# Adding meaning to medicine

## – Taking subjective perspectives of medical doctors on medicine

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## Abstract

This study explores perspectives on alternative medicine and digital healthcare technologies among medical doctors in Taiwan, Sweden, and Cuba. The research methodology utilizes semi-structured interviews. Symbolic interactionism is employed to frame and compare the behaviour of medical doctors in cross-cultural settings. The norms identified are evidence and non-evidence-based. These norms shape and influence an individual's behaviour towards alternative medicine. Moreover, the results reveal many issues regarding digital healthcare technologies, such as: symbolic meanings, purposes of usage, expectations, problems, and possible solutions.

*Keywords:* evidence-based, alternative medicine, symbolic interaction, digital healthcare technologies, health communication, stakeholders in healthcare.

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# Abbreviations

| | |
|---|---|
| AI | Artificial Intelligence |
| Apps | Applications |
| CAM | Complementary and alternative medicine |
| CT | Computerized Tomography |
| DCMP | Department of Chinese Medicine and Pharmacy |
| FB | Facebook |
| FDA | Food and Drug Administration |
| MD | Doctor of Medicine |
| MS | Master of Science |
| MRI | Magnetic Resonance Imaging |
| NHI | National Health Insurance |
| TFDA | Taiwan Food and Drug Administration |
| WM | Western medicine |

# 1. Introduction

## 1.1. General

Healthcare and medicine are important areas of sociology and have always been in rapid transition in response to scientific and societal developments (Karvonen et al., 2018). In the healthcare system hierarchy, doctors symbolize the most powerful profession (Clarke, 2013). In the medical profession, doctors assess and judge old and new treatments based on formal medical knowledge, treatment, and practices (Clarke, 2013). This is done through a social process, which is of general interest, and thus, how medical doctors relate to and navigate around differences in practice and changes needs to be understood. It is especially interesting when, under certain settings, doctors find themselves restricted to choosing alternative forms of treatment (Clarke, 2013) and sophisticated medical technology is surrounded by conflict and disagreement (Clarke, 2013). From this point of view, how medical treatment is subjected to the influence of social processes and is not solely the result of scientific fact triggers argumentation for an opinion and how these discursive devices both allow and limit opportunities to investigate knowledge claims. Medical doctors often use specialized terminology that patients do not always understand. Due to this communications gap, there is potential for conflict (Clarke, 2013). For example, due to technological changes, new professional language and settings may make it harder for medical doctors to assess and reflect about current technology.
Various sociological approaches have been employed in the analysis of healthcare systems, such as functionalism, conflict theory, and symbolic interactionism (Bourgeault, 2010). Symbolic interactionism offers a theoretical/analytical perspective of the world by the participant. It is an approach that analyzes how micro-level interpersonal experiences create a sense of society and vice versa. Symbolic interactionism is the construction of three assumptions: (1) individuals strive and act towards that which represents meaning for them, (2) meaning arises out of social interaction, and (3) meaning is dealt with and modified through interpretive processes (Serpe and Stryker, 2011).
The next subsections will be described the focusing areas of this study, such as: allopathic medicine, alternative medicine, and digital healthcare technologies.

### 1.1.1. Alternative and western medicine

The future of sociology depends on engagement with biology and, most probably, on the sociology of disease (Manning, 2019). The social perspective of healthcare could potentially lead to better understanding of this area along with new insights and challenges. One major aspect of sociology is concerned with how institutions influence the actions and decisions of individuals. This shaping of the individual reflects features of social life and further interactions (Burbank and Martins, 2010).

Medical sociology describes the social and cultural settings that affect illness, health, and medical practices (Kaminskas and Darulis, 2007). Medical sociology has developed due to the need for knowledge in the healthcare field and symbolizes a substitute perspective to the prevalent view in the medical community that identifies illness and health mainly in biomedical or psychological terms (Kaminskas and Darulis, 2007).
Conventional, or Western, medicine and alternative medicine have different philosophies and histories of development (Pérard et al., 2015). Western medicine is practiced by healthcare professionals, such as medical doctors, physical therapists, and psychologists. Western medicine (also known as allopathic medicine) is based on the diagnosis of disease and its treatment (Whorton, 2004). Alternative medicine refers to medical and healthcare systems, including products, which are not considered part of general medicine (Western medicine), such as traditional Chinese medicine, homeopathy, chiropractic, acupuncture, etc. (Lindquist et al., 2018).
Taiwan has two medical systems that are governed by the Taiwan Food and Drug Administration (TFDA) and the Department of Chinese Medicine and Pharmacy (DCMP). The TFDA governs Western medicine, and the DCMP governs Traditional Chinese Medicine (TCM) (Wang and Wang, 2018). Sweden, however, has a homogenous medical system that is based solely on Western medicine; therefore, there is no general policy for alternative medicine, which is not officially part of the Swedish healthcare system (Oxelmark et al., 2016).
In 1959, after the revolution, the healthcare system was nationalized in Cuba. The current healthcare model is based on curative instead of preventive care (Dresang et al., 2005). Despite economic constraints, Cuba's healthcare system performed impressively well in the region (Dresang et al., 2005). An interesting part of the Cuban healthcare system is that Western and alternative medicine are incorporated (Dresang et al., 2005). Western medicine is considered "evidence-based" medicine (French, 2002), whereas alternative medicine is considered 'non-evidence-based" (Howe, 2009), and the two are practiced through different systems.

