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Balint's Basic Fault Theory, General Medicine and Salutogenesis

La teoría de la falla básica de Balint, medicina general y salutogénesis

Teoria básica da falha de Balint, medicina geral e salutogênese

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Resumen

Este ensayo pretende justificar científicamente la incorporación de la teoría de la falla básica (TFB) de Michael Balint en la educación médica. Esta teoría postula que los seres humanos sufren un déficit entre sus necesidades y lo que el entorno les proporciona durante periodos críticos del desarrollo en la infancia y posiblemente desde la vida intrauterina. El déficit puede ser biológico, físico, psicológico o social. Mientras más pronto se compense la falla básica, mejor será la salud posterior de la persona. La enfermedad clínica, en esta interpretación, es un síntoma de una falla básica no compensada. Balint propuso la TFB en oposición a la teoría de los agentes externos que penetran las defensas de un organismo básicamente sano, que suele enseñarse en las escuelas de medicina. La TFB facilita un acceso directo al método clínico centrado en la persona, facilita el abordaje a través de la medicina basada en narrativa; y destacadamente, admite la compasión como elemento terapéutico en la relación médico-paciente. Conceptualmente, compagina claramente con los enfoques salutogénicos como "La historia natural de la salud" que están emergiendo en la educación médica. Los fundamentos científicos que apoyan la TFB provienen de campos como la genómica social, la sociología, y la teoría histórico cultural del aprendizaje.

Palabras clave: Empatía, Relaciones Médico-Pacientes, Educación Médica.

Abstract

This essay aims to scientifically justify the incorporation of Michael Balint's basic failure theory (BFT) into medical education. This theory postulates that human beings suffer a fault between their needs and what the environment provides during critical periods of development in childhood and possibly from intrauterine life. The fault can be biological, physical, psychological or social. The sooner the basic failure is compensated, the better the person's subsequent health will be. Clinical illness, in this interpretation, is a symptom of an uncompensated basic failure. Balint proposed BFT in opposition to the theory of external agents penetrating the defenses of a basically healthy organism, which is usually taught in medical schools.

BFT facilitates direct access to the person-centered clinical method, facilitates the approach through narrative-based medicine; and notably, admits compassion as a therapeutic element in the doctor-patient relationship. Conceptually, it clearly fits with salutogenic approaches such as "The natural history of health" that are emerging in medical education. The scientific foundations supporting TFB come from fields such as social genomics, sociology, and historical-cultural learning theory.

Keywords: Empathy, Physician-Patients Relations, Education Medical.

Resumo

Este ensaio tem como objetivo justificar cientificamente a incorporação da teoria básica da falha (TBF) de Michael Balint no ensino médico. Essa teoria postula que os seres humanos vivenciam um déficit entre suas necessidades e o que o ambiente lhes proporciona durante períodos críticos do desenvolvimento na infância e possivelmente até mesmo desde a vida intrauterina. O déficit pode ser biológico, físico, psicológico ou social. Quanto mais cedo a deficiência subjacente for compensada, melhor será a saúde subsequente da pessoa. A doença clínica, nessa interpretação, é um sintoma de uma deficiência subjacente não compensada. Balint propôs a Teoria Funcional Básica (TFB) em oposição à teoria de agentes externos que penetram as defesas de um organismo basicamente saudável, teoria essa comumente ensinada nas faculdades de medicina. A TFB facilita o acesso direto ao método clínico centrado na pessoa, facilita a abordagem por meio da medicina baseada em narrativas e, notavelmente, reconhece a compaixão como um elemento terapêutico na relação médico-paciente. Conceitualmente, alinha-se claramente com abordagens salutogênicas como "A História Natural da Saúde", que estão emergindo na educação médica. Os fundamentos científicos que sustentam a TFB provêm de campos como a genômica social, a sociologia e a teoria histórico-cultural da aprendizagem.

Palavras-chave: Empatia, Relação Médico-Paciente, Educação Médica.

