in health, health systems and in HPSR. It was recognised that a system's values underlie, support and oversee the relationships and functioning of the whole system. 'Population self-reliance in health' emphasises the ethics and values in a health system; the dignity of the individual, respect for others, trust in community and the responsibility of each person and each community to contribute to the health of the population. This perspective is currently lacking from international debates on health systems and is an important resource.

In addition, it was clear that the knowledge from Ayurveda and LHTs which guided communities in India for centuries in their health care practices have gradually been eroded although not completely, by the State policy of delivering health care to the community only through professional providers. The concept of an additional tier in health care, the 4th tier, contrasting with the current primary, secondary and tertiary tiers of health systems, was developed to bring attention to these perspectives and their potential contribution to the overall health of the system. The concept of the 4th tier was developed at a meeting held at LSHTM on May 15, 2017.

3.3. The 4th tier of health care

The concept of a 4th tier implies a community owned and managed strategy for self-help in health care services, that has the potential when created effectively, to reduce the dependence of millions of households on the three institutionalised tiers of conventional health care systems, which are delivered by health care professionals, drugs and devices and managed by the Government and private sector.

The 4th tier refers to a fourth non-institutional, community and household-based tier of health care services, where in the providers are millions of knowledgeable (w.r.t. health practices) homes who practice health care for their own benefit. This tier seeks to empower communities and households with reliable self-help knowledge of health care using local foods, ecosystem specific medicinal botanicals and health and life style practices, which inform homes how to live in tune with their changing external environment and their inner nature and consciousness. This self-help knowledge of health care is derived from a profound understanding of the meaning of health (*svasthya*) which is rooted in the Ayurveda and Yoga knowledge system.

This 4th tier recognizes the importance of the individual, community and their environment within the system of life, society and ecology and aims to bring back this lost perspective and the importance of the self-reliant individual and community within the social structure, and their essential links and relationship to nature, to life and to death.

The attention of this tier of the health system is on health rather than disease and its intention is the creation of health within the health system, within communities and in the society through the values of dignity, respect, trust, equity and social justice.

4. Importance of the 4th tier perspective in health, health systems and in HPSR

4.1. Health

Different definitions of health continue to emerge in the international research literature. The preamble to the constitution of the World Health Organisation (WHO) states that 'Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'. However, despite this broad definition, health systems continue to be orientated towards disease and its control rather than on the broader dimension of the definition. This definition and a better knowledge of what the word 'health' means, continues to be discussed [33]. A meeting in the Netherlands in 2011 defined health as: "the ability to adapt and self-manage in the face of environmental, social, physical, and emotional challenges" [34,35]. This definition of health links more appropriately with the concept of health within the 4th tier. It emphasises the individual's capacity to be healthy and to balance their lives and this definition links closely with knowledge from Ayurveda and Yoga on 'health' and the concept of '*Svasthya*' [36].

4.2. Public health

Public health takes health into societal structures and delivery systems. The Institute of Medicine's definition of public health in the 1980s was 'fulfilling society's interest in assuring the conditions in which people can be healthy' with an aim to 'generate organised community effort to address the public health interest in health by applying scientific and technical knowledge to prevent disease and to promote health' [37]. This definition provides a broad philosophy for health within a population emphasising the importance of 'community effort' in the process. The public health system can

only work effectively if the population is involved and takes responsibility for the system. Governments are expected to manage our systems but each of us is also responsible for ensuring that the system runs well. 'Responsibility' is an important individual and community value within the 4th tier of health care.

4.3. Health systems

The building blocks of the health system were established by WHO in 2007 [38] (See Fig. 1) and include: service delivery; health workforce; information; medical products vaccines and technologies; financing; and leadership and governance. These building blocks are referred to as the 'hardware of the health system' and continue to dominate the way health systems are perceived and analysed.

Researchers have pointed out however, that it is important to realise that 'health systems encompass not only various elements but also the interactions and inter-relationships between not only those elements but also the various individuals within the system' [39]. These relationships not only support service delivery towards health improvement but are also central to the wider social value generated by the health system [40]. The building blocks do not alone constitute a system, any more than a pile of bricks constitutes a functioning building. It is the multiple relationships and interactions among the blocks – how one affects and influences the others, and is in turn affected by them – that converts these blocks into a system [41]. 'Individuals, interactions and relationships' are at the core of the system and this means that the values and principles that support the health system are crucial in determining how individuals behave within it (Fig. 3). The health system is a lens and guide to a society and shines a light on how it manages its population and in particular, its most vulnerable. The COVID-19 pandemic provides an opportunity to interrogate the values within our health systems.