### 1.1.2. Digital healthcare technologies

In discussing the potential benefits and drawbacks of healthcare technologies, questions arise within a social perspective as to what digital healthcare technologies have to offer. Innovations bring heterogeneous objects that extend the recognized boundaries of society and spark dialogues regarding the benefits and drawbacks. Thus, social change takes place (Feenberg, 2012).
In 2005, Wired magazine reported that healthcare is the most deteriorated and simultaneously most adaptable area for innovation. However, it needs a minimum of thirty years to standardize scientific findings in the area (Zolotova and Giambattista, 2019).
New solutions often incorporate new problems, which could be in the realm of ethics, cultural values, politics, beliefs, the economy, etc. Clinical research and practices are rapidly being transformed by the digital healthcare system to help cure rare diseases and lessen "cognition error" (Feenberg, 2012, Coiera, 2015).
Taiwan, Sweden and Cuba have different histories, cultures, beliefs, and healthcare systems (Smullen and Hong, 2015, Immergut, 1992, French, 2002). The healthcare expenditure of Taiwan is 6.3% of GDP, and in Sweden, it is 11.0% (Saltman et al., 2020), and in Cuba, it is 10.5% (Geloso et al., 2020). Life expectancy in Taiwan is 80 years (Saltman et al., 2020), and in Cuba, it is 79 years (Ponce-Laguardia, 2020), and in Sweden, it is slightly higher at 83 years (Saltman et al., 2020). During the current pandemic (SARS-COV-2), Taiwan and Sweden employed digital technologies along with the manual approach, which worked well without going through a national lockdown (Whitelaw et al., 2020, Ghosal et al., 2020, Born et

al., 2020, Summers et al., 2020). However, Cuba is developing healthcare technologies in order to prevent from current pandemic (Durán, 2020).

## 1.2. Aim and research questions

Human-environment interaction is culturally bound; therefore, cross-cultural studies enrich perspectives and refine interdisciplinary rationality (Tam and Milfont, 2020). This project aims to understand and analyse the "meaning" of medicine by exploring the perspectives of the doctors and their interactions with allopathic medicine, alternative medicine, and digital healthcare technologies in Taiwan, Sweden, and Cuba. Furthermore, the doctors' subjective views are compared in order to help address social problems and shape social policy. The following questions are the main focal points:

1. *What is the "meaning" of allopathic medicine based on the perspectives of participants and their interactions with allopathic medicine in Taiwan, Sweden, and Cuba*?
2. *What is the "meaning" of alternative medicine based on the perspectives of participants and their interactions with alternative medicine in Taiwan, Sweden, and Cuba*?
3. *What is the "meaning" of digital healthcare technologies based on the perspectives and their interaction with digital healthcare technologies in Taiwan, Sweden, and Cuba*?

## 1.3. Theoretical framework

### 1.3.1. Symbolic interactionism

As Mead has described, individuals act based on a meaning which is developed through social interaction. Homo sapiens are considered to be symbol-creating animals; the sense of symbolic interaction is based on their social interaction with others as continuous discourse, where the individuals observe each other's communication and then respond. In symbolic interaction, symbols are interpreted or represent something. Thus, the interaction of individuals with an object shapes their response and behavior, which is called enactment (Mead, 1934).

One central concept of Mead's work is that of the "self," which develops through interaction between individuals and their social environment. According to Mead, the self is developed through three actions: language, play, and games (Mead, 1934).

**Language**: Language enables individuals to react to each other with symbols, gestures, words, and sounds. It expresses attitudes and opinions to a subject or an individual. Emotions can also be conveyed through language: happiness, anger, and confusion, for example (Mead, 1934).

**Play:** The self develops through different forms of role-play by an individual and conveys an expectation to others. Role-playing internalizes the perspectives of

others and develops the understanding and feelings of oneself and others in different contexts (Mead, 1934).

**Games:** Games allow an individual to develop the self by understanding the rules of activities in order to win in a particular context (Mead, 1934).

Therefore, the "self" comprehensively defines how an individual perceives "who" and "what" he or she is, which then provides a basis that determines the pragmatic importance or meaning of an object or context in relation to that person. The role of the self is crucial in bridging the gap between society and social behavior; therefore, identifying the self is greatly significant to the explanation of individual selection (Serpe and Stryker, 2011).

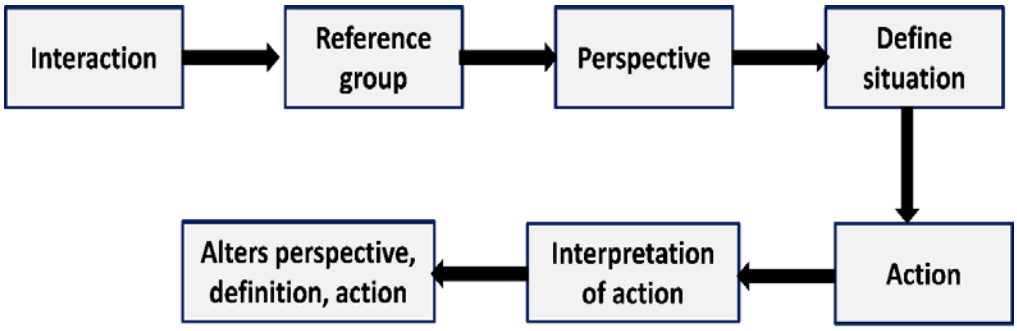


**Figure 1.** The process of the symbolic interaction approach (Burbank and Martins, 2010). Reprinted with permission by John Wiley and Sons (License Number: 5131900141193)

Symbolic interactionism stresses understanding the varying and contradictory "meaning" in different situations instead of the collective meanings across situations. Thus, the world and the individual are separate, but the world is interpreted by the individual through symbols (Figure 1). In symbolic language, what we call the "world" is a product of a mind. Therefore, the meaning of an object for individuals is based on their experience or situation. For example, the word "technology" may have different meanings for individuals interacting within different contexts. Symbolic interactionism plays an important role in the field of management to explore institutional behavior (Serpe and Stryker, 2011).

