

SPECIAL ARTICLE

THEORETICAL BASIS FOR INTEGRATIVE MEDICINE: THE HUMANISTIC BIOANTHROPOLOGICAL MEDICAL MODEL

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“Medicine is not perfect but can be perfected. Medical practitioners do not bring from under the rug any occult resources. They do not use magic. They consider equally negative replacing clinical medicine by the exclusive use of complex technology. Applying generous and open criteria based on science and knowledge and with the objective of serving men, they study the patient to learn what is wrong and assist them to get well.”

Marcos Meeroff

“The aim of medicine is to prevent disease and prolong life, the ideal of medicine is to eliminate the need of a physician”

William J. Mayo

ABSTRACT

Worldwide, medicine is practiced using healing models that superficially, appear to be very different from one another when in reality they all have similar logic and comparable objectives. Therefore it is possible to integrate many models of healing into a common system of clinical practice. For western practitioners this means forgetting the fastidious antinomy between biomedicine and complementary and alternative medicine. In this essay we introduce the humanistic bioanthropological medical model (HBAM) that offers the theoretical basis for the practice of contemporary integrative medicine. The most important aspect of the HBAM is the fact that it justifies the proper use of any diagnostic or therapeutic method, as long as it satisfies the condition of progressive evidence-based medicine (EBM) found in relevant research that is conducted using sound biometric psychometric and/or clinimetric methodology that assesses clinical outcomes. Finally we explain the practical application of the HBAM emphasizing the concept of illnesses staged in three progressive levels: parasymbiotic, paramorphic and paranecrotic.

INTRODUCCION

Recently the predominant model of western medicine, biomedicine, has been seriously challenged by those who promote holistic medicine. This situation has created dissent and moral and intellectual disorientation among health care providers (Fontanarosa 1998, Pellegrino 2005). The key problem is that, although they share common values and similar objectives, both biomedicine and holistic medicine are fragmented exclusivist systems of healing and they ignore the useful contributions of the other (Hahn 1995, Sugarmann 1998). We submit the idea that there is only one medicine, medicine that

is scientifically proven and utilizes evidence-based methods supported by solid data. Furthermore, outside of medicine there is still unproven esoteric healing systems for which scientific evidence is lacking (Fontanarrosa 1998). Those forms of healing may be useful to assist patients but they are not medical in essence and as such they must remain outside of the scope of the medical profession. Medicine is a human activity representing the art of using scientific evidence to prevent, diagnose and treat disease and injury with the purpose of healing patients and eliminating human suffering. In medicine practitioners use logic reasoning and critical thinking to analyze the possibilities and draw correct clinical decisions (Jenicek 2005). Physicians are those individuals trained to understand, diagnose and offer available solutions to the health problems presented by the patients (Fabrega 1972, Pellegrino 1986) while patients are those individuals in need of professional help because they do not understand what is wrong with their health, and/or because they are incapable of self-help (Engel 1977). Clinical medicine helps people live longer, happier and more active lives with less suffering or disability. Teleologically, medicine helps patients pursue individual survival and species reproduction.

REDUCTIOINISM, HOLISM Y SYSTEMISM

Simplistically, the world and their surroundings can be explained as: 1. A collection of independent parts-individualism, atomism-; 2. A solid indivisible whole -holism, collectivism-; or 3. A set of integrated parts that communicate among them -systemism, emergentism, tectology- (Bunge 2003). Individualism describes the perspective of the person above the world; holism the world above the individual and systemism the interaction among individuals at the same level. Individualism means autonomy and egotism; holism means heterogeneity and dependency and systemism means interaction and cooperation. In medicine, these three philosophical viewpoints are reflected as follows:

Individualism is cartesian dualistic biomedicine, a type of medicine focused on the detailed analysis of body parts, a model that concentrates on the properties of the parts and omits the emergent properties of the whole.

Holism is “new age” subjective and esoteric alternative medicine that is reluctant to admit the possibility of dissecting and atomizing the whole into small, more manageable parts and fails to understand the existence of vital interconnections among those parts.

Systemism is contemporary scientific, logical and rational medicine using both analyses and synthesis to arrive to a complete understanding of both the whole and its parts. It is based on the understanding that there are network systemic connections among the components of complex structures such as human beings.

Systemism, also known as tectology, was introduced by Alexander Bogdanov (Bogdanov 1980). This was followed later by Ludwing von Bertalanffy who expanded on the idea and constructed the general systems theory (Von Bertalanffy 1950). In Medicine, unfortunately, systemism has been erroneously confused with holism and the esoteric “new age” philosophy (Bunge 2000).

