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## RESEARCH ARTICLE

# Social determinants of health inequalities: moving toward a socio-constructivist model supported by information and communication technologies

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There is a proven connection between an individual's social condition and his/her life expectancy and likelihood of contracting diseases. Indeed, a large body of scientific evidence shows that social inequalities, in particular, are the main "cause" of harm to health. The interpretation provided by the theory of specific determinants, according to which health inequalities are caused by lifestyles and a propensity for unhealthy behaviors, has contributed greatly to focusing scholars' attention on social contexts, believed to influence an individual's inclination/exposure to risk, and therefore, health inequalities. Nevertheless, the theory of the social determinants of health provides a very rigid representation of the factors responsible for health, which are placed in categories with varying levels of centrality. In short, the theory sets out a hierarchy that goes from the general to the particular, with the more external layers (socio-cultural conditions and environmental context) influencing the internal layers (genetic and biological factors), but not vice versa. Reciprocal influences among the factors are excluded, as are interactions among the processes that put subjects at risk or protect them. The adopted explicative model is linear, reductionist, and based on a cause-and-effect relationship. However, today we know that interactions between the body, individual, and society are difficult to reconcile with a deterministic view of social inequalities in health; hence, there appears to be an urgent need to formulate hypotheses and develop approaches based on complex strategies regarding the construction of reality. This article sets out a pathway that, starting from the theory of the social determinants of health, goes on to show the necessity of a socio-constructivist approach supported by information and communication technologies. Moreover, it outlines the preconditions of a culture – and communication-based intervention model that can aid institutions in making choices in the field of social architecture that can reduce health inequalities.

**Keywords:** health inequalities; network of relationships; lifestyle and the life course; cultural models of health and illness; information and communication technologies

### 1. Introduction

The international debate on the definition of health inequalities is extensive, and the choice of one definition above another is not a neutral one. It implies certain views, ethics, and models that strongly condition any possible intervention. If, for example, inequalities are viewed as

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differences stemming from choices made by individuals, then the role of the community must be that of providing adequate information so that its members can make the best choices freely. If inequalities are seen as natural inevitable differences, the role of the community must be that of attempting as far as possible to compensate for the effects of nature on health. And finally, if inequalities are not considered natural, but the product of active social processes, then the task of the community and health professionals must be that of intervening directly in such processes to modify them.

The definition of the English scholar Margaret Whitehead has been widely accepted in the European context: “The term inequity has a moral and ethical dimension. It refers to differences which are unnecessary and avoidable but, in addition, are also considered unfair and unjust” (Whitehead, 2000, p. 5). According to this interpretation, differences in health outcomes are not distributed randomly in the population, nor do such differences follow patterns dictated by forces that are beyond man’s control, but rather, they present recognizable patterns that reproduce socially defined dynamics. When the social dynamics that govern the processes of health and illness remain hidden, the health–illness dialectic is objectively an indisputable natural opposition. On the other hand, when we shed light on such mechanisms and explore the interactions between physical well-being and social conditions through the analysis of cultural mediation processes, then health can be considered the means of gaining access to material and immaterial resources that guarantee a high level of quality of life.

Undoubtedly, to avoid deterministic perspectives and embrace the perspective of complexity, it is indispensable that in promoting health, we take into consideration strategies that aim to modify the behaviors of individuals (*behavior change*), those that reduce asymmetries in relationships regarding professions and knowledge (*cultural change*), and those that aim to remove the social causes that expose individuals to risk factors (*structural change*). In all three of these areas, information and communication technologies (ICTs) can set in motion processes that go toward reducing obstacles and knocking down barriers to achieve the objectives of shared health.

## 2. Health inequalities: explicative theoretical models

Several hypothetical mechanisms have been identified through which social inequalities influence health, showing their effects at different stages during the course of an illness. These mechanisms can be considered from three different perspectives: specific determinants, selection, and life course, and they are to be viewed as complementary in explaining health inequalities.

