Biopsychosocial Medicine and Health – the *body mind unity theory* and its dynamic definition of health

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The Biopsychosocial Model offers the most comprehensive background theory for scientific medicine. The most powerful version of this framework may be called a *body mind unity theory* (or more precisely: a *brain mind unity-theory* or *organic unity theory*). This theory stresses a one world perspective, using the *General System theory*, and overcomes the dualistic concept of psychosomatics (Egger 1992, 1993, 2005).

The term *biopsychosocial* model was first used in medicine by George Engel, however there are a number of other prominent researchers, who have contributed significantly to the evolution of this theory over the last 4 decades. They all were not content to accept the boundaries and limitations of the leading biomedical theory (Engel1976, Luriya 1992, Weiner 2001, Kandel 2006).

The biopsychosocial model – or more precisely: the *body-mind-unity-theory* – does not oppose the biomedical model, which dominates this field until now. This new framework still recognizes the long and successful story of the biomedical model. However, the biopsychosocial approach attempts to widen our horizon by incorporating psychological and eco-social factors as a strong impact for health and disease. Such an undertaking – meaning the parallel use of physiological, psychological and environmental influences – certainly need a potent metatheory (Egger 2000, 2012, Kriz 1997, Foss & Rothenberg 1987).
But let us start to look at the different scientific definitions of the phenomenon of health. A short overview reveals 4 totally different ways to define health:

There is (1) the old, idealistic and static definition of the WHO, misunderstood over decades as a scientific definition, totally unusable for scientific work, (2) then we have the well known biomedical concept of health, (3) the psychological definition of health and (4) the public health concept.

These definitions are not interlinked because there was no theoretical background to manage this until the General System Theory was developed. This metatheoretical basis offers a way to integrate the different approaches.

A brief look at the different scientific concepts of health:

(a) the socio-political (static) definition of the WHO
(b) the bio-medical concept of health
(c) the psychological concept (health psychology)
(d) the sociological & social medicine concept (public health)

Integration (synthesis):
the biopsychosocial understanding of HEALTH

Fig. 3

The psychological definition of health focuses on the individual’s experience of vitality and his habitual behaviour. Each person must take up the responsibility of gathering knowledge about health and of performing an adequate health behavior in his daily life; the doctor is primarily a catalyst, offering help so that the patient is equipped to help himself.

The eco-social definition of health stresses a necessary good fit of a population to the conditions of the ecological and social life; health depends on a successful adaptation to the specific eco-social environment; this primarily is a matter of health politics in every society.

At this point of the discussion we may summarize: health – from a general point of view – obviously does not mean the absence of illness; it cannot be defined as a state. So we have to find an answer to the question „what else does health mean?“. The summery of a common understanding of health derived from everybody’s opinion, as well as from the professional approaches, offers an interesting definition: Health means the ability to work and to cultivate an active social life.

Fig. 5

Fig. 4

Within the biomedical definition, health is seen as an undisturbed somatic function of the whole body, without any pathological signs or symptoms. There is almost nothing to do for a doctor except primary prevention of sickness such as vaccinations or an explanation of recognized risk factors; the doctor acts as an expert and problem solver.

THE BIOPSYCHOSOCIAL DEFINITION OF HEALTH
(well-being, wellness)

Health as an experience of vitality and behavior

Experienced health:
to feel healthy, vital, a form of well-being.

Therapeutical approach:
knowledge and motivation to as well as competence for healthy behavior

Each person is at least partially responsible for his/her own health, changing the individual health behavior

The therapist acts as a catalyst (gives advice so patient can help himself)

Personal traits, situational and long lasting behavioral risk factors (risk profile) as well as protective factors

Individual perspective (experience)

THE ECO-SOCIAL DEFINITION OF HEALTH
(public health)

Health as a salutogenic human-environment-fitting

Metaperspective
Health as a successful adaptation to socio-ecological life situations or living conditions

Therapeutical approach:
population or groups of people, external alterations in living conditions (social-political, ecological) and changes in the behaviorism of populations

(Shared) responsibility of social and ecological "environment"-politics; public health