Systemism in medicine can be explained as follows:

1. Patients (human beings) are complex organisms (macrosystems) composed of cells, tissues and organs (mesosystems, microsystems, components, parts) with particular unique anatomic structures (physicochemical composition, architecture, and specific bonds), and functions (mechanisms) all of them integrated in a network system with unique global properties. Human beings are functionally indivisible biopsychosocial entities but they can be structurally dissected and atomized to their smallest components to understand how those individual parts are structured and work.

2. Live organisms, such as humans, have the following elements (Bunge 2003):

Components = Physicochemical microsystems such as proteins, nucleic acids, lipids, sugars, and electromagnetic waves forming the anatomic skeleton of the system (structure, architecture). Microsystems enter into reactions, combinations and/or associations to form mesosystems and macrosystems. In live organisms the activity of each component is essential for the activity and transformation of the other components.

Environment = The rich medium contained in serum, lymphatic fluid and spinal fluid that have nutrients, buffers and energy fluxes, whose variables (pressure, temperature, acidity) keep optimum life conditions. Life conditions can be maintained by either homeostasis, that is keeping the environmental factors within narrow boundaries despite structural and functional abnormalities (Cannon 1929); by enantiosiasis that is keeping balanced functions despite unstable environmental conditions (Magnum 1977) or by transistasis, that is changing the structures and/or the functions to maintain physiological viability (example: surgically performed spondylodesis to improve spinal motion).

Connections = The bonds that create the pattern of organization among the components (autopoiesis) and the physical, chemical, biological and psychological ties with the environment. Humans are architecturally open since their microcomponents change frequently, but functionally closed, in that the organizational pattern is almost constant (Varela 1974, Capra 1999)

Mechanisms = The processes or functions (anabolism, catabolism, secretion, excretion, transport, repair, thought, etc) that keep the macrosystem alive and physiologically active.

3. The components of the human macrostructure (cells, tissues, organs) interconnect among each other in time and space. The integrity of the properties and functions or the individual parts is essential to keep the integrity and functionality of the whole. Therefore alterations in the parts will unavoidably affect the whole despite the fact that the whole has particular emergent global properties and functions that are different of the properties and functions of the isolated parts.

4. Living organisms are constantly exposed to forces causing imbalance. Live organisms have the ability to adapt and change to maintain physiological stability (allostasis) and to regulate their structures, their network connections and their mechanisms to the stress caused by those constant changes (allostatic overload, distress) in order to maintain autopoietic balance (Schultkin 2003). But if the adaptation to the overload continues for too long or the overload increases in magnitude, adaptation is not longer viable and the process may turn into pathology (Rosen 1998).

THE PROPOSED HUMANISTIC BIOANTHROPOLOGICAL MEDICAL MODEL (HBAM)

The humanistic bioantropological medical model (HBAM) was developed by clinicians trained in western biomedicine and later on expanded by adopting ideas and concepts learned from other healing systems such as traditional Chinese, ayurvedic, and natural medicine. The ultimate goal was to formulate a model that is scientific, verifiable, progressive, anthropologic, all inclusive and foremost practically oriented. The HBAM is an evolutionary advance of the biomedical model (Gordon, 1996). In attempting to formulate the HBAM the most important intellectual challenge has been not to completely break links with biomedical knowledge, but instead, to incorporate into the medical model contemporary science as well as the necessary elements of the human and social aspects of life (Giordano 2007) recognizing that humanism is the “antidote to the potential tyranny of technicism and other sins of physicalism” (Pellegrino 1986).

The HBAM accepts all available medical knowledge avoiding being caught in dogmatic dichotomies that favors one extreme over the other such as individualism vs. holism, eastern vs. western, allopathic vs. homeopathic, drugs vs. herbs, surgical vs. non-surgical and so forth. The HBAM is scientific, inclusive and pluralist rather than dogmatic, exclusive, and monist. It emphasizes wellness and healing of the bio-psycho-socio-spiritual dimensions of the person (Bell 2000).

The ideas behind the HBAM are not new; they can be traced to pre-Hippocratic times with Hygeia’s salutogenic orientation in medicine (Giordano 2007). More recent references to the origins of the HBAM can be linked to the work of Emile Durkheim in the 1800s. Then in the mid 1950s Talcott Parsons gave birth to the modern concept of functionalism. (Parson 1951, 1964). Parsonian functionalism theory served as the theoretical matrix for approaching health as physical-physico-social well-being, a characteristic of the contemporary quality of life rhetoric (Almeida Fihlo, 2001). Later on was E. Mira y Lopez who coined the concept of eubiatriy that is the idea of integral medicine with a double perspective psychosomatic and somatophysic including genetic and environmental factors as well (Meeroff 1992). Perhaps the most significant contribution to the clinical aspects of HBAM was that of Jorge Orgaz (Orgaz 1953, 2008). Unfortunately, Orgaz work remained largely in obscurity since it was published only in Spanish. The paradigm shift toward HBAM occurred after the crucial contributions of George L. Engel (Engel 1977) and of Marcos Meeroff (Meeroff 1992, 2004).