The perspective of *specific determinants* is based on the idea that every possible causal effect of social conditions on health is primarily indirect, caused by levels of exposition to known and unknown individual risk factors for illness, distributed heterogeneously among different social levels. A person’s social level is, therefore, viewed as a potential cause of illness because it is thought to determine behaviors that may be harmful to health. This explanation, which undoubtedly has a solid empirical basis, is grounded on the behaviorist paradigm and focuses on the inclination of individuals, which varies according to their social level, to adopt behaviors that put them at greater risk. In this model, the main determinants of social inequalities in health are lifestyles, or rather, an individual’s propensity to adopt unhealthy behaviors (Figure 1).

Nevertheless, the hypothesis that the lack of accurate information, and hence, an incomplete awareness of the harmful effects of certain behaviors typical of those belonging to the lower levels of the social hierarchy, is the cause of such behaviors has been contradicted by several studies. These studies suggest that knowledge of risks does not lead to a reduction in risky behaviors, as has been shown in the case of smoking (Jarvis & Wardle, 1999). Moreover, many health inequalities regard illnesses for which behavior has little etiological relevance, and many unhealthy behaviors, such as smoking, consumption of alcohol, and so-called comfort foods,

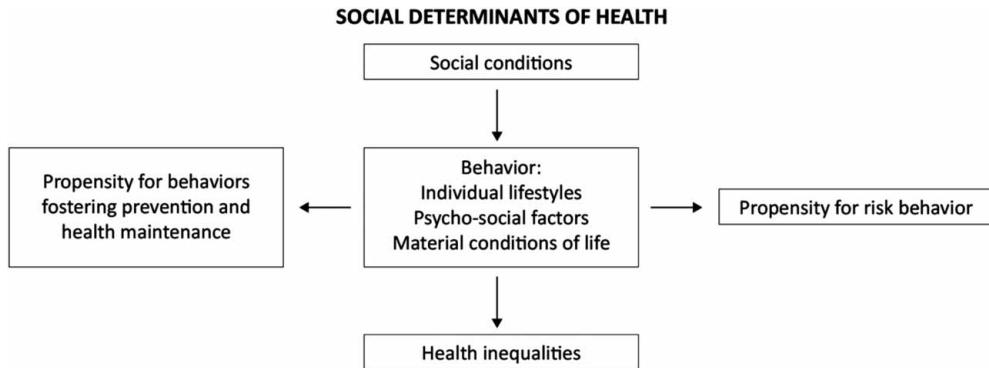


Figure 1. Specific determinants perspective.

rich in sugars and saturated fats, represent phenomena of adaptation to chronic stress rather than free individual choices (Wilkinson, 1999).

Overall, based on the available scientific evidence, we can estimate that differential exposure to specific determinants accounts for at least 50% of social inequalities in health. Hence, prevention and harm reduction programs, centered on the physical conditions of life and work, factors of occupational and social stress, diet, smoking, alcohol consumption, and physical exercise should be among the most effective interventions to reduce social inequalities in health. Nevertheless, the effectiveness of such programs is mitigated by the fact that, as regards individual behavior, available scientific knowledge suggests that the personal characteristics causing behaviors that pose the greatest risk to health may be present and make their effects felt before people reach educational and occupational levels that can influence their social position.

The *health selection effect*, on the other hand, posits that an individual's state of health depends only negligibly on the social conditions of his/her life environment. Rather, it is the individual's own state of health or "biological capital" that conditions his/her access to different social positions and mobility among those positions. In short, an individual's state of health, or biological capital, influences his/her social mobility and hence the attainment of status. The selection processes occur through social mobility, or rather, changes in an individual's social position over the years. A person's social position may, therefore, come to differ from that of his/her parents or from his/her own position in a previous stage of life. Nevertheless, the "direct impact" of processes of social mobility on health inequalities, both intragenerational and intergenerational, has been shown to be of limited importance, mainly because most serious health problems arise at an advanced age when social mobility is less likely (Cardano, Costa, & Demaria, 2004).

Conversely, the role of "indirect selection", which involves selective social mobility based not on health in itself, but on several determinants of health, would appear to play a more important role. Indeed, many personal characteristics that influence social mobility (cognitive ability, adaptability, personality, physical, and mental constitution) are also health determinants. In short, there is an association between a certain biological capital (genotype) and social status when the determinant (genotype) is a determinant of social mobility, acting on both health (direct selection) and on personal characteristics associated with social mobility, which in turn have an effect on health (indirect selection, Figure 2).

