Research Article

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Journal of Orthopedic Disorders

2021
Vol.4 No.2:5725

What is the Biopsychosocial Model? How does it apply to Rehabilitation Treatment?

Rafael Salazar*

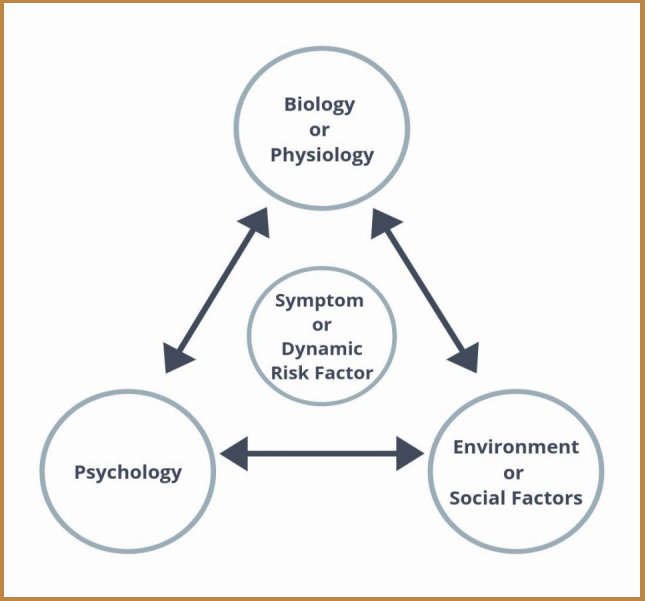
Department of Neurosciences, Case Western Reserve University School of Medicine, Cleveland

***Corresponding author:** Rafael Salazar, Department of Neurosciences, Case Western Reserve University School of Medicine, Cleveland, Ohio 44106, Tel: 198764630267; E-mail: rafaelsalzar@brooklinecollege.edu

Received date: August 07, 2020; **Accepted date:** August 19, 2021; **Published date:** August 30, 2021

Citation: Salazar R (2021) What is the Biopsychosocial Model? How does it apply to Rehabilitation Treatment? J Orthop Disord Vol.4 No.2

Abstract



If you haven't been living under a rock for the last several years, you have likely heard the term biopsychosocial. Most likely, you've heard it referenced as the Biopsychosocial Model of healthcare. But what does that actually mean? How is it applied to rehabilitation and healthcare as a whole?

In this article, we'll

- Define and describe the Biopsychosocial Model of healthcare
- Explore its application to actual clinical practice
- Review relevant literature and research about it

Defining the Biopsychosocial Model

The biopsychosocial model has been described both as a philosophy of clinical care and a guide for clinical practice [1]. It proposes that suffering, disease, or illness involve a host of factors from biological (tissues, structures, molecules) to environmental (social, psychological). Each of these factors affect a patient's subjective experience, clinical outcomes, and effective treatment throughout the treatment process or course of a disease. This approach to providing care takes into account the physical, psychological, and social factors of the disease or injury and promotes an integrated approach to treatment [2].

It has become a rather popular and regularly studied topic over the past several years.

It would seem apparent, especially in instances of chronic pain, that a simple explanation like "arthritis" can not adequately explain what is truly going on with that particular patient.

While there very well may be biomechanical and physical issues like joint degeneration, to simplify a patient's suffering or pain to this one diagnosis seems misguided.

And what about patients who are experiencing real debilitating pain, but have no physical or biomechanical issues that can explain it?Are these patients simply "making it up"? Is it "all in their head"?

Basic Principles

I'd say that the answer to those questions above is a resounding, "No". But in order to understand why, we have to understand a few basic principles about all of the biopsychosocial factors that affect our health and well-being:

- The relationship between psychological and physical factors of health can be extremely complex. A patient's subjective experience can result from physiological factors, but it can't simply be reduced to them [1].
- These different factors affect each individual differently, since we are dealing with this individual's subjective experience.
- Changes in one of these factors (biological, psychological, or social/environmental) potentially create real and notable changes in the other factor(s) [3].

