Why is There a Need for an Alternative Onto-Epistemic Understanding of Health for Contemporary Hunter-Gatherers?

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Abstract

The current paper illuminates existing problems and paradoxes in the perception of the health and healing practises of contemporary hunter-gatherer (H-G) communities, i.e. the Aranadan (A), Cholanaikkan (C), Kattuniakkan (K), and Paniyan (P) of Nilambur valley, Kerala, India. The health knowledge system and healing practises of the selected H-G communities are entrenched in historical context, grounded on individual as well as community experiences, deposited in environmental context and encompasses both the empirical and unempirical knowledge of healing. The studies find that the contemporary H-G's fail to acknowledge the new experience of illness caused by the diversity and fluidity of transition and displacement from the primary spatial context where beliefs, logics and worldviews were formulated. This has caused numerous serious health disparities among H-G communities. This paper argues for a new onto-epistemological model to address the new experience of illness of contemporary H-G's.

Keywords: health, healing, transition, knowledge, practises

Introduction

Hunting-gathering methods of subsistence have been considered to be the simplest form of economic subsistence and have been rendered as need-orientated means of production in which ecology itself functions as storage (Hill *et al.* 2014). These modes of sustenance practises started with *Homo erectus* in the last phase of the Pleistocene geological epoch (2 million years ago (MA)) and the functional aspects even in current times, here by no means does it imply the current H-G practises are similar of the past (Black 1975; Boyden 1970; Cohen 1989; Dunn 1968). H-G communities mostly have low population densities and are mostly family-based subsistence units. In times of hardship or scarcity of natural resources, a group of families functions as a single unit for the better management of resources and subsistence activities (Armelagos *et al.* 2005).

The present article has been designed in the cross-cultural context of four contemporary H-G communities of Nilambur valley, Kerala (India), i.e., the Aranadan, Cholanaikkan, Kattuniakkan, and Paniyan. The geographical study area falls under tropical-humid regions of the subcontinent (i.e. Western Ghat region) of India which never dries out completely. The *Carakasaṃhitā* (CaS)[3], an ancient Ayurvedic scripture, categorised tropical-humid regions under the *ānūpa* (Wetland) category of *deśa* (landscape) and is referred to as disease-prone landscape associated with morbific factors of wind and phlegm (Angermeier 2017). These communities are autochthonous, live with pre-agricultural levels of technology and are mostly endogamous. Therefore, they resemble the closest proxy of primordial food

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gatherer-hunter societies. It is important to note here that the author is by no means intending to compare the contemporary H-G's with prehistoric hunter-gatherers. Mostly, a group of families in these communities are settled together in different colonies in temporary shed-like structures, government-provided *pakka* houses, and huts but the few members of the Cholanaikkan community still practice a nomadic lifestyle and reside in natural rock shelters (*alai*) of the evergreen forest of the western ghat region of Nilambur valley, Kerala. The subsistence practises of the selected H-G communities include food gathering, small scale hunting, medical plant collection, honey collection, non-wood-forest product (n.w.f.p.) collection, fishing, and forest labourer.

Health disparities among the contemporary H-G communities are serious issues. The Lancet-Lowitja Institute collaboration report (2016) has published a detailed study entitled *A Global Snapshot of Indigenous and Tribal Peoples' Health* which shows that despite the pronounced diversity of indigenous communities, there exists a considerable amount of resemblance in their health and illnesses.

This article has critically reviewed the underlying onto-epistemological structure of the health and healing knowledge system of the selected H-G communities of Nilambur valley, Kerala and finds that one of the reasons for the health inequalities is the existing problem and paradox in the concept of health and healing practises. The study also identifies that the contemporary H-G health model is cut out of experiences of new illness caused by the transition and displacement from the primary spatial context in which beliefs, logics and worldviews were formulated. It has caused numerous serious health disparities among H-G communities. Therefore, this article argues for a new onto-epistemological model to address the new experience of illness of contemporary H-G communities.