The *life-course* approach emerged as a new perspective in the social sciences in the 1980s, introducing dimensions such as time, process, and context, which are crucial for any study of the human experience (Elder, 1983; Featherman, 1983; Riley, Johnson, Foner, & Abeles, 1982). Life experiences are not viewed as sets of static roles or simple evolutionary processes,

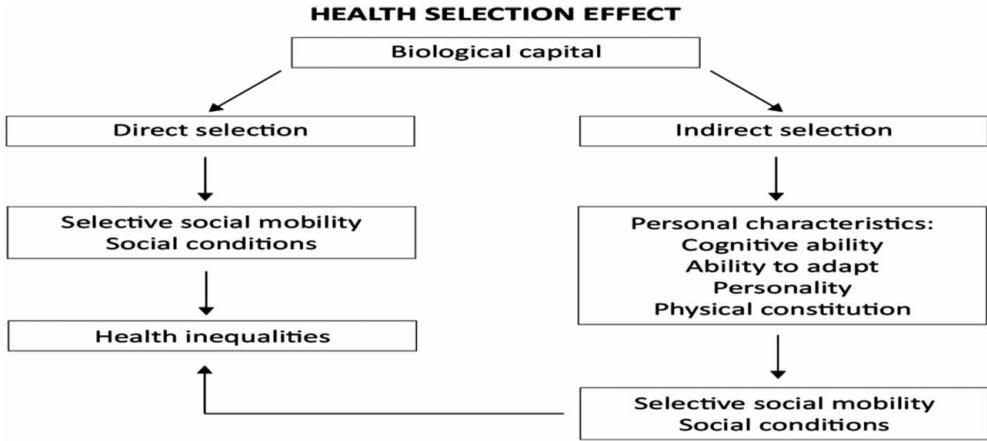


Figure 2. Selection perspective.

but as “careers” or “trajectories”, the formation or structures of which are formed interdependently and through interactions with historic-social circumstances. This approach has found applications in various disciplines, including anthropology and epidemiology. It offers a dynamic interpretation; hence, its explanation of health inequalities takes into account the temporal variability of the effects of social conditions during a person’s lifetime and the reciprocity of the relationships between health determinants and health results. The *specific determinants* and *selection* perspectives are also integrated into this approach, and the two inequality generating mechanisms reinforce one another in the course of a lifetime.

Within this conceptual framework, we find the interesting use of the concepts of “structural violence” (Farmer, 2003; Farmer, Connors, & Simmons, 1996; Galtung, 1969), “social suffering” (Kleinman, Das, & Lock, 1997; Quaranta, 2006), and “embodiment” (Krieger, 2011).

The concept of *structural violence* refers to pathogenetic action against individuals exercised by social structures when those structures place limits that condition life and career trajectories. Hence, healthcare processes cannot be limited to a simple item of information on the health of subjects, who are believed to possess free will and therefore to be responsible for their own choices, nor can it be limited to doctor–patient relationships. Rather, these processes require the removal of the above-mentioned limits. Structural violence is inversely correlated with the democracy and transparency of social processes and is directly dependent on the possibility of subjects to participate in allocative choices.

*Social suffering* arises from the social production of distress and its concealment by political, economic, institutional, and cultural forces interacting with an individual’s body in context. Indeed, such suffering penetrates individual experience and finds expression through body paradigms.

Krieger (2011, p. 214) uses the concept of *embodiment* as the incorporation of an individual’s life experience in the social and ecological contexts into his/her biological dimension. Hence, an individual’s body becomes the product of multi-directional relationships, not the simple result of genetic and biological variables. Health inequalities observed in bodies represent the symbol of forces and factors exogenous to the bodies themselves. However, biological differences among groups are not the only differences that are examined. Relationships among groups and the modalities with which they have been defined are also considered. In the course of all existence (in a *life-course* perspective), the individual relates to his/her surrounding environment with health effects that may be positive or negative. The end result of exposure to a specific unhealthy

factor depends on the history of exposure and previous relationships. Indeed, the history of an individual as well as that of his/her predecessors may have modified that person's "susceptibility" and "resistance" to harm. *Susceptibility* and *resistance* are applied to the entire relational context of the subject and do not refer exclusively to the biological level. Therefore, the central assumption of Krieger's ecosocial theory is that individual biological development takes place in a social context capable of structuring life opportunities in such a way that advantages and disadvantages tend to be concentrated longitudinally (sedimentation of differences in temporal biographical trajectories) and to accumulate transversally (the spatial or ecological dimensions of life spaces) (Figure 3).