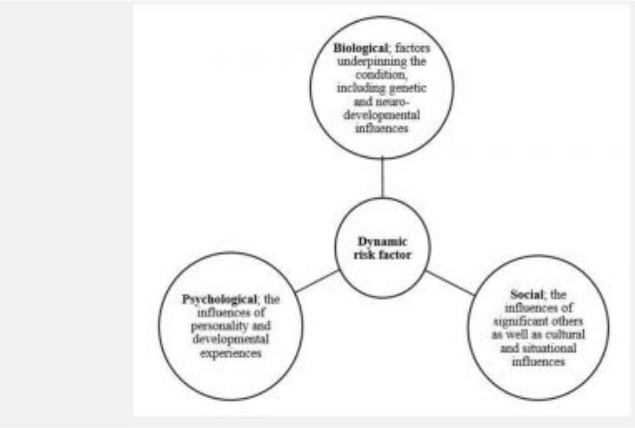


Figure 1: Dynamic Factors of Health & Well-being Interact with One Another.

Physical Factors

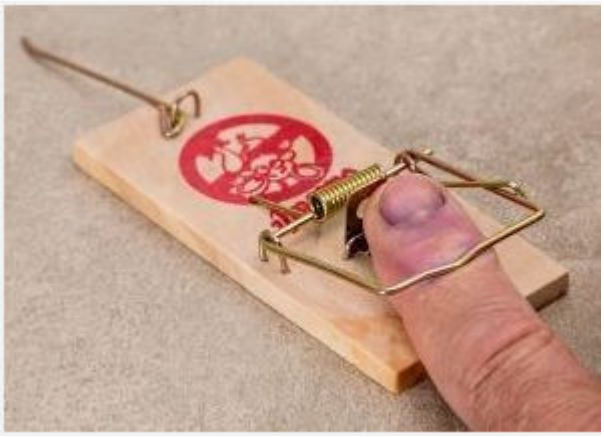


Figure 2: Physical Factors Causing Pain.

As clinicians, we all have a fairly good grasp on the physical factors that may adversely affect out patients' health, function, or pain. These include: acute injuries to the tissues, postural misalignment, arthrokinematic dysfunction, nerve damage, tissue lesions or lacerations, inflammation, and even weight/ body type. All of these factors stem from biological or physiological roots, and they affect not only the function of the affected areas, but they also affect a patient's psychosocial health.

In fact, something as simple as BMI (a physical factor), has been shown to impact a patient's physical functioning and social functioning as well [5].

Given it's prominence in the education of clinicians, and the fact that it seems easier to understand and grasp, clinicians tend to focus most of our evaluation and treatment efforts on the physical aspects of our patients' conditions. We take range of motion measurements, complete strength assessments, palpate soft tissues, observe posture and motor patterns, complete manual therapy techniques, focus on exercises and stretches, and educate our patients on the importance of doing the exercises correctly. All of this is important and necessary for effective evaluation and treatment, especially in cases of acute injuries or traumas. However, if we only go so far as the tissues, we potentially miss the other important aspects that can affect not only our patients' experience of pain or dysfunction, but also their response to treatment [3][4].

Psychological Factors

Since as early as the late 1970's, there has been an increasing focus on the role of human behavior and psychology play in determining our overall health and well-being. Up and to that point in time, the healthcare field had been based on the biomedical model of evaluation and treatment [6]. There are many reasons for this that involve in-depth discussion of the philosophical underpinnings of the culture and the times when the field of medicine and healthcare was born. Regardless of the reasons behind the focus on the biology of disease, the fact is that the healthcare field began focusing mainly on the physical aspects of disease and health.

This focus on the psychological factors of health and disease opens up an entire new world for both medical researchers and clinicians alike. For example, research has been published showing a direct relationship between a patient's cognition and physical abilities or performance [7].

As mentioned previously, to reduce a patient's condition, limitation, or dysfunction down to a "problem" with the tissues or body misses the great impact that the patient's psychological state and cognition has on their subjective experience of their condition.