Introduction

It is well known that contemporary medical education was restricted to its biological side after the Flexner Report of 1910.¹ Abraham Flexner was an expert in education, but he had not been to medical school before undertaking the mission of evaluating US medical schools. His recommendation was that medicine should be taught by laboratory researchers in the new sciences such as microbiology, pharmacology, physiology, pathology and others. The doctor-patient relationship and its context were neglected, despite William Osler's warning of the negative consequences this would have on the practice of medicine.¹ Since the 1960s, the need to reconsider the training of general practitioners capable of understanding and developing the potential of the doctor-patient relationship and the continuity of long-term clinical care has been evident.² Currently, the emergence of currents that promote the focus on health and not only on disease through the concept of "Natural History of Health"³ would greatly benefit from a theory of health-disease that considered since the 1960s the development of the individual from his intrauterine life and the stages of childhood, puberty and adolescence mainly. In this essay, the relevance of teaching Balint's Basic Fault Theory⁴ (BFT) in the undergraduate and postgraduate medical courses or at least in the specialty of family medicine will be argued. Objective of the essay, to contrast Michael Balint's Basic Fault Theory with the dominant theory implicit in the teaching and practice of medicine that views the individual as an essentially healthy and well-integrated organism, whose harmony is interrupted by an external agent that penetrates its bodily or mental defenses. "The agent can be physical, chemical, or a microbe, and it can also be a mental trauma"⁵

Development of the theme: The theory of external agents Versus Basic Fault Theory (BFT)

In medical education, it is implicitly taught that disease occurs due to an agent-host-environment interaction where the subject is essentially healthy before the interaction. Basically, this is an ahistorical concept that does not consider the subject's prior development. In this framework of thought, preventive health possibilities can only encompass the exterior of humans, and when a person is ill, the only focus of attention is to confront the causal agents. Although this theory may work in acute cases, it cannot offer alternatives in chronic illness when the causal agent(s) are no longer present.⁶ The theory of external agents was strengthened by Pasteur's discoveries of bacteria and his vaccine against anthrax in livestock, as well as the rabies vaccine developed from dried medulla of rabid dogs.⁷ Pasteur's achievements are immense, especially considering that the existence of viruses was unknown at the end of the 19th century.

Similarly, Robert Koch's microbial theory, with its method for identifying causal agents of infectious diseases, bolstered the external agent's theory.⁸

However, there was significant controversy between Pasteur and Claude Bernard, the creator of the concept of "homeostasis of the internal environment," regarding the microbe-host interaction. For Bernard, the subject was more important than the microbe. Why did not all individuals fall ill in the face of the same inoculum? On his deathbed, Pasteur accepted Bernard's stance: Bernard was right. The microbe is nothing; the terrain is everything.⁹ Contrary to the theory of the healthy organism facing external agents, Michael Balint begins from an integrative view of physical, functional, and psychological illness:

"The concept of basic fault allows us to understand various neuroses, psychoses, character disorders, psychosomatic diseases, and common 'clinical' illnesses..."

⁴ Basic fault would be present in all individuals to varying degrees, which can even allow a good level of social adjustment without the basic fault manifesting until a critical event reveals it. ⁵

Basic fault represents an acute discrepancy between an individual's biopsychological needs and the psychological and material care provided, such as attention and affection at the right moments:

This discrepancy creates a deficit state only partially repairable. The cause may be congenital, with heightened biopsychological needs (e.g., Friedrich's ataxia, polycystic kidneys), or environmental, with insufficient, deficient, random care, overly anxious or overprotective attitudes or harsh, rigid, incoherent, untimely, overstimulating, unempathetic, or indifferent care.⁴

This theory aligns with the diffuse boundary between mental and psychological illness that is seen in general medicine and coincides with data of a common pathway of chronic inflammation triggered by psycho-immuno-endocrine disorders in significant public health issues, such as bronchial asthma, allergies, autoimmune disease, depression, osteoarthritis, heart disease, and even aging.¹⁰ From other disciplinary fields, the correspondence between BFT and the historical-cultural theory of learning developed by Lev Vygotsky are remarkable. As it is his conception of social stages of development and of *perezhivanie*, a Russian word that integrates the perceptual unity of the subject at various ages, selectively gives meanings to one's life experience.¹¹

Gestational development and the basic fault

In this century, the transdisciplinary science of life course epidemiology (LCE) has emerged, defined as

the study of: "The long-term effects on health or disease of exposure to physical or social risks during gestation, childhood, adolescence, and adulthood."¹² LCE suggests that intrauterine malnutrition could affect the function of tissues, organs, and body systems through "biological programming," a notion particularly supported by epigenetics. It has long been accepted that physical, chemical, and biological factors affect the biology of the embryo and fetus; what is difficult to accept is that our mind does not start completely blank, as explained below.