From a complex sociological standpoint, in contrast with more ingenuous approaches, health is understood as a result or product, and not the simple sum of negative and positive aspects present in the lives of individuals. According to the *constructionist integrated approach*, by interacting, subjects actively construct health in non-abstract concrete terms, bringing into play a series of social transversal skills (*social skills*), orienting themselves in work or daily life environments, and acting cooperatively with varying degrees of consciousness. Hence, we have a socio-construction of the reality of health and illness with different social actors acting on many levels based on a body of individual and collective knowledge.

The *socio-constructionist perspective* seeks to explore the dual dimension of the production and management of socio-cultural meaning, acknowledging the potential of medical knowledge to reduce illness and the potential of the community to provide care. The final aim is to construct an *integrated vision* of the concept of health, by reconnecting it to the different dimensions with which it is involved and considering it as the *shared field* of both the actions and responsibilities of individual and collective social actors, as well as the disciplines and professions that work toward reducing disparities in health. The integrated socio-constructionist approach connects the physical-biological, psycho-cultural, and political-economic fields of the health-illness process and requires a trans-disciplinary and pluri-methodological perspective to identify the factors causing illness, the needs of a differentiated population, and the global strategies and tools to promote and protect socially shared health.

This approach is in line with the definition of health formulated in the constitution of the World Health Organization in 1948, which calls for other actors, sets of knowledge and contexts, in addition to those of the medical profession, to cover an important role in prevention, care, rehabilitation, and integration. The new culture of health, in redefining the concept of health in both a spatial and temporal sense, calls into question inequalities regarding access to health resources based on consolidated social positions, and opposes asymmetry in the healthcare relationship

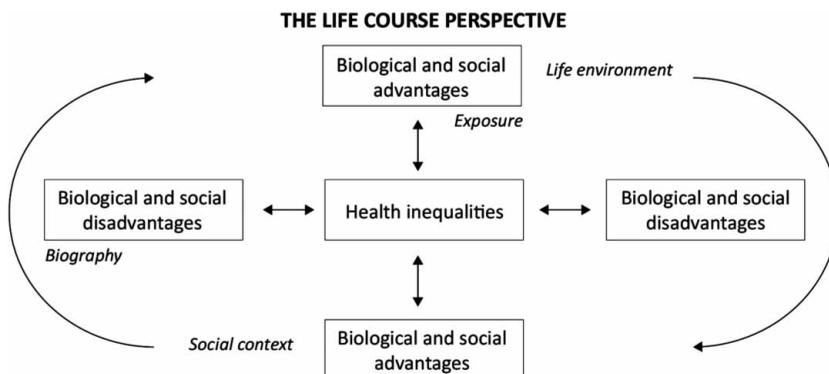


Figure 3. Life-course perspective.

linked to the possession of exclusive knowledge. At the same time, it calls for an active, informed, satisfied patient, in line with the process of healthcare modernization, which aims to improve the quality of services and contain costs. ICTs are used in this process to pursue these innovative aims. A “mature” and “complex” introduction of ICT, based on a socio-constructivist conceptual paradigm, helps to break the vicious cycle that takes hold between critical social conditions and health risks while striving to enhance the model of distributed health, thus re-establishing health as a social process.

**3. The integrated socio-constructivist model supported by ICT**

The socio-constructivist model that we refer to above focuses on the relationship between social conditions and health opportunities. This circular relationship implies that an individual’s ability to improve his/her social position is hindered by negative health conditions and by experiences of distress and malaise, which in turn are exacerbated by the individual’s low social position.