## 1.3.2. Intrinsic symbolic interaction of public health

*Identity*

Mead's work is greatly influenced by the social thinking of "self" and "identity." Identity denotes that subjectivity is neither an epistemological illusion nor a solid substance. Instead, this notion of identity provides a subjective sense of self-propagation because it absorbs the events of lived experiences that an individual can describe. The creation of new institutions, and their use of culture as rational, presumes a sequence of rational concepts: group and role identities, meaning, and multi-selves, all of which appear in organization theory. Different professional identities, related rational frames, and decision-making logics help shape legitimacy, order, and change in the legal institution. Thus, professional identities shape perceived meaning and equally change as well as stabilize the social

organization. Individuals behave in ways that convey their characteristic identities and receive validation from others. The validation process of their identities is confirmed by symbolic interactions. The study also suggests that an individual's role strongly reflects the expression of organizational identities (Serpe and Stryker, 2011).

Symbolic interactionism can be used to analyze interactions between stakeholders in the drama of healthcare systems. Such is concerned with how people develop shared meanings of health and sickness through ongoing interactions based on their subjective experiences. Therefore, individuals develop subjective interpretations of dissimilar illnesses. In certain situations, people may believe a fallacy and have negative associations to certain conditions, such as mental disorders or disabilities, and as a consequence develop a "stigma." Healthcare professionals can recognize and understand this labeling process through symbolic interaction (Link et al., 2015).

### *Stigma*

The term "stigma" refers to the condition of being discredited. When something is stigmatized, it is perceived as fraudulent, weak-willed, overbearing, abnormal, unfaithful, or ascribing to excessively rigid beliefs. The self-stigma focuses on the process of internalizing negative stereotypes, which is both a social and psychological process based on perception, interpretation, and expectation by the stigmatized individual (Link et al., 2015, Goffman, 2009).

### *Evidence-based medicine*

Science seeks to test the reality of objects by analyzing evidence in order to make declarations and then share such with the world. In this process, a hypothesis transforms into a proposal and eventually into fact. This transformation from concept into construct represents a symbolic process. The construction of scientific items is based on one or more factors for a unique characteristic. Therefore, research confirms the various characteristics of objects and phenomena. Thus, through the validation of evidence, common meanings can be maximized. Therefore, the present evidence characterizes "evidence-based symbolism" (French, 2002).

### *Dilemma*

"Dilemmas" denote the problems an organizational member experiences at work. Dilemmas appear commonly, and their characteristics within group activities can often be anticipated. A dilemma may also be described as a situation that involves actors who disagree on how to carry on. In the symbolic interaction method, dilemmas focus on the process through which a problem is perceived and interpreted (Kotarba, 2014).

Symbolic interactionism examines and compares the micro-processes that support social interaction (Carter and Fuller, 2016). Regarding illness, symbolic interactionism describes sickness as a social construct rather than simply a medical condition. The medical profession is a good example of symbolic interaction where doctors experience a "micro-level" process that comprises interaction with individual patients (Burbank and Martins, 2010). Thus, symbolic interactionism can be employed for a better understanding of various healthcare-related issues, such as the prevention of sexually transmissible diseases, the nature of bullying behavior, and the use or abuse of psychoactive drugs (Maycock, 2015).

## 1.4. Methodology

### 1.4.1. Study design

Qualitative methods were employed, as they can be helpful to achieve a more profound understanding of phenomena from the perspective of the participants. These methods also stress the meanings that participants attach to their own understandings and the pragmatic thinking behind such interpretations.

In this applied qualitative study, a semi-structured interview approach was employed to answer research questions exploring the meaning of medicine. In this context, it is believed that the world we explore exists autonomously of a participant's subjective understanding thereof, but one can only contact it through the interpretation of the participants. Participants are expected to express different realities because of their different experiences which enrich our understanding of multiple perspectives.

This study aims to portray a bigger picture of the diverse realities contained within the data collected in terms of the views of medical doctors regarding medicine in their region.

### 1.4.2. Participant sampling and data collection

Medical doctors were identified through Google searches, LinkedIn profiles, and social connections in Taiwan, Sweden, and Cuba with the expectation of diverse views on medicine. Five Taiwanese medical doctors were interviewed in-person in various cities at their office or a nearby café. Three Swedish medical doctors were interviewed via Skype or Zoom, and one Cuban medical doctor participated by Skype. This group possesses diverse backgrounds. For example: one Taiwanese doctor has both clinical and academic involvements; one Taiwanese and one Swedish doctor are full-time academic scholars with research involvements; one Taiwanese and two Swedish participants are currently residents; one Taiwanese participant is a 6$^{th}$ year MD student with internship experiences; one Taiwanese participant is a dentist; and the Cuban participant formerly worked as a resident but is currently pursuing an MS in public health.
Semi-structured interviews were used to collect data from the participants. Data collection was carried out between October of 2020 and November of 2020. Before each interview, the goal of the study was described and participants were asked for permission to allow the interview to be recorded with assurances of the confidentiality and anonymity regarding interview data. Interviews were later transcribed using Speechnotes (https://speechnotes.co/).