Under the HBAM, medicine is health oriented rather than business oriented, it is comprehensive, qualitative and quantitative, scientific and progressive. It is also distant from special interests advocacy and not to be used for preserving social privileges.

HBAM has the following key components:

- There is a synergistic interconnection between body and mind (Bateson 1979, Capra 1996, M. Meeroff 1992)
- Disease is the result of the inability to cope with disturbances and imbalances not just the exclusive effect of external agents.
- Medicine is neither an industry nor commerce. Medicine should be based on the Mayo family “give back” philosophy that is applied science for the benefit of the patient, the family and the community (Saunders 2000).

- Neither evidence from randomized controlled trials or from observational methods can mandate a particular course of action in a particular circumstance, but the evidence can assist in making the appropriate clinical decision (Sackett 1996, Tonelli 1998).
- Technology is not just a tool for scientific advancement but also a mean to help patients.
- Physicians must understand the biopsychosocial disturbances afflicting the patients and assist them in their struggle to reduce suffering and to regain dynamic balance.
- Physicians must be interested in both, the elucidation of the biological mechanisms of disease and the quality of life of their patients. Physicians must be divergent and creative in order to understand the patient's problems.
- Physicians must be experimentally scientists, technically specialists, clinically generalists and sociologically humanists.
- Patients are complex biopsychosocial live organisms integrated in the universe (Margulis 1998).
- Patients are emergents with flexible identities, that is unique living organisms where the whole body structure is equal to the sum of the structures of its parts but where the global functions and properties of the whole are different of what can be assumed by the summation of the functions and properties of the parts (Morton 2001, Bunge 2003).
- Patients must actively participate in their health care not just be passive recipients of the treatments prescribed by the physicians.
- The physician-patient relationship is a partnership of consent and enlightenment. It is not enough for the patient to accept the doctor in a consumeristic fashion, the acceptance must be mutual.
- Treatment must be focused on correcting both body and mind imbalances affecting the whole person as well as localized physical and mental abnormalities and not simply in palliating symptoms.
- Treatment must be individualized but based on the results of EBM that is in the statistical conclusions of properly designed and conducted clinical experiences carried out using appropriate biometric, psychometric and clinimetric methods of evaluation (Feinstein 1987, Margolin 1998, Bell 2002, Jenicek 2005). EBM has its limitations and can not be used to determine the value of non scientific healing modalities that are beyond the scope of medicine (Tonelli 1998).

For the HBAM it is immaterial if body and mind have a common origin and/or structure or not, what is important is the fact that both co-exist in an inclusive interconnected system characteristic of life (Bell 2002). HBAM doesn't require any assumptions about the ultimate composition of matter nor does it need to adhere to the theory of everything. Furthermore, the HBAM by being pluralist is beyond the body-mind dichotomy. At the present time there is no way for humans to discern about the spiritual, immaterial and imperceptible aspects of the universe. This should remain a question for future investigations, discoveries and revelations (Maller 2007). As Einstein reminded us "the problem involved is too vast for our limited minds" (Colaprice 2003). Nevertheless this uncertainty doesn't interfere with the practice of medicine under the HBAM since health care is just about assisting patients getting better. The HBAM doesn't require the total exclusion of the reductionistic approach. HBAM can indeed benefit from the use of analytic methods since human beings, although they can't be reduced into their component parts, they certainly can be dissected and explored (Morton 2001). HBAM acknowledges the fact that a disease may not always be curable, but there is always

opportunity for healing the patient. HBAM recognizes that there are interventions that may heal solely by the power of hope, divine intervention, or belief, and can be very useful in the management of patients but those healing modalities are not within the scope of the modern scientific medical profession (Puchlaski 2001).