An investigation conducted from a socio-anthropological standpoint could shed light on how we might break this vicious cycle. If, as Kleinman claims, health represents the possibility of accessing material and immaterial resources that guarantee high levels of life satisfaction, and hence, illness can be viewed as an “embodiment of inequality” in access to resources (Pizza, 2005, p. 92), then socio-cultural determinants influence morbidity and mortality to the point that they can be considered “social dispensers” of health and illness. To promote health, we must, therefore, aim to reduce the disparities in the current social stratification that legitimize unequal access to health resources. Thus, interventions should focus on the following levels: (a) obstacles to assuming healthy individual behaviors (*behavior change*), (b) asymmetries in professions and knowledge (*cultural change*), and (c) socio-structural causes that expose individuals to risk factors (*structural change*) (Figure 4).

In the social constructivist approach, awareness of the role played by interaction and negotiation in the construction of knowledge, not to mention the awareness of the socio-cognitive effects of languages, the media, cultural artifacts, and ICTs on behavior, lead to the conceptualization of biopsychosocial health as a distributed activity modeled on interpersonal exchanges and

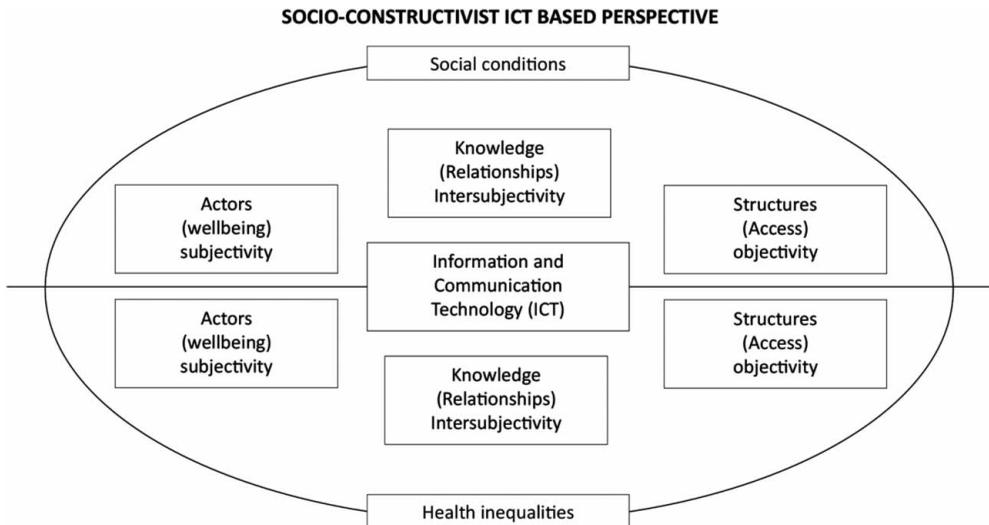


Figure 4. Socio-constructivist ICT-based perspective.

cultural and technological mediation tools. In practice, the introduction and intelligent use of ICT on a social level can make a large contribution to breaking the vicious cycle that establishes itself between unfavorable life conditions or low position on the social ladder, and illness and distress.

The processes of democratization unleashed by ICTs help us to move in this direction by fostering the redistribution of power and by encouraging the diffusion of models of responsibility and participation. A push toward participation emanates from technologies applied to social activities (and not only those applied to reasoning), and our brain appears increasingly specialized from an evolutionary standpoint in the design of such technologies.

The field of *network studies*, which mainly involves sociologists, has tried to explain how new technologies reinforce the power of old cultural tools for sociality. Of particular interest is Castells' (2004) idea, according to which one of the important functions of networks is to improve social behavior. On a personal level, intelligence on the Web leads us to use this network to improve our "reputation". On a group level, sociologists talk about "social capital", that is, the set of agreements and networks of communication that allow people to do things together informally without the government or rigid economic institutions, with the aim of attaining a better quality of life and widespread well-being.

### 3.1. *The social actor of well-being: characteristics and skills*

Health is no longer associated with the traditional characteristics of objectivity, quantification, abstraction, absoluteness, immobility, generalization, isolation, and separation, and has taken on the characteristics of well-being, including subjectivity, personalization, quality, relativity, contextualism, dynamism, and complicity. Moreover, health is no longer viewed in an abstract sense; it is always situated, and does not exist in generalized terms, but rather, is always relative to a subject and situation.