Literature Review on Hunter-Gatherers' Health: Contextualising the Argument

Scholars have discussed that H-G's can be vulnerable to various kinds of diseases or illnesses because of their exposure to or direct/indirect interaction with plants, animals, insects and parasites, which are capable of causing various infectious zoonotic diseases (Ackerknecht 1942a; Ackerknecht 1942b; Ackerknecht 1945; Ackerknecht 1946; Armelagos *et al.* 2005; Armelagos and Barnes 1999; Audy 1961; Barnes *et al.* 1999; Black 1975; Boyden 1970; Cohen 1989; Dunn 1968; Eaton *et al.* 1988; Orman 1971). Scholars have also highlighted the possible situations for interaction with disease vectors during gathering, hunting, taking prey to the home after hunting, consuming contaminated prey or food, as well as bites from insects, snakes and other organisms (Armelagos and Barnes 1999; Armelagos *et al.* 2005). Other factors like seasonal change, dietary shift, and accidents or injuries have also a significant inclination towards health problems (Black 1975; Barnes *et al.* 1999; Cockburn 1971; Ungar and Grine 2006; Groeneveld 2018).

However, a plausible number of well-founded studies have pointed out that among the family level H-G unit or communities which are characterised by low population size, density and weak social network are less susceptible to infections and contagious diseases because they regularly change habitational place, have less proximity with animals and other humans, and accumulate less waste at habitation sites (Fábrega 1997; Hill *et al.* 2011; Grove *et al.* 2012; Hill *et al.* 2014; Holmberg 1969; Katz 1982; Kessler *et al.* 2017; Kessler *et al.* 2018). Environmental factors like high and low temperature and seasonal change can also cause health problems (Ackerknecht 1946; Fábrega 1997). On the other hand, the compelling shreds of evidence from studies on historical epidemiology, medical anthropology, and archaeology put forward cogent arguments that if the H-G communities are shifted to permanent settlement in a particular place, shift their diet pattern, and are having a larger size, higher population densities and a complex social network, they are more prone to infectious diseases, contagious diseases, epidemics, and chronic diseases (Fox 1988; Fried 1967; Harris and Ross 1987; Harwood 1970; Holmberg 1981; Johnson

and Earle 1991; Kleinman 1986; Laughlin 1963; Mascie-Taylor 1993; Service 1975; Trinkaus 1989; Tooby and Cosmides 1990).

The literature indicating health and healthcare practises of the H-G community (in general) has largely focused on the characteristics of diseases and illness of the H-G community and the descriptions are mostly from a non-indigenous or outsider perspective. These studies calculate health essentially in bio-statistical terms like nutrition deficiencies, maladaptation, the period of sickness and diseases, and inclination towards more serious diseases. It defines health as the absence of disease, adaptation, and maximising human potential (Groeneveld 2018; Kessler *et al.* 2017; Kious 2002; Lee and DeVore 1984; Richmond *et al.* 2007; Ungar and Grine 2006). These descriptions are arguably problematic because of indisputable differences in cultural experiences, worldviews, and beliefs between the indigenous (H-G communities) and non-indigenous (outsider researcher) populations (Richmond *et al.* 2007). However, many studies have tried to explore the indigenous concept of health by focusing on the science, nature and extent of indigenous medicine, use of indigenous knowledge in primary health care services, and hunter-gatherer lifestyle as a model in public health (Durie 2004; Gallagher 2019; Guite 2010; Kleinman, 1978; Saklani 1992; Maher, 1999; Rajendran and Rajan 1999; Richmond *et al.* 2007; Rankoana *et al.* 2015; Salali *et al.* 2016; Pontzer *et al.* 2018). Hardly any serious attempt has been made to explore the philosophies and views of H-G communities on health and healing knowledge systems.

Methodology

Data Collection

The data has been collected after a social survey and semi-structured questionnaire. A purposive sampling method was used for the selection of the colonies and a convenient sampling method was used for collection of in-depth interviews (IDIs) and focus groups discussion (FGDs). A total of 18 colonies ($A_{n=4,}$ $C_{n=2,}$ $K_{n=6,}$ $P_{n=6}$) were visited. The sample population includes both the male and female population with a mean age of 51.4 years (yrs). The data informing this article comes from both the primary and secondary data sources. The primary data collection includes the sources (I), qualitative data in the form of in-depth interviews (IDIs) and focus groups discussion (FGDs) and ethnographic data were collected in the form of observation (both participant and direct). The FGDs have an average of six to seven respondents, mostly men and few women and the age of the group is between 45 and 65 years. Secondary data is collected from government reports like the Integrated Tribal Development Project (ITDP) reports, Kerala Forest Department (KFD) report, Grama Panchayath offices data, census records, and previous research.