Humans perceive their context before birth

The idea that humans are born without perceiving anything during gestation was expressed in 1690 by the physician and philosopher John Locke in his book *An Essay Concerning Human Understanding*.¹³ Today, we know that social interaction begins before birth, and that our life experiences interact with our genome, influencing each other. We also know that we are born with basic structures of thought upon which complex ideas and concepts are built; in cultural psychology, these are called skeletal structures¹⁴ which allow for the construction of mathematical and logical thinking, among others.

Babies remember sounds heard in utero at the end of gestation

In 1984, experimental psychologists already knew that babies could discriminate objects and recognize their mother's voice almost immediately after birth.¹⁵ Also, it had been demonstrated in rats that lithium chloride (a emetic) in amniotic fluid given along with apple juice caused newborn rats exposed to lithium to reject the apple juice, while the control group drank it freely.¹⁵ Rats were conditioned to reject apple juice *in utero*. On the other hand, experimental psychologist Anthony DeCasper had observed that newborn babies distinguished their mother's voice from that of other people. With this data, DeCasper experimented with 16 pregnant women. He asked them to read the book *The Cat in the Hat* repeatedly during the last 7 weeks of their pregnancy. The babies of those mothers were exposed to a system where, depending on the rhythm with which they sucked on an artificial nipple, they could select the recording of their mother reciting the story that was read in the experiment, or the same voice of their mother reciting another book, *The King, the Mice and the Cheese*, which has a very different meter. The babies sucked to hear the first one.¹⁵ This was interpreted as a learned preference in utero. However, the experiment lacked a control group, and the sample of 16 women was not random. In 2002, another researcher replicated the experiment but randomized the sample and established a control group.¹⁶ The results demonstrated

that fetuses distinguished the music to which they were exposed in utero. In James's words:

*The fetal exposure to a complex auditory stimulus (music applied to the maternal abdomen) results in altered behavior in the fetus that translates into altered behavior in the neonatal period compared to unexposed controls."*¹⁶

The authors concluded that a simple form of fetal programming or learning had occurred.

Birth malformations associated with psychosocial stressors of expectant mother

According to Hans Selye, the creator of the concepts of stressor, stress response, and general adaptation syndrome, there is good evidence that exposure of pregnant women to unusual psychosocial stressors causes developmental anomalies, specifically noting malformations.⁹ Selye gives the example of migrant workers (an unusual stressor) in Germany and Czechoslovakia and the high rates of children with trisomy 21. At the laboratory level, Selye's experiments show consistency:

*From experiments using guinea pigs and rats in overcrowded environments and hot environments, an increase in congenital anomalies and brain damage is observed."*⁹

Psychosocial stressors and disease

Follow-up studies on children who have experienced early psychosocial stressors in their development it has been found a significant association between traumatic events in childhood and depression and substance abuse in adulthood.¹⁷ The greater the number of traumas before the age of 18, the greater the risk of effects in adulthood. McWhinney makes a note that concurs with what Hans Selye stated regarding the relationship between stressor and stress response:

*The pathogenicity of social trauma is not direct, as in the case of physical-chemical agents; rather, it is indirect, modifying the host's response to pathogenic agents."*¹⁷

Social genomics and basic fault theory

The interaction between genes and psychosocial environment supports the theory of basic fault. Prospective cohort studies have correlated psychological diseases with events in childhood and their different effects based on genotype. For example, depression is predicted by the interaction of the 5-HTTLPR (5-hydroxytryptamine transporter gene region) genotype with prior stressful events in life history. The

data suggested that a correlation between genes and environment.¹⁸ Maternal rejection, sexual abuse, or severe punishments were associated with the development of aggressive and antisocial behavior in men. The effect varied depending on the presence or absence of a single nucleotide polymorphism (SNP) of the gene coding for the monoamine oxidase type A (MAO-A) enzyme.¹⁸ It was clear that a behavioral phenotype was associated with a specific mutation. Subsequent studies replicated the findings.¹⁸ It can be deduced that antisocial behavior required the presence of a specific social environment (severe maltreatment) and genetic inheritance with a mutated nucleotide. The effect it is not the same for those who inherit homozygous alleles (pairs of identical genes on their chromosomes) or heterozygous alleles. The resulting range of behavioral expressions (phenotypes) is very broad:

*What the environment does is facilitate or hinder the expression of genotypes.*¹⁸

Considering the research on the gene-environment association, the boundary between the two has become blurred; the environment influences gene expression, and genes influence social environments.¹⁸ These data challenge centuries of separation between culture and genetics; what scientific research indicates is that environment and genes interact. In the past 30 years, it has been recognized that human genomes are influenced by social environments, leading to the emergence of the new science of *social genomics*.¹⁹