The concept of health has undergone a true revolution from a theoretical epistemic standpoint, and characterized by multiplicity and complexity, sharing and negotiating, it is now well suited to be represented through the innovative communication tools of the new media. Such tools incorporate and emphasize complex reticular structures in processes that, through the interactivity that makes them possible, take on an explicit form, becoming easily observable, recordable, and analyzable. All this occurs in accordance with the new conception of the mind and body, no longer understood as static deposits of information, but as complex, flexible, and dynamic systems.

Well-being is a condition and an experience of the social actor, as well as a fundamental resource for his/her physical, psychological, and social functioning. Being well is no longer viewed in the deterministic sense as "absence of illness" (biomedical field) or as "deviation from the norm" (Parsons, 1951). Subjective well-being is based on the experience of positive emotions and satisfaction, on the possibility of self-fulfillment, and on the quality of our relationship with ourselves, with others and with our surroundings (Diener & Eunkook, 1997). At the same time, well-being takes on the characteristics of a construction encompassing goals, values, needs, roles, and even social representations (Ryff & Keyes, 1995). The socio-constructionist vision of social representations (health and well-being) views them as processes in which the subject is able to process and construct, more than simply reproduce, himself/herself and his/her own categories within and by means of social relationships, thanks to the function of symbolic mediation performed by cultural artifacts.

The emerging model of well-being has the main aim of fostering communication between the actor and society to create the "social actor of well-being", ensuring a productive and virtuous synergy by means of ICT. And how can ICT contribute to the production of well-being in the social actor? First of all, it must be acknowledged that it is not automatic that the introduction of ICT will lead to an improvement in health and sense of well-being. Indeed, as we know,

many applications have failed because they relegated new technologies to the role of supporting traditional linear reproductive approaches. The new proposal must be based on a revision of the traditional actor–society model and the adoption of a socio-constructivist approach supported by ICT and based on the following points:

- re-appropriation of the health-object by the social actor (in the traditional model, the subject, viewed as someone undergoing treatment, is expropriated of his/her health, considered as an object extraneous to him/her for which the expert is responsible, leading to a condition of subjective alienation);
- promotion of active cooperative participation in health processes, abandoning the solipsistic condition of isolation and passivity of the patient in the biomedical tradition;
- knocking down barriers between different interests (those of patients, families, doctors, other healthcare professionals, healthcare services, and the entire community).

The ICT applications for health encompass the following:

- acquisition of information and knowledge (thanks to *knowledge management* and *database management*): the availability of such resources and information on how to use them can foster virtuous behaviors;
- practical steps (through automation and simplification of the processes): in such a way that participation can be encouraged;
- relationships, that is, research on the quality, both real and perceived, of public and private health-related services (Le Goff & Picard, 2011).

The social actor's demand for well-being calls for cross interdisciplinary decisional abilities and problem-solving skills. Hence, it requires, and at the same time encourages, the activation of types of interaction in the subjective, intersubjective, and social spheres that can foster the development of health processes and a fairer distribution of health. Studies on ICT solutions for healthcare highlight how cooperative informatics can reduce agency costs and promote completely new behaviors which improve doctor–patient relationships, and more generally, the active satisfied participation of citizens in making use of healthcare services (Cresswell, Worth, & Sheikh, 2010; Rimantas & Vitkauskaitė, 2010).

### 3.2. *New knowledge: the case of the doctor–patient relationship*

The new health culture calls into question the asymmetry of the doctor–patient relationship based on the possession of medical knowledge, by definition exclusive and unshareable. Such asymmetry was already well known at the dawn of the medical practice, as the studies by the historian Shorter (1985) have shown. The doctor, with his expert knowledge, was the holder of power, embodying a strong professional role before a subject with no specific knowledge in the field, in a particular moment of his/her life (illness) characterized by anxiety and distress. Such asymmetry was described by the sociologist Talcott Parsons, who in 1951, building on the premises of the sociology of Durkheim (1897), developed what would become the most cited and criticized sociological model: the functionalist organic model of professional dominance. In his model, Parsons describes how the dominant social system establishes control over illness through the figure of the doctor, limiting the patient to a role that neutralizes his/her inclinations toward deviance.