Data Analysis

To interpret the collected qualitative data, the abductive approach was undertaken. The data analysis was conducted through the following steps:

1. Step I: transcription of interviews in textual form. It is important to note here that the interview was recorded in Malayalam and H-G communities' native language and was later translated and transcribed into English.

2. Step II: Content and framework analysis.

    a. Identification of pattern, connections, and themes: The words and phrases are related to H-G communities' conception of health, recognition and categorization of diseases (serious and non-serious diseases), method of diagnosis, knowledge of medicine, the decision-making process for the selection of medicine, and mode of treatment.

b. Formulation and application of codes: Two types of coding method were used, i.e., open coding (to organise raw data and determine the frequency, similarities, difference, relationships and contexts) and axial coding (to identify interconnection and link, to map the shift of content, and to see overall emerged pattern). The coding was done manually but with the help of Nvivo 11.4 and ATLAS.ti 7.5.16 software.

3. Step III: Data comparison. After doing systematic coding of data (IDIs and FGDs), all the abstract codes and categories were compared with field notes of passive observation, secondary data, and literature reviews to verify the exactitude of interpretation and internal reliability of codes.

Ethical Consideration

The researcher had duly taken the permissions from Schedule Tribe Development Department (D3-19920/19) Thiruvananthapuram, India, and Department of Forest, Government of Kerala (KFDHQ-5757/19-CWW/WL10) Thiruvananthapuram, India. Each H-G community agreed to voluntary participation and informed consent was obtained from all the individuals before data collection.

The Concept of Health among the Selected H-G Communities of Nilambur Valley, Kerala

The selected H-G communities perceive health as (a) the individual's normal functioning behaviours and abilities, and (b) the individual's causal contribution to the larger socio-economic goals pursued. For example, on an answer to the question of 'how do you know that a child or someone is sick or unhealthy in case he/she doesn't tell himself/herself?'[4]. The common responses from the chosen H-G communities of Nilambur valley, Kerala were as follows:

> ...the mother can understand the mood or condition of the child. It's a common phenomenon. Once they get the disease they stop playing with other children, eating less, always crying, etc....[5]

> ...the older generation people have knee and back pain issues, so they are no longer able to come with us in the forest...[6]

Health has a social context among these communities, unlike western bio-statistical calculations. For example, pregnancy is considered a productive work and a contribution to the larger social goal, i.e., producing progeny. Not only do H-G communities perceive health and illness differently from western or non-indigenous systems, but also in their rationale many of the bio-statistical explanations of diseases/illness (for example, skin, respiratory and gastrointestinal diseases) are considered as non-serious. The scope of causal explanation of diseases or disease vectors among H-G communities is also culturally disparate from the western-centric approach (WCA) (Anderson and Kirkham 1999; Coward and Ratanakul 1999; Fábrega 1997). Contrary to the WCA, H-G communities have both a naturalistic and supernaturalistic explanation of diseases with the aid of native logic and healing methods for the diseases. These explanations include cultural relative experiences, beliefs, worldviews, values,

[4] This was a common question asked during the IDIs and FGDs recording among the H-G communities (A, C, K, & P) of Nilambur valley, Kerala. The IDIs & FGDs were recorded between December 2019 and March 2020.

[5] This was the common response from all the selected four H-G communities (A, C, K, P) of Nilambur valley, Kerala. But this particular extract is taken from the reply of a woman of A-community from Kattupara colony during FGD in February 2020.

[6] This quotation is from the K-community from Kulbalpara colony. This was a response to the question cited above. It was recorded during FGD in January 2020.

metaphoric mind,[7] imaginations, and knowledge about plants, animals, and landscape (Anderson and Kirkham 1999; Coward and Ratanakul 1999; McDonald 1999). This 'metaphoric mind' involves the supernatural agents from either immediate or distant external groups (which are both benevolent and malevolent) to expound causation as well as perform healing for a certain kind of disease or illness (Cajete 1952). In short, the ethno-philosophy of A, C, K, and P associates the root cause of health problems to natural causes (like heat and cold), to supernatural intervention (god's anger, spits, and evil eye), and to outsider effects. In their causal explanation of diseases, the inferences are also connected to direct and localised everyday experiences. Whereas the healing methods involve (a) knowledge about the plants and their secondary compounds, animals and their by-products, water, soil, and other minerals, (b) special sets of skills like massage (*Pidichukodukkal and Oddanereyaak*al [in C-community]), (c) treating with the help of mantras, magico-medicinal practises, and (d) removing of a malevolent external agent, amelioration by veneration or sacrifice to the specific god/ancestral power or location (*Orissadu, Koriorissadu, Daivaadal* [in C-community]).