### 1.4.3. Reflection

Regarding fieldwork, it was an uphill battle to approach medical doctors and make appointments for interviews. The greatest problem was the low response rate. Several medical doctors were contacted around the Taipei region of Taiwan and the Uppsala region of Sweden, but few agreed to participate. Most likely, such was due to their busy schedule, lack of interest, or lack of trust. During formal interviews, the participants cooperated superbly, answering all questions posed and overlooking awkward aspects of the process. Moreover, in the case of technical

difficulties during online interviews, such as dropped calls, participants showed great consideration when reconnecting to complete the interview. Participants also displayed admirable consideration when interviews stretched past the expected thirty-minute timeframe, always seeing to the interview's completion. At one point, a doctor was suddenly recalled to hospital duty before later returning to continue the interview. After each interview, a thank you email was sent to the participant.

I am deeply grateful to each participant who helped make this study possible.

### 1.4.4. Ethical approval

This thesis is an original work by Mirza Muhammad Fahad Baig (ORCID: 0000-0002-4169-5529). In Sweden, student work at the master's level does not require formal ethical approval. A link to the Swedish ethical review authority's website follows. Unfortunately, there is no English version. (https://etikprovningsmyndigheten.se/vanliga-fragor/).

# 2. Making sense of alternative medicine

This chapter illustrates the result and discussion on alternative medicine in the context of three geographically different countries: one Asian – Taiwan; one European – Sweden; and the other North American – Cuba. It compares the three countries with the diversified mechanism of the healthcare system and the influential role that national culture plays in shaping the policies, expectations, and medical doctor behavior towards alternative medicine. Previous studies have shown that cross-cultural perspectives enrich the theories in order to determine shared aims and variation in human behaviour (Tam and Milfont, 2020).

The attitudes of medical doctors towards alternative medicine is discussed in several papers (Münstedt et al., 2011, Liem, 2019, Huber et al., 2020, Izgu and Metin, 2020). However, none of these cited examples have examined the medical doctors' subjective views towards alternative medicine by employing symbolic interactionism.
This chapter aims to understand and analyse the "meaning" of alternative medicine by exploring the perspectives of participants and their interactions with alternative medicine in Taiwan, Sweden, and Cuba. The main focus is on the following questions:

1. How do you describe allopathic medicine?
2. How do you describe alternative medicine?
3. How do you perceive the interaction between patient and alternative medicine in your country?

## 2.1. Results

The medical doctors reflected on what alternative medicine meant for them. In their explanations, the doctors used symbolic words and stories to more vividly depict their experiences. Key themes from the data to be discussed in this thesis are as follows:

- Evidence-based medicine
- Subjective views towards alternative medicine

### 2.1.1. Theme 1: Evidence-based medicine

The participants of this study are all trained in Western medicine. The participants from Taiwan, Sweden, and Cuba advocated that Western medicine is "evidence-based" medicine. The meaning of evidence-based medicine as they interpret it relies

on a series of experiments using cells from animals to develop drugs or compounds that then go through clinical trials.
"*It's very important for treatment [that] we need to do a lot of work, to do clinical trials in four steps to approve in three steps the drug. I think Western medicine [...] it's between art and science, but I think maybe science 95% and art part is 5%.*" (Taiwanese participant)
"*Western medicine […] focuses on scientific evidence […]. I mean, ideally, everything that we do and prescribe and recommend to patients has scientific evidence, and I think that's the main basis for Western medicine.*" (Swedish participant)
Taiwanese participants explained that the government sets the qualification and license for them, and it comes with the responsibility that they seek the truth. Western medicine is based on "evidence," and it can be updated based on new studies.

### 2.1.2. Theme 2: Subjective views of medical doctors towards alternative medicine

Taiwanese participants said that alternative medicine is not part of Western medicine, but it is a natural way to stop disease although lacking scientific evidence.
"*In my point of view, alternative medicine [is] just like an experience medicine and formed by the imagina[tion] and observations and lack of scientific study. I would say although there is a gap of some evidence or some scientific procedural steps, other experiences still tell [that] alternative medicine is based on experience.*" (Taiwanese participant)
"*I think Western medicine is evidence-based. In contrast, I think alternative medicine to me sometimes comes from some experience. It hasn't been investigated based on the statistical analysis of a collection of medical hypotheses.*" (Taiwanese participant)
Swedish participants described alternative medicine as medicine from Asia, such as China, or the Indian subcontinent and as different from Western medicine because of the lack of evidence. Although it may sometimes work, it is in conflict with Western medicine.
"*Alternative medicine… I don't have an understanding about it, but my concept[ion] about it is that it's basically the medicine or the part of the treatment which were before allopathy was recognized or something like I would say Chinese medicine or Ayurvedic.*" (Swedish participant)
"*Traditional (alternative) medicine […] doesn't have to have the same degree of evidence-based [support …] but I guess it's more common [in places] like China.*" (Swedish participant)
The Cuban doctor described alternative medicine as another kind of treatment. More specifically, alternative medicine relates to concepts such as exercise and plant-based treatments.
Both Taiwanese and Swedish doctors said they respect the patient's autonomy if he or she is willing to try alternative medicine that does not have strong evidence.
"*It's sa[id] in Taiwanese society [that] Western medicine can treat your symptoms, but if you want to change your body characteristics [or] your body metabolism, maybe Chinese medicine is better."* (Taiwanese participant)
Taiwanese doctors said they are not afraid to discuss alternative medicine with their patients, and if the patent is willing to use alternative medicine, they advise them to consult with Chinese medicine doctors and avoid self-medication.
"*I [am] not against (alternative medicine), but because I am not specialized, […] I can say my attitude is open. And, for example, most of the time patients ask 'Can I*