Szasz and Hollender (1956) proposed the first partially alternative model to that of Parsons: a normative model with a certain dynamism. Indeed, in this model, the doctor–patient relationship

is divided into three typologies reflecting different clinical situations according to the seriousness of the disease and the capacity of the patient to respond and cooperate: activity–passivity, guidance–cooperation, and mutual participation. With Erving Goffman, the medical profession operating within “total institutions” became the object of sharp criticisms. Indeed, in his studies on the survival of the self in total institutions (Goffman, 1961), he describes the processes of the stripping away of identity that the patient undergoes at the hands of healthcare professionals. Another line of criticism of the professional dominance model emerged in the conflictual model, from the research and writings of authors such as Friedson (1970, 1972), Mechanic (1979), and Zola (1972). For these scholars, the doctor–patient relationship is placed within a *frame*, which cannot be analyzed as a homeostatic system within functional prerequisites, but rather as a meeting/clash of knowledge systems (*a clash of perspectives*). Finally, Roter and Hall (2006) distinguished four types of relationships on the basis of the intensity of control exercised by the interlocutors: *paternalism*, *consumerism*, *default*, and *mutuality*. The authors focus on verbal and non-verbal communication as a decisive element to achieve the mutuality model characterized by outcomes of greater mutual satisfaction.

The increasing demand for information on health, concomitant with the transition of the doctor–patient relationship toward greater symmetry, has led to profound changes in healthcare. Certainly, on the part of the patient, we have seen a growing need to become more involved in *decision-making* regarding his/her own health. Indeed, we now talk about a partnership between doctor and patient, where the clash of knowledge becomes a meeting between two forms of expertise seeking an agreement on therapy and care. Indeed, the patient has changed from a passive recipient of medical treatment to an active consumer of healthcare services.

This transformation involves an increase in the demand for information in the healthcare field to knock down the barrier of informational asymmetry that, in yesterday’s world, dominated through the paternalistic model of patient subordination. Knowledge is power; hence, the redistribution of access to knowledge also means the distribution of decisional power, which influences not only the supply of healthcare treatments, but also the medical decision in itself (Masys, 2002).

The new patient, by virtue of his/her greater healthcare competence, which is now more common and more easily acquired, can establish a more balanced relationship with the healthcare professional, rejecting the top-down, one-directional model. Nevertheless, on their part, physicians in the field of general medicine feel that their professionalism is under siege, with a consequent erosion of their authority. The solution to this conflict may be found in the willingness of physicians to take advantage of the potential of the Web to enhance their own knowledge and authority, acting as “facilitators” for patients, who are assumed to be well informed and therefore careful to avoid risks associated with self-diagnosis and unverified information.

The Internet has played an important role in changing the doctor–patient relationship in terms of reducing informational asymmetry (Anderson, Rainey, & Eysenbach, 2003), and the ongoing evolution of this relationship has led to greater satisfaction on the part of both parties. In particular, we can observe the following mutual advantages that derive from the use of the Internet: a more informed patient, up-to-date medical knowledge, joint decisions, a more efficient use of clinical time, participatory healthcare decisions (Wald, Dube, & Antony, 2007), online support groups (Cline & Haynes, 2001), anonymity (Andreassen, Trondsen, Kummervold, Gammon, & Hjortdahl, 2006), and accessibility (Ziebland et al., 2004).

The information available online offers an opportunity to improve the doctor–patient relationship, increasing the patient’s background knowledge, and hence fostering a sharing of information, which can lead to shared participation in the process of *health decision-making*. Once basic knowledge has been acquired, the time dedicated to the consultation can be used to discuss alternative therapies and the clinical actions to be undertaken. A patient who is informed through the Web makes the idea of “informed consent” that much more valid, laying the

groundwork for agreement and consent based on knowledge that is for the most part shared. Furthermore, medical instructions given to a patient can find justification and support from a Web search for a “second opinion” to confirm an opinion, hypothesis, or set of instructions.

Online discussion groups are also an important resource for health: they provide social support and encouragement and allow the sharing of information, experiences, and models of behavior in an empathetic communicative style. Thanks to the Internet, the concepts of “prevention” and “health promotion” have become part of the cultural background of the patient. In contrast with traditional sources of information, online interactive healthcare communication offers the patient an opportunity to receive personalized messages; indeed consumers find themselves in a position to choose messages oriented toward their needs and preferences, offered at more affordable prices than traditional services. The Web allows maximum freedom of expression, thanks to the anonymity that it affords patients, as well as the opportunity to use informal language. In short, the Web provides a great opportunity to overcome barriers: not only social barriers, but also spatial–temporal barriers typical of traditional communication modalities. Indeed, on the Internet, it is possible to access information and discuss health issues 24 hours a day, covering great distances.