Loneliness and social genomics

Socially isolated individuals have a different transcriptome compared to those with multiple social connections. This situation is associated with high concentrations of circulating inflammatory proteins in their bodies, which is a factor in many chronic diseases and viral infections. The complex of genes activated in social isolation is known as the Conserved Transcriptional Response to Adversity (CTRA). The CTRA has also been identified in individuals experiencing grief, post-traumatic stress, and poverty. It aligns in experimental models with animals in social instability conditioned to repeated social defeat.¹⁹ The conditions of the social environment can regulate the composition of neuronal molecules in the central nervous system and thus alter psychological and behavioral responses to future environments.¹⁹

Social environment and fetal development embedded throughout the life course

It is important to know that an adverse and prolonged social environment during early childhood or the fetal period can become embedded and permanent. One pathway for this permanence is the influence

of the autonomic nervous system on the immune system:

*It has been shown that sympathetic nervous system fibers invade and hypertrophy within immune system ganglia, affecting the ability to defend against infections or eliminate cancerous cells.*¹⁹

Social genomics teaches us that gene expression is both a cause and a consequence of individual behavior, the cultural and natural aspects of life depend on each other:

*...both modulate behaviors through the structure of human brains, influenced by individuals' perceptions and meanings.*¹⁹

Nowadays, are quite clear that social environment modifies the expression of genes controlling the hypothalamic-pituitary-adrenal axis mechanisms, which is vital for regulating the stress response.²⁰ There is solid evidence that child maltreatment is associated with high methylation of exon 1F of the NR3C1 gene, and that more frequent and severe maltreatment correlates with greater methylation of this exon. The result is that the response to cortisol is altered in lymphocytes and leukocytes of the peripheral immune system. This is strongly associated with the quality of childhood experiences, major depression, and dysfunction of the hypothalamic-pituitary-adrenal axis. Among other effects, this may explain the limited efficacy of antidepressants in individuals with persistently elevated cortisol.²⁰ Michael Balint's theory of basic fault finds strong empirical support from biological sciences that did not exist in his time.

Conclusions

The evidence that humans can recognize their mothers' voices immediately after birth, and that we retain memories of sounds, is convincing. Today we know that from birth onward, our genome and the contexts in which we grow interact until the day we die. For medicine, the implications of this knowledge are enormous, as they highlight the importance of the gestational process in psychological and social terms, in addition to biological ones. They support the theory of basic fault that Michael Balint bequeathed to general medicine, which implies considerable potential for the prevention and preservation of human health.

And after such abundant scientific knowledge, what can a general practitioner do to alleviate at least something of their patients' basic fault? Here, science aligns with ancient human knowledge transformed into popular wisdom, as it is demonstrated that even amid poverty, a mother's loving care for her child mitigates life's adversities.²¹ This is in line with sociology

that asserts that affectionate social relationships buffer the effects of environmental stressors.¹⁷ Compassionate attitudes in the doctor-patient relationship have proven clinical effects.^{22, 23} And medical educators believe that this type of doctor-patient relationship can be taught in a variety of ways.²⁴

Perspectives that could emerge from teaching the BFT in general medicine

This essay could motivate research lines regarding the opinions of patients and general practitioners concerning the Basic Fault Theory. The incorporation of this theory into the internalized dispositions of the general practitioner's *habitus*²⁵ offers a direct path to person-centered care according to the person-centered clinical method²⁶ and facilitates the expression of the patient's life narrative, with the therapeutic effect this entails.^{22, 23, 27-29} Understanding basic failure theory may facilitate acceptance of Balint groups into medical undergraduate programs.³⁰ In the case of individuals with diabetes mellitus in Mexico who reject explanations based on the biomedical causal model,³¹ the BFT could open a door to empathetic understanding that would strengthen the doctor-patient relationship for the indispensable long-term follow-up in disease management. It is not about turning the general practitioner into a psychoanalyst as Balint said,³² but about embracing the depth of the "art of medicine" that McWhinney attributes to the fusion of affection and charity⁶ from the physician, which Adler refers to as compassionate equanimity.²² The equanimous and compassionate attitude can be taught in workshops with specific methodology.³³ Michael Balint's extensive work with general practitioners in their real-life practice conditions, and his being one of the pioneers of relational and not just individual psychoanalysis, enabled him to bequeath the working groups that bear his name. Such groups are a proven resource for addressing the emotional complexities of the doctor-patient relationship without the physician having to abandon his framework of knowledge and techniques.³⁴

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