*take Chinese medicine,' I [advise] them 'Please consult with [someone] qualified with Chinese medicine*." (Taiwanese participant)
Taiwanese doctors added that Western medicine has its limitations; for example, it is not effective for rare and chronic diseases. In that case, if a patient wants to use alternative medicine, Taiwanese doctors do not stop them from using it.
"*We cannot cure all of the pain, so I think I am very open. You can go to the massage [therapist]. You can go to the acupuncture [clinic] if it's helpful. I think it's not a problem. If my chronic pain patient wants to seek other help, I think it's okay."* (Taiwanese participant)
Swedish doctors said they don't recommend their patients use alternative medicine, because it lacks "evidence." If a patient wants to use alternative medicine, it is his or her own choice.
"*My perception is, you know, if somebody wants it, then they're the master of their own bodies, and they can go. I mean, […] alternative medicine is not a new thing, you know. It has been [around] thousands of years. I think if one gets benefit, [..] okay, yeah, why not? I think, as a doctor, I will not recommend anything (alternative medicine) to a patient.*" (Swedish participant)
Taiwanese doctors said that alternative medicine is more expensive than Western medicine, and sometimes the benefits of alternative medicine are exaggerated. In some cases, patients are scared to experience surgery, so they consult alternative medicine instead. This kind of consultation sometimes delays treatment and worsens the disease.
"*I am not against [it], because sometimes [the] cost [of] alternative medicine is [much more] expensive compared to our (Western) medicine system.*" (Taiwanese participant)
"*Some information is correct, and some is not. They (patients) cannot judge correctly, because of the propaganda. [It is more] attractive than what the doctor said. That's why a lot of people's paycheck [goes] to buy these kinds of products, and it's [more] expensive than seeing the doctor at NHI (National Health Insurance). And it's a big market*". (Taiwanese participant)
Swedish doctors said that due to the lack of "evidence," the efficiency of alternative medicine is doubtful, and it can be a deception to make money from the sickness. A Swedish participant explained it thus:
"S*omething might work; something might be almost a fraud, like selling some kind of pills that are supposed to cure something; and it might be just phony to make money*."
The Cuban doctor explained that visits to the hospital require the payment of fees; therefore, most individuals opt to take traditional medicine because of a lack of money.
*"I think 70% of people prefer to use traditional medicine because they know their parents and their grandma or grandpa said, 'Okay, if you take this thing, you're going to be fine and you don't have to go to the hospital.' And sometimes, it's not because they prefer to take the tea; it's because of the money."*

## 2.2. Discussion

The symbolic meaning of medicine is varied across communication settings due to different human-environment interactions (Tam and Milfont, 2020). The meaning of evidence represents research-based findings. Evidence is perceived and interpreted in various ways, such that it can be defined as knowledge based on chronological or scientific assessment, and made available to the healthcare system (Tranmer et al., 1998). Furthermore, the corresponding evidence is constructed by experiments, such as clinical trials, statistical analysis, analytical studies, published

literature, and reports. Thus, the meaning of evidence can take the form of belief, knowledge, learning through discovery, and statistical or meta-analysis (Tranmer et al., 1998, French, 2002). These boundaries control the symbolic meaning of evidence for evidence-based medicine. Governing bodies play an important role in determining which meaning is valuable; therefore, the controversial lack of consensus towards Western medicine leads to a variety of meanings regarding evidence (French, 2002).

Taiwan and Sweden have different healthcare systems (Saltman et al., 2020, Wang and Wang, 2018). Their differences reflect diverse social, legal, and historical contexts. Therefore, dealing with patients in the two countries can be quite different. A shared meaning was observed when doctors from both countries interpreted Western medicine as evidence-based medicine. Braun describes shared meaning as the origin of public relations (Braun, 2014, Carter and Fuller, 2016). The shared meaning of public relations is the intended participation in the social construction of maintaining the status of an institution and achieving institutional objectives (Carter and Fuller, 2016, Braun, 2014). Western medicine is interpreted to consist of evidence which stems from clinical trials, experiments, meta-analysis, and expert opinion.

Regarding alternative medicine, different levels of communication by Taiwanese and Swedish medical doctors can be observed. Taiwanese medical doctors interpreted alternative medicine as lacking certain evidence with the additional perspective that such is nevertheless experienced-based. Swedish medical doctors interpreted alternative medicine as that which is not allopathic, lacks proper evidence, and is perceived as Chinese or Indian medicine. These interpretations indicate the doctors use similar language and significant symbols in their communication to describe alternative medicine, despite the fact that they perceive it differently. Symbolic interactions shifted their focus to the interpretation of subjective viewpoints on alternative medicine, and such is how individuals make sense of their world (Maycock, 2015, Carter and Fuller, 2016).