### 3.3. *Convergent structures: challenges and opportunities*

Though the Web and its applications appear to foster greater equity and a reduction in health inequalities compared to traditional communicative models, when it comes to actually taking advantage of the opportunities afforded by the Internet, several critical points, dilemmas, challenges, and potential disadvantages may arise. The biggest potential problems stem from how the Web is used, and such problems may undermine the benefits it can provide. Above all, the quality of the information on the Web varies greatly, and without the aid of adequate control tools, we may find information that is misleading, false, or easily misinterpreted, and such information may compromise our state of health or result in requests for inappropriate interventions. Moreover, the lack of context can lead to situations where information designed for experts and professionals becomes the prerogative of the general public, with the possible consequence that inadequate or insufficient understanding leads to false expectations regarding care and treatment.

Another critical aspect is information overload, which forces us to sort through volumes of data to find relevant information. Moreover, the Internet is full of information of every kind, but it sorely lacks criteria for the organization of that information: this constitutes a great opportunity, but also a source of great distress and difficulty in making choices.

If used properly, the Web can be an important instrument for prevention in healthcare, but it can also transform itself into an instrument that encourages risk and leads to distress. In fact, there are certain organizations that, in pursuit of economic gain, deceive users regarding their real state of health, while others amplify (knowingly or unknowingly) sensational crimes, suicides, etc., hence generating publicity around harmful acts which may lead to copycat behavior.

Distancing ourselves from the position of ingenuous constructivism, which underestimates how certain technological environments can lead to an informational load that is excessive or misleading and therefore undermines the efficacy and benefits linked to the introduction of ICT, certain points must be emphasized: hypertextual surfing or the search for information on the Web are anything but simple for people who are non-experts in this realm; approaches that do not recognize the necessity of an instructive guide or a cultural mediator can lead to carelessness and too much time spent using the Web and trying to understand messages; the enormous informational load extraneous to the health problem in question can be a distraction from the problem to be resolved or lead to superficiality in acquiring useful well-founded information.

At this point, it is useful to cite Howard Rheingold, who in *Net smart: How to thrive online* (2012), attempts to get away from the contrast between critics and supporters of the Web, offering

an approach that introduces us to a kind of learning called *know how*. Such *know how* is considered indispensable to manage the new flow of knowledge supported by the new media, and only the acquisition of such skills can lead us to forms that are healthy for individuals and beneficial to society. This necessity to learn basic elements of new disciplines to be able to express ourselves and communicate in today's world regards five spheres or areas of *literacy: attention, participation, cooperation, critical consumption of information or crap detection, and network smarts* (Rheingold, 2012, p. 13).

Participatory media (Jenkins, Puroshotma, Clinton, Weige, & Robinson, 2005; O'Reilly, 2004) will increasingly determine social and cognitive life in the twenty-first century: with the advent of new media, communicative asymmetry has been reduced, while new users invent and appropriate new ways to participate in the social production of knowledge. Nevertheless, the literacy of digital participation requires a range of skills (persuasion, discussion, and self-presentation) and calls for varying degrees of involvement. Learning to participate effectively online allows us to gain the advantages of intelligent participation in the production of materials of culture and knowledge: the precondition for knocking down barriers in order to reduce social inequalities in access to healthcare resources. Hence, it is crucial to learn basic skills useful for developing a mature and intelligent approach to ICTs that counterbalances the "divergent" effects of the Web, while fostering the "convergence" of knowledge, culture, interests, and needs in different areas of society and health.

In the traditional approach to technology, ICTs are neutral tools that do not alter the existing social balance but adapt to it. Based on the socio-constructivist approach applied to learning new skills, ICT can transform itself into a keystone able to support a concept of society suitable for the epistemology of complexity, the plurality of lifestyle, the logic of the network, the infinite modularity of society, and, finally, the distributed model of health.

### Disclosure statement

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