Among the chosen H-G communities knowledge related to health problems and therapeutic remedies are associated with the subsistence behaviours of individual community members and stored as collective knowledge in the cultural cloud and ecological context (outside the mind and body of an individual). The members of the H-G communities involved in self-medication/self-healing processes by altering/modifying the diet, application of ecological knowledge, and in some cases getting assistance from the immediate family members, neighbours, or kinship members. This assistance includes sharing of medicinal knowledge, sharing of medicinal material, use of special sets of skills, and caregiving. If the disease or illness is serious, unfamiliar, life-threatening, or produced by systemic diseases at that time, then it requires the expertise of a professional healer from outside of the respective community.

The Current Condition of H-G Communities of Nilambur Valley and the Problems and Paradoxes in Health/Healing Knowledge Systems

The Current Condition of Selected H-G Communities of Nilambur Valley

H-G communities of Nilambur Valley, Kerala are currently undergoing fundamental changes in their structures as well as subsistence strategies. This transition is the outcome of transformation from hunter-gatherer societies to sedentary societies. The major force behind the transition is the effective implementation of nation/states policy of inclusion of H-G communities (or nomadic or tribal/indigenous) into the mainstream developmental goals. For example, this includes the provision of places or *packed* houses for permanent settlement, making public distribution systems (PDS) available to the people of the society, and the policies of converting nature into natural resources under the ownership of state (like forest regulation on hunting or conflict over space). However, other factors like unavailability of forest products in the near vicinity, market (or trade) demand, and economic forces are also the reason behind the transition of H-G communities at a fundamental level as well as subsistence level. The transition has also brought a change in the pattern of livelihood, living conditions, population size and density, relationship with the environment and proximity with animals. The reduction in animal (as well as human) migration has increased the possibilities of infectious

[7] Cajete (1952) in Native Science: Natural Laws of Interdependence described the metaphoric mind as 'the oldest mind and has been evolving approximately three million years. Parallel to collective evolution, in individuals it develops from birth about the time a child begins to learn language and eventually recedes into subconsciouses'.

diseases caused by the new proximate relationship and reciprocal transmission of disease vectors between human and non-human populations. The sedentary settlement has exposed the population to human and animal waste and contaminated water, which can also cause diseases among the community members.

On the other hand, few sections of the H-G communities are resistant towards the fundamental changes in the structures (or relationship with landscape or ecology) as well as subsistence strategies. These sections of the community reside deep inside the forest and prefer to live their life in isolation or have minimal interaction with outsiders or other communities. These sections of H-G communities are in a quandary situation and constantly negotiating between the novel and traditional experiences. While community sections with low resistance and reside in forest fringes have a constant interaction with outside communities and are involved in constant trade of goods, views, culture, and tradition.

For example, shifting from hunting-gathering to sedentism makes societies vulnerable to disease vectors originating from meagre waste and faecal managements, diet shift increases the risk of diseases originating from vitamin and mineral deficiencies, change in population density and social structure increases the risk for infection, and proximity with animals (due to sharing of common spaces) upsurges the risk of zoonotic disease (Armelagos and Barnes 1999; Armelagos *et al.* 2005; Audy 1961; Barnes *et al.* 1999; Cockburn 1971; Eaton *et al.* 1988; Grove *et al.* 2012; Hill *et al.* 2011; Kessler *et al.* 2018; Lederberg 1998; Livingstone 1958; Orman 1971; Simmons 1989; Sprent 1969; Wadsworth 1984).

These are the factors that make health a dynamic phenomenon because diseases have a physical essence and are placed in the physical body (Fábrega 1997). If this is the case, then perceiving health problems (or diagnosing diseases) and the construction of healing mechanisms through static beliefs (with the help of 'metaphoric mind' and imagination) and native logics might be problematic because it will fail to accommodate the novel experiences of illness.