Further structures and methodologies have emerged over the past 10 years which focus more on the processes within the health system and have emphasised the 'ideas, interests, values and norms' within a system and its policies. This is referred to as the 'software of the health system'. Fig. 2 shows the complexity of the health system and the relationship between its hardware and software components. The creation of the policies of the system is framed within 'social construction', and the social and political context. The interactions between the hardware and software occurs at all levels and arenas from the local to sub-national to national and finally to the international level.

Fig. 3 shows a perspective from Van Olmen in 2010 that emphasises the outer circles of the health system, including the population, and the values and principles that support the whole system [43]. These outer rings are important to the 4th tier perspective and philosophy.

4.4. Health policy and systems research (HPSR)

HPSR [44] is a relatively new research methodology that is still developing and addresses the different disciplines, interdisciplinary nature and perspectives that are needed to research and tackle health systems issues. This methodology is important for research on the 4th tier. It does focus on process as well as on the end-points and outcomes of policies and processes and is therefore relevant in terms of looking at the whole system and the different individuals that work, relate and live within it. It also emphasises the importance of governance and governance structures to aid the human relational processes within the health system. The methods encourage an 'interdisciplinary perspective' with links and relationships between qualitative and quantitative methods [45].

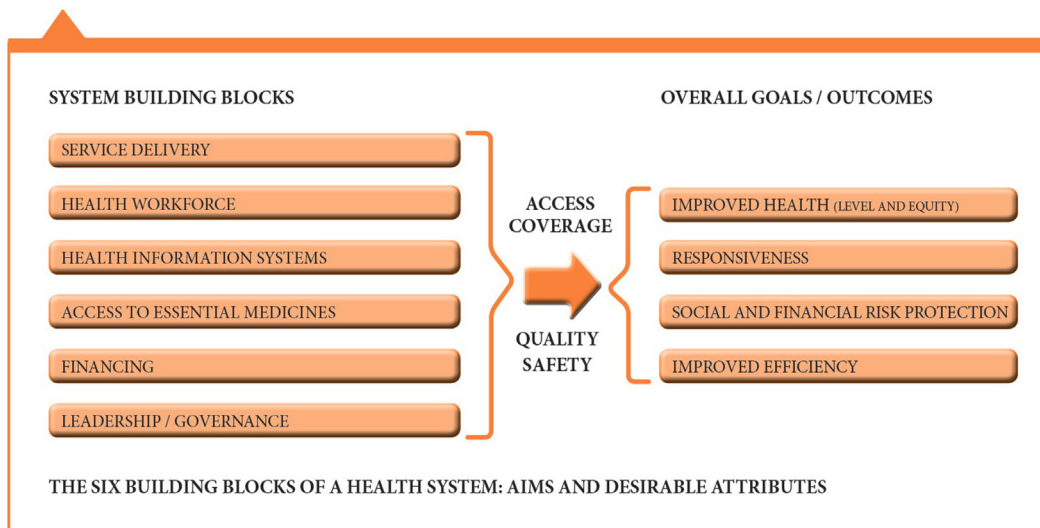


Fig. 1. WHO Health systems framework 2007 [38].

4.5. Infectious disease policy

Policies on infectious disease control that are delivered through the health system, continue to develop but remain held within the biomedical perspective and philosophy. This is the approach being used worldwide in response to the COVID-19 pandemic. At the end of the 20th century, there were debates in public health encouraging a move away from the belief that the key to health as the elimination of disease, to a concept of public health based on the creation and production of health [4,6]. This approach required a 'broadly organised social response to the generation of health and to the consumption of health services' [4] and highlighted the importance of this approach whether dealing with a chronic or infectious disease. It was argued that patterns of health are created in 'the interaction between environments and people in the course of everyday life in the individual, the family, the community, the nation and the globe' [5]. These approaches are at the heart of the 4th tier philosophy.