Metaperspective

THE BIOMEDICAL DEFINITION OF HEALTH
(health, fitness)

Health defined as an undisturbed somatic function of the body

from the perspective of the observer
Health defined as lack of (organic) pathological diagnosis
~ only one form of health, yet many facets of illness

Therapeutical approach:
primary prevention of illnesses
the human body is reduced to a complex machine
problem solving by an expert (therapist as technician or problem solver)

No action required except vaccinations or explanation of risk factors

Focus
observer’s perspective

Fig. 6

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At this point of the discussion we may summarize: health – from a general point of view – obviously does not mean the absence of illness; it cannot be defined as a state. So we have to find an answer to the question „what else does health mean?“. The summery of a common understanding of health derived from everybody’s opinion, as well as from the professional approaches, offers an interesting definition: Health means the ability to work and to cultivate an active social life.
From a metatheoretical perspective the phenomenon health is best described within a biopsychosocial concept. The revised Biopsychosocial Model of Illness and Health – sensu body mind unity theory, which offers a scientific framework for an integrated medicine in the 21st century – stresses a system theoretical scientific definition of health:

**Health within the biopsychosocial model**

Health is defined as the sufficient competence of the system “human being” to cope self-regulating with any stressful disturbance on every system level (“autoregulative power”).

Health, therefore, is not the result of absent pathogens (e.g., viruses, bacteria …) or the absence of psychological stress or conflicts, but the ability to control those pathogenic factors sufficiently.

**ILLNESS AND HEALTH ARE NOT STATES BUT DYNAMIC PROCESSES. HEALTH HAS TO BE CREATED AT EVERY MOMENT IN LIFE.**

Fig. 7

**Health** is defined as the sufficient competence of a person to cope through self-regulation with any stressful disturbance on every system level. Health is not the result of absent pathogens (e.g., viruses, bacteria …) and means not the absence of psychological stress or conflicts, but the ability to control those potentially pathogenic factors sufficiently. Health therefore is seen as an intrinsic power for resilience (“autoregulative power”). Illness and health are not states but dynamic processes. Health, therefore, has to be created at every moment in life.

Within this new understanding health and illness are no longer seen as two different entities. They are not dichotomous or separated from each other. The General System-Theory postulates parallel levels of reality. Therefore, it makes no sense to greatly differentiate difference between healthy and ill. A person can function more or less normally on different levels at the same time. It also does not make much sense to differentiate between an organic and a psychological (or mental) disorder – these are primarily phenomenological perspectives (Goodman 1991, Petzold 2001).

One crucial point is that for diagnostics and for therapy as well, all three relevant levels – id est. physical, psychological and eco-social level – have to be investigated and considered in a parallel approach. All three levels belong to the same reality even if they are investigated by different methods, different concepts or different terminology. All three levels constantly interact with each other. All forms of life interact with their specific environment: The gene-expression of each organism reacts to changes of life environment. Our body-organs react in complex interaction to the specific changes of the biochemical milieu within our organism. We – as individual persons – react permanently to changes of our social and ecological environment (Egger 2008, Uexküll & Wesiack 2003).

What we need is a new strategy for the daily work in data gathering. It is necessary to collect data from the different system levels in a simultaneous way. Then, we have to integrate this data for a more or less simultaneous intervention or treatment. Figure 9 shows the main three topics for such a parallel intervention. Certainly, this job can be done better by teamwork, where different experts discuss their specific data and interpretations as well as their options for intervention.

**Main questions about the multi-perspective data integration and treatment**

1. **Biopsychosocial model of a disorder / illness**
   How can we integrate the collected data from the biological level (medical data, facts), psychological level (reported complaints and personality) and eco-social level (pt’s psycho-chemical and social environment) to a holistic understanding?

2. **Possible ways of interventions**
   What kind of interventions may be drawn from the biopsychosocial model (ex 1) on each of the 3 levels (biomedical, psychological, eco-social)?

3. **Individual treatment**
   Which of the possible interventions (ex 2) may be the most important to start with?