The HBAM utilizes logical clinical reasoning in the following sequence:

- Previous knowledge of diseases (nosology, external clinical evidences)
- Assessment of symptoms, signs and messages (semiology and hermeneutics)
- Gathering quantitative and qualitative data (paraclinical techniques)
- Formulation of diagnostical hypotheses (differential diagnosis)
- Arrival at logical and prudent diagnostical decisions (deduction, intuition, heuristics, phronesis)
- Use of appropriate treatments (evidence based medicine)
- Evaluation of the therapeutical responses (biometrics, psychometrics and clinimetrics)
- Enhancement of the nosological understanding of diseases (progressive knowledge)
- Improvement of diagnostic and therapeutic medical abilities (enhanced clinical expertise)

HEALTH AND DISEASE: THE PRACTICAL APPLICATION OF THE HBAM

Health is something everybody wants but has difficulties in explain what it is (Boyd 2000). The key element is that the definition of health depends on how we understand life and its purpose (Fromm 1955). In formulating the definitions of health and disease for the HBAM the main objective has been to be concise, understandable, set limits, and not be redundant (Murphy 1976). In the HBAM, health and disease are not just the static opposite ends of one continuous linear dimension but they represent relative states of allostatic dynamic balance strongly influenced by personal values, feelings, structural body composition, genetic factors, and social and spiritual characteristics of the environment where the individual exist (Hungelman, 1992). Realistically it is impossible to reach a state of perfect health or to be in a state of total disease. Each of us is a unique combination of health and disease and a combination of abilities and disabilities, both emotional and physical. Body and mind adapt in a constant state of dynamic balance to exist in a meaningful and almost stable way. Health and disease refer to the structures, functions and network connections of the individual. In clinical medicine arithmetic average normality does not always equate with health. What may be considered normal health for one individual may be unhealthy for another. For instance, having three bowel movements a day may represent diarrhea, constipation or normal intestinal function according to the different physiologic, psychological and sociologic circumstances surrounding the presentation of such cathartic frequency.

Bioanthropologically, we define health (wellness) as a state of dynamic autopoietic, allostatic balance leading to a stable biopsychosocial well-being condition and to a harmonious interconnectedness of the person with the environment, with nature and with the universe.

In practical terms we can say that health is “the attainment and maintenance of a uniformly developed body with a sound mind fully capable of naturally, easily and satisfactorily performing our daily tasks with spontaneous zest and pleasure” (Pilates and Miller 1998).

In health, the body structures are constantly maintaining network balance, allowing the person to function in a meaningful and satisfying physical, psychological and spiritual manner. Health means harmonic balance in the chaotic fluctuating process characteristic of life (Varela 1974). A healthy individual is one who can adjust her/his structures and the organizational connections of the body and the mind to the stress of the physical and social environment in order to continue functioning in an efficient and self-satisfying manner. The healthy individual is well functioning as a whole, in harmony physically and mentally with himself and with his surroundings (Mordacci 2004). In clinical terms, health means metabolic efficiency which provides sufficient internal energy and allows individuals to be relatively free from pain, disability and physical and psychosocial suffering allowing them to cope with life demands. Health is directly correlated with the patient's desire to live a meaningful life and the physician's desire to assist the patient reaching that goal (Orgaz 1953, 2008). Health is a relative state, an approximation to perfection as perceived by the patient, and by the social circle where the individual lives.

Disease (unwellness) represents a deviation from the somatic, psychic, social, and spiritual dynamic autopoietic allostatic balance that characterizes health (wellness). Disease is a multifactorial process that occurs when the individual is dealing with disturbances that cause imbalances. Under distress (allostatic overload) the body and the mind set in motion natural regulatory mechanisms that are not always effective to regain healthy balance. The inability of the unwell individual to cope with allostatic overload brings about the onset of disease (Rosen 1998). Allostatic overload can be genetic, psychological, environmental chemical and/or physical or a combination of them. In clinical terms disease means metabolic inefficiency and can be acute or chronic. We call acute, temporary disease sickness and chronic, prolonged disease illness.

Sickness is the sudden and temporary inability to maintain the state of dynamic balance. Sickness is an abrupt event disrupting healthy stability. In sickness symptoms, signs and messages can be the result of the aggression by an etiologic agent or they may represent the patient's attempt to heal as the naturopathic school of thought advocates (Zeff, 2005).

In sickness the main autopoietic regulatory mechanisms are usually not seriously compromised, therefore regaining healthy balance becomes an attainable goal.

To treat sick individuals, practitioners must use a pragmatic combination of deduction and intuition based on EBM to help the patient returning to the state of dynamic balance that characterizes wellness. This is done by:

1. Eliminating direct external sources of distress. Example: treating a bacterial upper respiratory infection with antibiotics or recommending the change of a faulty desk chair to alleviate lower back pain secondary to muscle spasm.
2. Increasing the defensive abilities of the organism to withstand distress. Example: prescribing Echinacea-goldenseal and bed rest to improve cellular immunity to treat a viral upper respiratory infection.
3. Removing an internal disturbance causing imbalance. Example: performing a partial colectomy to treat a diverticular perforation.