The creation of the concept of infectious disease policy in the late 1990s [6] encouraged a move away from a target-driven

biomedical programme for infectious disease control to a process-oriented policy approach. This enabled infectious disease control to be integrated, flexible, sensitive to global, national and local contexts, and directly involved in the creation of healthy communities [6]. This policy encouraged a 'paradigm shift' in the creation of new work on infectious disease policies with a greater focus on the processes of relationships rather than on simply the outcomes of the strategies. The shift encouraged a move from verticality to an integrated/horizontal approach; from standardised to flexible interventions; from a short-term outlook to sustainability; from targets to process; from the health sector to linkage with multiple sectors and from individual risk to social vulnerability. Finally, it suggested an ethos of partnering with, rather than on behalf of populations. This is a focus that is emphasised in a recent publications on indigenous health [46] and in a study conducted at community level by Narahari et al. in South India on control of filariasis using self-care. This study highlights the importance and role of ancient knowledge in control efforts [47].

With the COVID-19 pandemic, due to the unknown new virus, and its unknown pandemic nature, control policies have

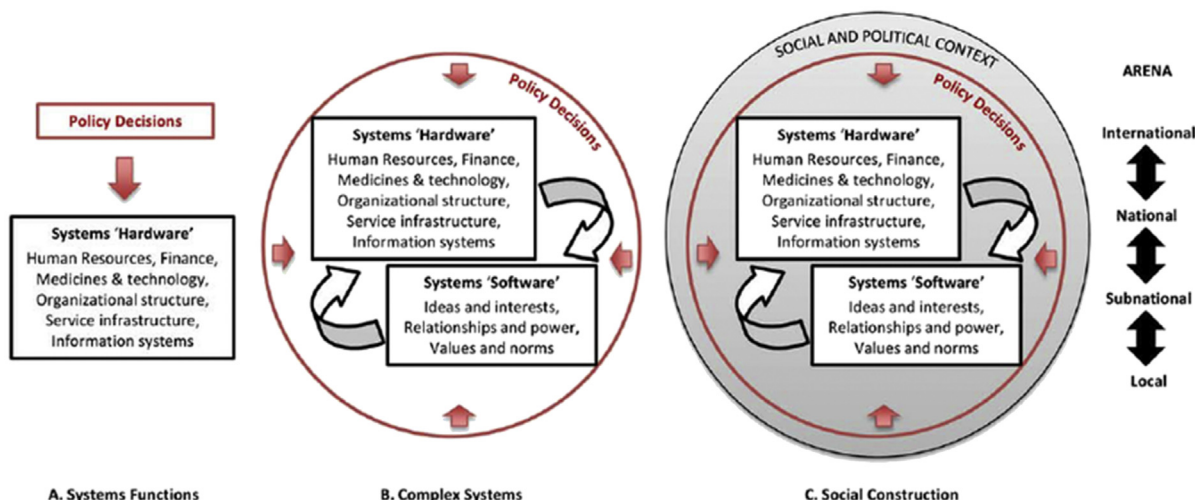


Fig. 2. Diagram of software in health systems [42].

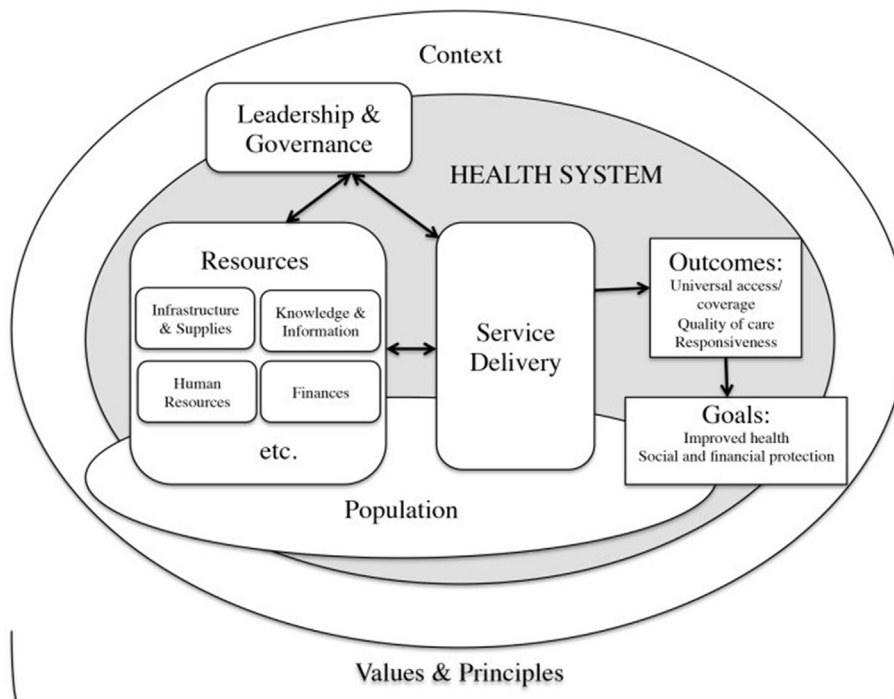


Fig. 3. Health systems framework by Van Olmen et al. [43].