The reason for this form of procedure is that every event runs – due to the vertical and horizontal networks – more or less simultaneously on the different system levels. This phenomenon may be technically described as parallel interface (in German “parallele Verschaltung”). However, this does not mean that all effects can be observed at the same time. Due to the different progression of processes on each involved system level, some effects will develop faster, while others only can be observed with delay. As an example, we could consider the long exposition to UV-light before melanoma occurs, or the latency between emotional stress exposition and gastric ulceration.
It is important to mention here that we do not get an adequate insight or understanding of a pathogenetic process by collecting data only at one system level. There will be new phenomena on the next higher level that we could never observe on a lower system level. In other words; even the greatest of efforts within the levels of neurology or biochemistry will not be able to describe the phenomena of personal experience or individual behavior – and this is also true vice versa. The explanation to this is that each higher level produces phenomena, which do not exist in the level beneath.

Another problem arises by reducing the data on pathogenetic aspects and not using the protective influences. We have to consider the risk factors as well as the protective factors at all stages of an etiopathogenetic process. We already have a commonly used medical concept called risk profile for many disorders, but we do not have an interlinked concept for the simultaneous effect of risk factors and protective factors. We have to find answers to „What may endanger health? What put health at risk? What may produce pathological processes?” And at the same time „Which elements are health protective? What may protect from sickness?”

**Protective Factors**

External and internal conditions, which delay or divert sickness and can accelerate healing:

+ **Genes and the actual condition of the organism** („Gewöhnensie – each man as an exhibition of his own history“)
+ **Physico-chemical and social conditions of environment** Biologically "fitted" life conditions, sufficient psychosocial network
+ **Individual approach to health** (health behavior) individual habits of the experiencing and behavior of a person in context of his life conditions - protective, psychological factors
  - physiologically: adjusted physical exercise, balanced diet ...
  - cognitive and emotionally: distinguished sense of coherence, optimistic attitude/confidence, self efficacy, humor, finding security in daily rituals ...
  - socially: experienced social support, perceived social security, Sinn stifte den work or life routines ...

**Health producing psychological factors**

- Psychological „sources of health” with empirical evaluation (short list)
  - sense of coherence (Antonovsky)
  - Intrinsic locus of control (Rotter), health locus of control (Muthny & Tausch)
  - Self-efficacy / expectancy of competence (Bandura, Schwarzer)
  - Self regulation / self control (Kanfer u.a.)
  - Dispositional optimism (Carver & Scheier)
  - Hardiness (Kobasa) / Resilience
  - Mindfulness (Langer; Kabat-Zinn) / self esteem
  - Healthy thinking (Kendall), rationality (Epstein & Meier), health knowledge
  - Perceived social support (Siegrist)
  - Positive covert (inner) dialogue, automatic cognition (Ingram & Wisniewski)
  - Euthymia / ability to enjoy / regulation of emotions
  - Well being / self-actualization / appreciation (mental sanity, Becker)
  - Wisdom / competence to handle life disturbances (Baumann & Linden)

**Fig. 11** shows an overview of potentially protective influences on creating and sustaining health. They all are simultaneously involved in the process of generating health and respectively of producing illness. Another implication of the biopsychosocial model is that all events or processes contributing either to the etiology, to the pathogenesis, to the symptomatic manifestation, or to the treatment of disorders, are consequently not either biological or psychological, rather simultaneously both biological and psychological.

Every psychological phenomenon – that means every thought, every feeling, every impulse for action or every action itself – is at the same time a physical event as well. Our common language creates the appearance of two independent or separated worlds – a world of body and a world of mind. However, there is only one unified process.

Using this theoretical framework, we understand now better, how psychologically defined events are part of the salutogenetic or pathogenetic process. There are a number of psychological factors who reached sufficient empirical significance to be called “health producing factors”. A summary is given in Fig. 12.