The Paradox of Static versus Dynamic

It is discussed in the above section that the transition to sedentism can have an adverse impact on health. This major shift in food habit (omnivorous, balanced food to *Kanni*, a dish prepared of rice and salt and the occasional addition of fishes and crabs) led to the nutritional imbalance causing diseases like anaemia (in females and children) as well as vitamin deficiencies that lead to night blindness. But in H-G communities' perception of health problems, these newly formed diseases have no reference because they perceive health through static native logic. Not only the novel problems, but also problems like skin diseases and other short-term infections have no scope within the health problem perplex. This forms a paradox of static versus dynamic perception of health and healing among H-G communities.

Instead, healing in the medical literature has been defined in various ways. Kok's (2016) definition of healing, i.e., 'restoring the person to the life context', seems closer to the H-G's dimensions of healing (Kumar 2020). Among the selected H-G communities, two dimensions of healing can be perceived, i.e. the dimension of individual healing, which involves personal health and healing of mind and body through spiritual and emotional healing and dimension of collective healing, comprises cultural wellbeing along with individual wellbeing. Both the healing model has two parts (a) diagnosis and (b) treatment/application of therapeutic remedies. The diagnosis of diseases and illness incorporates the close observation of (long and short term) behaviour, normal functional abilities, touch, and change in colour (of the body or body waste), temperature and other psychosomatic changes. This method or step of diagnosis is neither uniform nor universal for all H-G's. Whereas the steps of treatment/application of therapeutic remedies indulge caregiving (both from immediate or distant community members), use

of herbal medicine (mostly the primary component but in some cases secondary component) and animal products. Insofar as the dosage is concerned there is no definite measurement or interval because it is believed that their medicine has side-effects. But in a practical context, this depends on the severity of diseases and age of the person. The horizon of knowledge of medicine for diseases ranges from commonly encountered diseases (like fever, cough, cold, headache, stomach pain, tooth pain, ear pain, back & bones pain, wound or cut or injury, skin disease, menstrual pains, snake bites) to uncommon diseases (like-cholera, mouth cancer, tuberculosis diabetes, chickenpox, fertility-related issues, etc.).

These domains of healing are based on ethos and philosophy of life (as discussed in the earlier sections of the articles) in which nature is culturally constituted and personified to establish an emotional relationship with ancestor, ecology as well as with nature. It implies that H-G communities venerate nature (animals, plants, rivers, mountains, non-human organisms) not as the external world of physical substance but as mother and father. For example, unanimously all the four tribes venerated (discussed above) *Maldivian* (the mountain god) as a father. This is because nature caters their needs and is a source of all kinds of foods, medicine, and other requirements. However, there does exist a degree of variance in lived experience, meaning-making processes, and 'imaginatively constructed' myths, religion, ceremony, and other practises among the H-G communities of Nilambur valley.

The knowledge of healing among H-Gs are also vested in the collaborative model of economic production, and they store this knowledge in an ecological context, outside the mind and body in the form of image and action (like growing area/place, colour, and shape, etc.). This has created an eco-cultural cloud for the repository for social learning and collective intelligence for information transfer to the next generation. But the information has been governed by the rule of secrecy and sacredness to protect (both in terms of purity as well as misuse) knowledge and claim ownership over it (Kumar 2020).

> The plant grows among rock. I don't know the name, but I can identify it. If you have any doubt about medicines let me show you the plant (not clear the name) and reveal how to consume it.[8]

> ...I don't know the name. It grows near the river. He (a member of Kattunaickkan colony of Kumbalpara, Nilambur Kerala) had a bone fracture and applied that paste...a creeper used for bone fracture when it grinds it turns into yellow colour ...We do not use these names. When we need it, we just collect it.[9]

It is clear from the above description that H-G communities' practice of ecological and social storage is very significant for healing. The interconnectedness and relatedness with the landscape stimulate a sense of belonging and historical connection (in spatio-temporal context) which was the core of the caregiving model of healing. The transition or displacement from traditional land may result in the dismantling of experience, eradication of previous models, the annihilation of interconnectedness and relatedness with the landscape. Therefore, the small change in landscape/environment may have a larger impact on health management mechanisms.

Likewise, the perception of health through static beliefs and logic, the healing models among contemporary H-G communities are also guided by the ancestral repository of knowledge. The later generations have not contributed any new knowledge to the repository despite the experience of the

[8] A member of the C-community has responded during the IDIs on the question of 'can you tell the name of the plant of which you are discussing?'