Within symbolic interactionism, “stigma” refers to the condition of being discredited. If anything is stigmatized, it is perceived as fraudulent, weak-willed, overbearing, abnormal, unfaithful, or ascribing to excessively rigid beliefs (Link et al., 2015, Goffman, 2009). The stigmas attached to the population that prefers alternative medicine-based treatment are different in Taiwan and Sweden. Taiwanese doctors are concerned about patients who judge incorrectly and those who delay treatment that could have been more effective if provided earlier. Swedish doctors are concerned about alternative medicine-related fraudsters.

Even so, the Cuban doctor interpreted Western medicine as evidence-based, which is the same as the Swedish and Taiwanese doctors’ interpretations. Additionally, the Cuban doctor described alternative medicine as “another kind,” such as exercise and plant-based treatments. This interpretation supports the symbolic meaning of non-evidence-based medicine (Howe, 2009).

## 2.3. Conclusions and limitations

In this study, symbolic interactionism is employed to show how participants from Taiwan, Sweden, and Cuba make sense of their domain and behave towards alternative medicine. Their subjective meanings are important for an understanding of how medical doctors view two medical systems. The results show one shared meaning of Western medicine by Taiwanese, Swedish, and Cuban medical doctors: it is considered evidence-based. Taiwanese doctors expressed an additional meaning for alternative medicine: it is considered experience-based medicine. This

additional meaning is connected to local behaviour that is shaped by local history, social context, and regulations.
So far, this study involves a small sample of participants from Taiwan, Sweden, and Cuba comparing their subjective views about alternative medicine. This section could easily be expanded by including the subjective views of alternative medical practitioners from Taiwan, Sweden, and Cuba and then comparing and contrasting their views with those of allopathic counterparts in order to discover more perspectives.

# 3. Making sense of digital healthcare technologies

Digital healthcare technologies are rapidly transforming the healthcare system, and shaping the role of doctors and the doctor-patient relationship. There are a few studies conducted on the attitude of doctors towards digital healthcare technologies (Fiske et al., 2020, Győrffy et al., 2020), yet none has used symbolic interactionism.

This chapter aims to understand and analyse the meaning of digital healthcare technologies by exploring the perspectives of Taiwanese, Swedish, and Cuban doctors and their interactions with such. Moreover, it seeks to generate new knowledge about the good, bad, and irrelevant innovations in digital healthcare technologies. The main focus is on the following questions:

1. How do you describe digital healthcare technologies?
2. How do you describe the digital healthcare technologies in your country?
3. How do you perceive the interaction between patients and digital healthcare technologies in your country?
4. How would you define the situation in your country with satisfaction/frustration?

How would you describe the practice of medicine in your country after 10 years?

## 3.1. Results

Qualitative data resulted in four main themes, which are comprised thus:

1) Interpreting digital healthcare technologies
2) Interaction with digital healthcare technologies
3) Digital dilemmas
4) The future of digital culture

### 3.1.1. Theme 1: Interpreting digital healthcare technologies

*Taiwanese perspective*

The doctors described digital healthcare technologies as new tools that provide them with more weapons to fight against disease and as a convenient and cost-effective way to obtain reports of complex genomic testing. They endorsed digital healthcare technologies, such as electrosurgery, portable devices, and electronic charts.

*"The new technologies provide us [with] information about the specific gene related to a disease, but it's a problem if we don't have [the corresponding] treatment."*
They further elaborated that artificial intelligence (AI) is also very interesting.
*"New technology [has an] effect on our behaviour [because] it may replace some of us, but it also induces new working opportunities."*
The doctors said that it is interesting to employ AI in diagnosis and treatment, but AI needs a lot of training. AI also helps in surgery by improving the way doctors treat patients.

*Swedish perspective*

The doctors said that digitalization provides more tools to deal with patients. Software makes communication more effective during the Corona pandemic, which involves multiple applications (apps) through which doctors and therapists can exchange information and prescribe medicine. Digital tools also enable better access to healthcare for individuals living in remote areas or isolation. Moreover, digitalization benefits other issues; for example, it helps doctors know more about a patient's situation, ranging from X-rays to medicine being taken, all of which is stored in a computer data system. Thus, it is easier for doctors to keep track of patients without losing anything.
Additionally, doctors described how digitalization can help patients when used in a sensible way. Such can improve healthcare practices in part because Sweden is a large country and, as such, many inhabitants live far from their clinic. One doctor said:
*"Traditional pathologists have used the microscope for more than a hundred years, but now we can scan images on the computer, [which] helps in clinical work."*
Doctors also said that clinical practices have become more digitalized, so we can expect to use more computer applications and AI to help with diagnosis in the future.

*Cuban perspective*

The doctor described digital healthcare technologies primarily as electronic health records that maintain a patient's data regarding visits to the hospital and disease.

### 3.1.2. Theme 2: Interaction with digital healthcare technologies

*Taiwanese perspective*

The doctors said they use digital technology to obtain information about new drugs, other new technologies or injections, and even clinical trial data from the academic world.
*"When we graduated, some of the technologies did not exist. [Now, I am] learning new knowledge, so I can take my new knowledge and help my patients. It's very easy, [except my] experience using AI [is] not [as] sure."*
*"We can accept AI, such as eyescope, [for] use [in] diagnostics, and [such is] approved by the US-FDA. This kind of AI can be used in a remote area without an ophthalmologist. Since Taiwanese regulations don't update fast, it limits use of AI to remote areas. However, in the USA, they are treating patients online, but in Taiwan, it's face-to-face."*
Another doctor said it is an assisting tool and good for doctors to have advanced technology. However, regarding AI, such may or may not replace doctors but is interesting nevertheless.
*"It's like a black box. You don't know [what] it comes up with someday."*

The doctors added that X-ray, CT (computerized tomography), and ultrasound are playing an evolving role in breast cancer diagnosis. Moreover, some patients accept the use of new technology, whereas others reject it, such as many elderly patients.