For the scientific research we have to consider that there is no chance to study a disorder as a single entity with all possible factors involved (in German: „das Ganze an sich ist nicht untersuchbar“). Therefore, also in the field of biopsychosocial approach researchers prefer to examine smaller areas of a disorder – dependent on the special interest and expertise of the researcher. Nevertheless, he or she has to incorporate his/her findings into a more general biopsychosocial framework (LeDoux 2001). Although there is no stronger or more potential theory for the scientific medicine, we have to face some critical aspects concerning the biopsychosocial model. The continuing and yet unsolved problem remains; we have no common terminology for the physiological events on one side and for the psychological processes on the other. We are able to realize the parallel organized processes of a disorder, but we still describe these
findings with two different languages or terminologies in medicine: We describe them with biomedical terms on the one hand and with psychological terms on the other hand. In this field we still have to make great efforts, a work, which can only be resolved in interdisciplinary teamwork over the years. Our linguistic system — and therefore our thinking system — is based on a dualistic terminology and lets us believe that we have two worlds: the material world of the body and a somehow strange world of the soul or mind, with no clear idea how they should belong together. But there is only one world (Windmann & Dustewitz 2000): What we can say at the moment is: Whatever may be described by the rules of physics and chemistry belongs to the material world and all events best described by the rules of psychology belong to the world of soul or mind. But they both belong to the same reality and are only separated by our current use of terminology and our traditional way of thinking.

For research, just as for the daily work in medical practice, it is important to accept that we cannot investigate all aspects of a disease — we even do not know what the whole entity of a disease could be. For empirical research we have to deal with simplified linear or so called if-then relations. But we have to remind ourselves, that the linear-causal models are strongly reductional approaches, which can only explore some parts of the involved factors. Disorders or health processes are multi-determined and correspond to non-linear chaotic processes. What we can do is to study the risk- and protective profile, the intercorrelations and interdependencies, as well as the prescriptive or challenging factors within these processes on all three observation levels: the physiological, the psychological and the eco-social aspects. The theory of the Body-Mind-Unity extraordinarily stresses an interdisciplinary research (Egger 2012).

To summarise

Health! — something we wish each other on many occasions — is not a gift of the gods, of stars or of magic. Scientifically, health means a highly complex and dynamic product of interaction of the variables genes, eco-social environment and individual health behavior. Health is not a state at all, it is not something that one can „possess.“ Health has to be created continually on each (bio-psycho-eco-social) system level. Within this process there are a lot of opportunities to recognize health parameters and to control health related aspects by adequate health behavior. So we are able — to some extent and with limitations of course — to create health.

And in general: Biopsychosocial Medicine requires communication between doctor and patient, between all health professionals and between medicine and society as well. The best way to practice Biopsychosocial Medicine is to cooperate within a multiprofessional team. This is true for research and for the patient’s treatment as well.

The biopsychosocial understanding of illness as a leading topic for education in human medicine

3 major aspects of applying help in medicine

**WORD**

communication, psychological factors

**DRUG**

pharmaceutical factors

**KNIFE**

technical / surgery factors

**antic healing arts sensu Asklepios (Askulap):**

First heal with words, than cure with drugs, finally treat with knife

**medical science sensu Biopsychosocial Medicine:**

Find out what’s the best help for your patient and treat him with all adequate tools – so be able to use words, drugs, and knife simultaneously

For the daily work in biopsychosocial medicine, it is not important to be an expert in all relevant levels of a disease. It cannot be expected to be both an expert on hard core medicine of a certain disorder and — at the same time — be an expert of psychology on individual experience and behavior of a person — or even a specialist on the eco-social correlations of a disorder. However, to practice biopsychosocial medicine, an elementary knowledge of the other terminologies is necessary: The medical doctor needs a basic understanding of the psychological and eco-social variables. The clinical psychologist on the other hand needs a basic understanding of the most relevant biomedical aspects of clinical disorders at hand.

Only if we can achieve an overview of the potentially involved factors on the different levels of observation, we can build a useful mosaic for biopsychosocial research and intervention. Otherwise, all the variables on the higher or lower system levels and their interactions will appear strange or even irrelevant to an expert. In my opinion, we best agree to the old greek wisdom „use word, drug and knife to treat the patient“.

**Literature**


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