[9] During FGD at K-community at Kumbalpara colony, one of the members replied when the researcher asked the name of the plants.

need for new knowledge to cope with new kinds of diseases. The lack of innovation and research in the domain of healing made traditional healing mechanisms very static, too.

Discussion and Conclusion

Anthropological studies mostly focus on the content of indigenous knowledge by describing and documenting the knowledge system of indigenous people and overlook the factors behind knowledge variability: who knows what and why (Service 1975). Knowledge variability is an important component of health and healing models of H-G communities because of its relation to both the socio-economic factors and cognitive factors (Service 1975). In any discussion on health, the knowledge-biology relationship becomes very critical for the reason that it not only comprises physiological and biochemical factors but rather represents a complex, innate, cultural understanding in a particular social context. Therefore, the epistemological and ethno-ontological understanding of health and healing becomes very significant in H-G communities' cultural context.

H-G's conception of health and survival is a continuous process and mostly implicates the *posteriori* (i.e., based on previous experiences) perspective of both the individual and collective understanding to maintain health (Kleinman 1986). It comprises knowledge acquisition, intergenerational transmission or diffusion and knowledge transformation processes. But these knowledge and experiences are a culturally specific dynamic mixture of tradition and present intervention which comprises of native belief systems, empirical apprehension, and worldviews. It also involves various dimensions of life (i.e., intellectual, physical, emotional, and spiritual) and establishes a transpersonal relation with another non-human organism (such as animals, plants, spirits, ghosts, ancestors and gods) for the perception of health and designing the dimensions of healing. In Laughlin's (2013) terms, this 'polyphasic culture' of transpersonal experiences and meaning-making processes guide people to develop numerous symbolic and ritual methods for the perception of health and healing methods (Kleinman 1986). This eventually situates the conception of health in a trans-historical context where the past, the present and the future co-exist simultaneously.

It is important here to contemplate whether this onto-epistemic model of health and healing is applicable when a society or culture is going through the rapid transition of socio-economic practises, demography, social relation, and structural transition of functionality and subsistence pattern (as mentioned in the above case study). The phase of transition is important for the onto-epistemic understanding and conception of any knowledge system for the reason that transition involves the alteration of worldviews due to the process of bi-culturalization, cross-border exchange, geophysical relocation, and change in social networks. The first layer of transition brings about change in cultural framework related to working experience, cognitive processes, ontogenetic history of a particular social framework, the cultural pattern of meaning and experiences, thought, feeling, action and mode of being. This diversity and fluidity of transition transmutes characteristics of the individual as well as society, norms, customs, values, beliefs, artefacts, the medium of symbolic resources (which is accumulated and translated across generations), and decision-making processes.

These fundamental changes, in turn, reflect in the new relationship with the environment, self-other interaction and interdependence between self and sociality. The shifting of meaning, experience and disposition of beliefs become very crucial to implicate *a posteriori* perspective on health and re-establish a transpersonal relationship with non-human beings. The repositioning and calibration of social relation and negotiation with adapted cultural practises create confusion, emotional & social dis-functioning and cultural drift, which leads to change in the symbolic structure of the meaning-making process, dynamic reconstruction of meaning, self-repositioning and at last self-transformation.

However, the second layer of transition is intergenerational conflict over worldviews, belief, and values. This conflict is more pertinent in a society where the population ratio of old versus young is skewed towards one or the other. The older generation tends to protect the traditional worldview belief and values whereas the younger generation operates from the altered cultural model with diverse worldviews, beliefs, and values. This conflict over operational models asks for a new onto-epistemic understanding of the current situation and develops a model which is adaptive as well as accommodative.

The H-G communities' knowledge of healing doesn't only involve simple diagnosis, labelling and treating the diseases/illnesses, but also incorporates the process of explanation and evaluation in which culturally specific truth and belief has a significant place. But due to transition and cultural diversification, the truth and belief of ethno-epistemology continuously vary. This disposition of culturally specific belief and truth urges for a new cognitive model to accommodate new experience and develop alternative knowledge management and meaning-making processes that are more inclusive and accommodative to capture the new experience so that health disparities can be addressed, and health can be maintained for better survival.

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