4. Setting in motion compensatory mechanisms to return to a healthy balance. Example: Using parenteral vitamin B12 supplementation to compensate for cyanocobalamin malabsorption secondary to decreased secretion of gastric intrinsic factor in a case of acute erosive gastroduodenitis.

Illness can be defined as the prolonged and/or permanent imbalance of the body and the mind. Illness is not just the subjective manifestation of disease; instead it reflects chronic unsteadiness. Illness is not just an event, it is a chronic process. Clinically illness comes with psychosomatic symptoms and signs and social responses, some of which can be measured. In illness clinical and paraclinical tests can document changes in structure, functions and/or connections. Illness is largely affected by the perceptions and the expectations of the patient, by the intuition and the analytical reasoning of the physician and by the significance given by the community. Here symptoms may not be present at all, such as in some cases of early skin cancer or benign idiopathic hypertension or may be very obvious such as in chronic obstructive pulmonary disease or cirrhosis of the liver. Illness evolves through several non-linear stages that usually overlap among themselves.

The first stage of an illness is called parasymbiotic stage. It occurs when, without observable changes in the structures, and/or the connections, the dynamic balance that preserves the functions has been altered but compensatory mechanisms were sufficient to allow some form of stability. Parasymbiosis means that both architecture and function are preserved. The patient may have vague symptoms but no clear signs and/or quantitative evidence of the illness. Clinically parasymbiosis means that the disease is silent and it does not express itself clearly for the patient to realize the potential magnitude of the problem. (Orgaz 1953).

The second stage of illness is called paramorphic stage. It comes with changes in the anatomic structures and irregularities in the interconnections of the tissues and organs but not in the functions. Paramorphosis means that the architecture is altered but the functions are preserved. In this stage the symptoms and signs are more perceptible and some quantitative evidence of the illness can be obtained. Clinically paramorphosis means that the disease manifests itself as illness but the patient still does not understand and/or pay much attention to the imbalances (Orgaz 1953).

The third and final stage of the illness is called paranecrotic stage. It arrives when, in addition to the observable changes in the anatomical structures and interconnections of the tissues and organs, there are also local and global malfunctions. Paranecrosis means that both the architecture and the functions are altered. In this stage there are clear and evident messages, symptoms and signs. Such set of circumstances allows the quantitative measurement of informative data. Clinically paranecrosis means obvious and advanced disturbances and malfunctions that become evident to the patient, the doctor, the family and the society (Orgaz 1953).

Due to the length and chronicity of illness, targeting only the disturbances occurring at the end organs is not sufficient. Instead it is necessary to treat both the local problems and the patient as a whole. In illness merely suppressing symptoms with drugs and/or other therapeutic modalities does not solve problems since it ignores the primary cause of the illness itself.

Clinically, to treat patients suffering from an illness, practitioners must combine practical intuition with logical deductive reasoning to arrive at decisions aimed at assessing the needs of the individual person at a particular moment her/his life (Svenaeus 1999). Illness can be treated as follows:

1. Eliminating recognizable external sources of distress. Example: Stopping chronic alcoholic abuse leading to Laennec's cirrhosis.
2. Improving internal defensive mechanisms to withstand allostatic overload. Example: Using sylimarin to improve liver metabolism and bile flow.
3. Modifying internal factors responsible for imbalances. Example: Performing a pyloromyotomy to relieve pyloric stenosis.
4. Adapting and compensating to the imbalances in a symbiotic process that allows a return to the state of dynamic balance. Example: using biofeedback to control distress causing vasoconstriction, hypertension and increased risk for myocardial infarction and/or cerebrovascular accidents.
5. Undergoing a process of self-transformation resulting in a new state of dynamic balance. Example: changing to a low fat, high fiber, low sodium diet to modify internal conditions responsible for the metabolic syndrome that is obesity, excess waist body fat, hyperlipidemia, hypertension, hyperinsulinemia and/or diabetes mellitus.
6. Re-establishing healthy body and mind conditions by adhering to a balanced diet, performing physical exercise routinely, managing stress, sleeping and resting well and eliminating all septic foci in the body.

CONCLUSIONS

In the last decades the practice of clinical medicine has been seriously disturbed by the antinomy between biomedicine and alternative and complementary medicine. As we discussed in the essay there is no validity for such antinomy. Medicine is only one and it integrates all forms of healing that passes the tests of scientific evidence. Other forms of healing based on non scientific methods and/or believes exit and can be helpful in managing patients but they are not to be included within the confines of medicine. Modern medicine is integrative and must find scientific ways to solve everyday medical problems. HBAM introduces a system of definitions and concepts that can assist in the understanding and management of such clinical problems.

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