emphasised the ‘targeted approach’ rather than the processes. This includes: attacking the source; interrupting the transmission; and protecting susceptible people [6,48]. The possibility of alternative structures, which include but move beyond the biomedical model to social, economic, and environmental factors, is not generally perceived as important. This means that the current perspective for dealing with COVID-19 does not take into account how infectious disease fits in to the wider concept of ‘health’ or wellbeing, nor does it look at the possibility of infectious disease programmes, whether in emergency or normal situations, being involved in the ‘creation of health’ within the health system [6]. It does not therefore emphasise the social determinants of disease. This is an area where the 4th tier has a contribution to make. Much will be learned from the pandemic and research on the processes and policies that were created during the pandemic period; these policies will highlight the societal values that were considered important in the health system response.

5. COVID-19 pandemic— An opportunity to develop HPSR w.r.t the 4th tier perspective

HPSR is an important methodology for research on the 4th tier and its complexity. The research needs to be interdisciplinary, requires mixed methods with an emphasis on qualitative methods, and will be innovative. HPSR encourages trust and the building of relationships both in the creation of the research as well as in its conduct. Uniquely, it is a research methodology that encourages research into relationships and the ‘ideas, interest, values and norms’ in the health system, its ‘software’.

5.1. Current research on the 4th tier

FRLHT and TDU have promoted community health programmes through various people centred projects over the last two decades that are relevant to the concept of the 4th tier. A large scale

programme implemented was the home herbal garden project which was spread across the country through partnership with community-based organisations, self-help groups as well as local healers’ associations. A common methodology is followed across all such community initiatives for identifying relevant, safe, and effective practices and capacity building of the communities. This consists of prioritising the major disease conditions or health-related issues in a community and identifying locally available knowledge and local recourses that are suitable for these conditions. An evidence-based manual for such practices is created through participatory documentation and rapid assessment and communities are empowered to create home gardens with these identified medicinal plants which contribute to their nutritional, health and lifestyle practices [49,50].

Such approaches have been implemented for the prevention of communicable and non-communicable diseases and for malaria epidemics; for addressing the challenge of iron deficiency anaemia; and for the prevention of veterinary conditions through the usage of ethnoveterinary practices [51]. For example, just before the monsoon season malaria preventive decoction camps are organised within the communities and these programmes have been effective in reducing malaria incidence in selected regions [52]. In some programmes such practices have been linked to local enterprises which develop simple healthcare products for supporting local livelihoods. Thus, the programme relates not just to individual self-care but to empowerment of the community in terms of improving not only health but also livelihoods while assuring the conservation and protection of local resources and intergenerational knowledge. This approach contrasts with a purely biomedical approach which focuses only on the disease and not on broader social and environmental perspectives.

This vast experience of over last two decades, has also helped TDU to facilitate community-based self-help practices for immune modulation, prophylaxis as well as secondary prevention during the current pandemic. For instance, the Chhattisgarh state healers’

association has started training communities in following self-help products and practices for immunity modulation and disease prevention.

5.2. Future Research

Future research might include some of the following themes:

1. Health: The morbidity pattern and health seeking behaviour before and after COVID-19; the impact of this new health behaviour on the health system; positive and negative impacts on individual suffering, health and well-being and how such changes reflect in different populations: rural-urban, disabled, chronic care, patients during pregnancy and in palliative care. Research needs to be developed with non-mainstream indigenous health cultures particularly in Asia and Africa. In the context of COVID-19, these cultures possess self-help remedies for prevention or protection from infections, treatment of mild symptoms at home and also measures to enhance innate immunity [22].
2. Health systems' hardware: There are many resources contained within the 4th tier that are currently not emphasised within mainstream health systems and these are some of the advantages of the 'population self-reliance' approach. For example, when the WHO Building Blocks approach (Fig. 1) and the Van Olmen Health System Structure (Fig. 3) are reviewed, certain themes emerge that are relevant to the 4th tier and need investigating to determine whether they are advantageous or disadvantageous for the health system. Currently, the infrastructure of health care is considered to be the clinics, hospitals and dispensaries and not each household and community; human resources include the workforce of the mainstream system but not the population that it serves and drugs and supplies are considered only from pharmaceutical preparations not from plants and local resources that can be made at household or community level. Sociocultural practice is not seen as important in the health system and information does not include the role of communities and Non Government Organisations (NGOs). Finally, finance does not include the population as a financial resource and in leadership and management, the power is with medical practitioners (in government as well as the private sector) and not with the people. The people also need to be involved and made responsible for the system.
3. Health systems' software: What is the role of self-care, self-help and self-responsibility in relation to health and what are the differences between these terms? If this has created a positive impact on the population, what are the ways to reaffirm the self-care and self-reliance in health albeit in an evidence-based safe manner and what is the role of our intergenerational, historical knowledge from systems such as Ayurveda as well as age old traditions? The western concept of the 'production of health' is not an Ayurveda concept which indicates that health is not produced but is inherent in a balanced state of being. Three aspects that can alter this are any genetic or congenital predisposing factors; derangement of the equilibrium through internal and external causes; and *kala* (natural changes that affect daily life), the seasons and lifespan (30).

The Ayurvedic and traditional concept of wellness has an important role to play in the broadening perspectives of global health and public health and appropriate methodological frameworks need to be created to study the relevance and evidence base of the holistic approach of *Svasthya* being 'rooted within' [53]. This concept also needs to be systematically researched in the context of its importance in self-care [54] and in primary care in health

systems. Finally, the salutogenesis concepts of Ayurveda [32] and the balance between health, stress and coping, which is important and potentially very useful in the current public health approach to COVID-19 needs investigation.

6. Conclusion

The COVID-19 pandemic has been a transformative experience in sustainability discussions. These reaffirm the need for a relook at the long discussed global perspectives on health promotion such as the Ottawa Charter as well as Health in All Policies [55,56]. At a broader level it opens a series of reflections on the 4th tier and its relation to future health systems and to their essentiality, sustainability, values and principles. How should the health policy and systems' planning change to involve self-care and self-reliance as a core principle? How do we develop an optimal plan involving health and well-being based on Ayurveda understanding? What are the health systems challenges for visualising such a personal responsibility driven, community health model? Is there a role for such an approach in the conceptualisation of health and wellness centres or any other existing institutional delivery model as currently planned in India?

Most of the focus of the COVID-19 control effort in the pandemic has been on fear, quarantine, threat and upheaval; actions which are useful to governments but not necessarily to communities and families. What thoughts have there been about the social determinants of health that the virus is highlighting? [15,57,58]. We have been sent a message to deal with the underlying causes of the pandemic and not just the current crisis that is happening because of the virus. The 4th tier provides an important perspective to help address the social determinants of health and to encourage and engage the population in their responsibility to the health system and to Universal Health Coverage (UHC).

Finally, health systems need to emphasise and focus on the values within them. These values are the balancing mechanism of the system; they are what holds the system together and what drives its actions, its ethics. The dignity of the individual is paramount, there needs to be respect for others, and trust in the communities within the system and of the different worlds and perspectives contained within them. Equity and justice need to emerge as the outcomes of the daily processes that are inherent in the health system, in how it operates, how it functions and ultimately how it heals and recovers from a pandemic. The 4th tier perspective has an important contribution to make to this process of healing and recovery and Ayurveda and LHTs have much to inform and teach health systems on this subject.

Sources of funding

None.

Conflict of interest

The authors declare that there is no conflict of interests regarding the publication of this paper. Dr. Unnikrishnan Payyappallimana, Prof. Darshan Shankar and Prof. John Porter are on the Editorial Board of the Journal, but they were not involved in the peer review process and editorial decisions related to this paper.

Acknowledgements

We would like to thank Dr Ravi and Thelma Narayan at the Society for Community Health Awareness and Action (SOCHARA), Mari and Stan Thekaekara, at the Action for Community Organisation, Rehabilitation and Development (ACCORD), The Nilgiris,

Tamil Nadu, G Hariramamurthi from TDU and all the participants of the 4th tier meeting at LSHTM, London for their work with us on the development of the concept of the 4th tier and its philosophy.

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