*Swedish perspective*

A Swedish doctor said:

*"I think for some patients, it works very well, […] especially younger patients who are more digitally savvy. I think they are very content with having digital options for healthcare, like booking an appointment online [and] maybe having a video chat with the doctor through an app. I think for some patients, younger patients especially, it probably works very well, but it doesn't replace real human interaction, especially for the examination. I mean, we can't do any examination of the patient through a digital app, so it doesn't really replace the patient's examination and the interaction like in a clinic or emergency room. And I think it's more difficult probably for older patients."*

They said that it is good to have new technologies, because patients don't need to carry files, and all information is stored on the computer. There is a general practitioner healthcare app, where a patient can meet with a doctor easily, which increases availability to meet doctors. Internal medicine specialists can perform a cardiac ultrasound using digital healthcare. In northern Sweden, where a small population inhabits a large area, a few doctors consider it useful but think digital healthcare technologies should be used in a sensible way rather than just to save money.

### 3.1.3. Theme 3: Digital dilemmas

*Taiwanese perspective*

The greatest frustration mentioned regards aspects of patient compliance. A treatment's effectiveness is not always easy to see in the real world; many barriers are connected with the patients themselves: their level of trust in general and whether they take their drugs properly, due to time, memory, or fear of adverse side-effects. Regarding new technology and drugs, the doctors spent more time describing why they personally want to use them, what possible adverse side-effects could be, and why they would attempt to persuade patients to adopt these things. They also mentioned that patients in Taiwan often want doctors to provide the newest technology, but popular medical news is not as advanced in their society. They said patients know of new technology, but accessible information can be sparse. Taiwanese often use Facebook, but most knowledge provided there is superficial or commercial, such as a dentist posting a picture of a patient's mouth on the website to display technique. The privacy of the patient should be preserved, however, so such is not good practice. The doctors also noted that there is a defensive strategy in place. Sometimes, medical doctors want to protect themselves and request many tests, because there are too many patients, especially in the clinics. Thus, medical doctors have limited time to diagnose and explain information, as healthcare fees are inexpensive in Taiwan.

*Swedish perspective*

Doctors mentioned that due to long waiting times and few specialists at the hospital, many doctors need to perform extra administrative work. Swedish doctors see more patients than their counterparts in certain other European countries. In addition to administrative work, they also need to attend courses about how to become leaders.

*"I think the Swedish doctor meets [twice] as [many] patients as the German doctor, or even more."*
They also said that due to the current pandemic (SARS-COV-2), doctors need to work longer hours because some of their colleagues became sick, and that there is more pressure on the healthcare system in general.

*Cuban perspective*

The doctor explained that remote area health centres have human resource issues. Sometimes, health centres don't have a doctor but only a nurse or an assistant nurse. Additionally, individuals often go to the health centre only when they are in bad shape.

### 3.1.4. Theme 4: The future of digital culture

*Taiwanese perspective*

A doctor said that in the next ten years, the National Health Insurance (NHI) will not be changed, because it is important to the Taiwanese from a political perspective, and the government will maintain promises to run the NHI. New technologies will still be acquired, but patient-doctor relationships may not change much. The NHI may be open to AI, but more of this kind of medicine is not possible.
Another doctor said that in the next 10 years, technology will rule, but health insurance will become worse because fewer people will have access to the NHI due to rising costs. This doctor also mentioned that due to technological evolution, doctors will have more weapons and skills to help treat and communicate with patients. Information on the internet will also expand rapidly.
Multiple doctors said that everyone would enjoy advanced medication; patients would easily get CT and MRI; and that medical treatment may develop two extremes: the costs of NHI may rise due to more advanced medical services being rendered. Thus, NHI fees will increase, and medical centres will receive more advanced technology. As the budget increases, field expenditures will increase, and quality of care will improve. If the political situation is stable, and the NHI does not face bankruptcy, people will go to the hospital in a natural order.
One doctor said that certain laws need to be improved. Taiwanese law is not progressing well if the system only follows what the USA and Japan have developed. Instead, Taiwan should develop its own system and cooperate more with Singapore. Another participant said that after ten years, there will be widespread AI, many statistical models, and doctors will want AI to contribute in a correct way.

*Swedish perspective*

Swedish doctors mentioned that there will be more digital development, which will be like normal interaction with a patient, but that digital interaction cannot fully replace doctors or the need to meet in person. Sweden has many geographically isolated rural areas, so digitalization will improve the situation for patients living in small towns by providing access to specialists in various fields like in big cities. Moreover, doctors said that it is hard to predict technological trends, as everything in medicine is evolving. It is not likely that robots are going to fully replace humans or perform surgery without supervision. The pandemic is certainly affecting the system and will likely result in significant change. Swedish general medical practices will be handled over Skype, and laboratory personnel will utilize AI more to help with diagnosis.

*Cuban perspective*

The doctor said reform is needed to have fewer NGOs, and the ministry of health should take care of things. Clusters of NGOs are involved in the healthcare system. The dependency on NGOs should be decreased, and universal health coverage, or perhaps reform similar to Taiwan's NHI, is a goal.

## 3.2. Discussion

Mead stated that societies continuously undergo a process of change, and this process brings about new solutions for old problems but also creates novel problems. Symbolic meanings are mainly shared inside the culture by principal actors (Mead, 1934). Within the confines of this study, medical doctors respond to technologies differently, making sense of their context and expectations according to the framework of symbolic interactionism. Interestingly, certain symbolic meanings of digital healthcare technologies are consistent in both cultures examined, such as how medical doctors from Taiwan and Sweden describe the technologies as providing them with more "weapons" or "tools." These terms are linked to concepts of efficiency and changes in the organization. However, there is also variation in the interpretation of the different symbolic realities based on their routine interaction or specialty in medicine, which supports the employment of symbolic interactionism.

Blumer stated that industrial change is inevitable and is a contributing factor that also triggers societal change (Lehn, 2020). Even so, industrialization is a diverse process and is not necessarily concerned with social change (Prasad, 1993). Therefore, technological development appears differently across various cultures, institutions, and circumstances. The symbolism of digital healthcare technologies prominently shapes the clinical environment. The acquisition of said technologies is often perceived favourably, allowing doctors to actively engage in clinical settings with novel knowledge and combat disease with extraordinary tools. The fact that AI may replace aspects of their jobs in the future is worrisome, however.

Mead stated that frustration occurs when a clash of interests takes place. This may be due to an error in perception of law or meaning from the perspective of the actors. This sense of narrow self-sacrifice leads to larger self-development which advances the interests of others (Mead, 1934). In this study, doctors discussed problems that focused on the understanding of their meaningful experiences with patients and digital healthcare technologies. They experienced various kinds of frustration working in the current system, especially obtaining the trust of patients by providing them with the pros and cons of the new technologies, which in turn demands a great deal of time, often because of a patient's ignorance regarding the complexity of regulatory issues.

Mead stated that our mind can predict possible alternative futures in reference to an object, and the response intentionally selects from various environmental issues, predicting the solution as the most satisfactory to an individual. The future cannot be predicted precisely, but it is relevant to the past and can be wisely controlled (Mead, 1934). In this study, doctors predicted changes to healthcare may depend on the political situation, legal regulation, and other influences on medical practice, in addition to the idea that more technologies would be available and adopted by the healthcare system. Technological advancement may require more funding, but the addition of new technologies should provide better facilities for patients as well as easier access to medical consultation and improved diagnosis. In the next ten years, machines will not likely replace medical doctors outright, but the involvement of AI should increase.

Doctors from Taiwan, Sweden, and Cuba reflected on their diverse views regarding digital healthcare technologies, which is not surprising, because they make sense of the technology in terms of their self-image and context. They shared some common meaning regarding the benefits of digital healthcare technologies in terms of assisting their work, providing more weapons to combat diseases, and improving communication with patients. Taiwanese doctors emphasized the NHI and the cost of medical services, whereas Swedish doctors were not as worried about monetary issues. The Cuban doctor emphasised on the shortage of manpower, and unavailability of relevant doctors. This difference in perspectives is likely due to the support of the local social environment.

## 3.3. Conclusions and limitations

This empirical study explores the perspectives of nine Taiwanese, Swedish and Cuban medical doctors regarding digital healthcare technologies during the SARS-COV-2 pandemic and considers the meanings of digital healthcare technologies in a communication context. Furthermore, the doctors communicated their perceived problems and cultural limitations within their healthcare system, while also suggesting possible future developments. To the best of the author's knowledge, this is the first thesis to explore the perspectives of Taiwanese, Swedish and Cuban medical doctors towards digital healthcare technologies using symbolic interactionism. The main limitation of this study is its small sample size. Future investigations may need to extend cross-cultural collaboration in order to better understand the relationships between digital healthcare technologies and their various environments and institutional changes.

# 4. Summary

The overarching question of this study is how doctors in different social contexts interpret the meaning of medicine. The doctors created common symbolic meanings for Western medicine, alternative medicine, and digital healthcare technologies. These shared meanings show that doctors often make sense of their world in similar manners, which contributes to their behaviour. However, not all meanings were shared, which shows the importance of local factors connected with specific groups or cultures.
From an environmental communication perspective, this study explored the subtle knowledge that, at some point, everyone experiences as a patient or lead actor. Understanding these perspectives can help with understanding the mechanisms behind social constructs, which may encourage additional participants from other cultures to discuss their own perspectives regarding similar issues and possible solutions for the future.

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Tusen Tack!

# 7. Appendix 1

Questions posed to the medical doctors:

1. Could you tell me about yourself?
2. How do you describe allopathic medicine?
3. How do you describe alternative medicine?
4. How do you describe digital healthcare technologies?
5. How do you describe alternative and allopathic medicines as well as digital healthcare technologies in your country?
6. How does interaction between doctor and patient typically occur in your country?
7. How do you perceive the interaction between patient and allopathic medicine in your country?
8. How do you perceive the interaction between patient and alternative medicine in your country?
9. How do you perceive the interaction between patient and digital healthcare technologies in your country?
10. How would you define the situation in your country with satisfaction or frustration?
11. How would you describe the practice of medicine in your country ten years from now?
12. How would you describe this discussion?
13. Would you like to add anything or ask something?