Neurophysiology & the Neuroscience of Pain

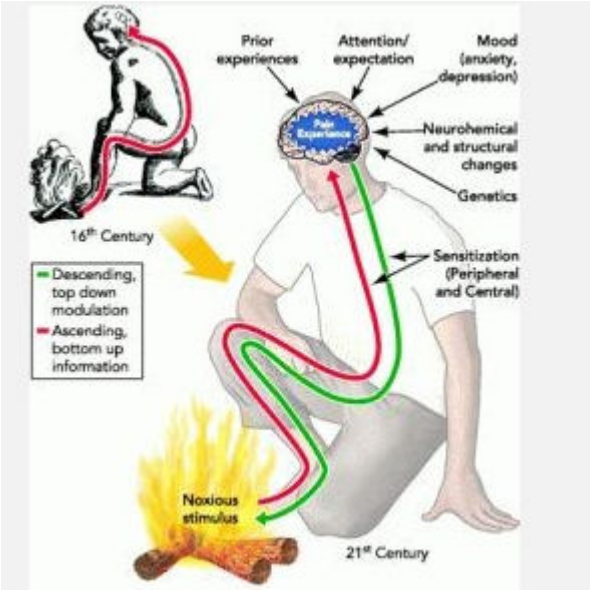


Figure 3: Neuroscience of Pain.

As an example of the interplay between the psychological and biological factors that may affect a patient's daily routines, consider recent research of neuroscience education in patients with chronic pain. As we have recently discussed here, evidence suggests that how we educate patients about their conditions and pain can have a real impact on clinical and performance outcomes.

Studies have shown that combining neuroscience education with traditional physical rehabilitation treatment can improve outcomes in patients with chronic low back pain [3]. There is also evidence suggesting that approaching patient education nation from a purely biomechanical (biological) frame of reference may actually increase stress, anxiety, and even negatively impact clinical outcomes [8].

The important thing to remember here is that pain is always real. That can't be stated enough: pain is always real. Given what we know about the neuroscience of pain, we understand that pain is a protective mechanism of the brain. Essentially, the brain creates pain. Therefore, when a patient reports pain (even though they may have normal x-rays or imaging studies), the odds are very likely that they are truly experiencing pain. Acknowledging a patients pain as real is the first step in building a strong therapeutic relationship.

Social Factors

The biopsychosocial model is based on the understanding of the dynamic nature of differing factors that affect a patient's experience and ultimate outcomes. Social factors may impact a patient's behavioral response to physical conditions or symptoms [9]. This is largely due to the fact that sociocultural factors —beliefs about illness or treatment— can cause patients to think differently about their conditions, the efficacy of treatment, or even their willingness to participate. Social learning impacts a patient's development of pain response behaviors, expression of pain, and even expectations of outcomes. How many times have you heard a patient say, "Well my neighbor (or cousin, aunt, etc) had this [insert diagnosis/ condition] and they never got better."? Studies have shown that physiological responses to pain can be conditioned by simply observing others in pain [9].

Taking that into consideration, you begin to understand the interaction between the physical, psychological, and social/ environmental factors at play in a patient's experience of an injury or illness.

Social influences also affect the way families, community groups, and acquaintances interact with people experiencing chronic conditions, pain, or diseases. On top of that, ethnic expectations, cultural norms, even sex and age stereotypes affect the patient-clinician relationship [9]. Starting as children, we learn socially appropriate —or acceptable— ways of reacting to and dealing with illness or pain. As an example, anyone with a toddler knows that young children experience minor falls, bumps, and bruises almost daily. How parents or adults respond to these minor injuries creates learning opportunities for how to ignore, respond to, or even over-respond to pain [9]. This can trigger operant learning mechanisms that can lead to the formation of chronic pain conditions. All of this suggests that clinicians must understand any potential social or cultural influences that may be affecting a patient's experience of a given condition.

Clinical Application of the Biopsychosocial Model

Alright, so you understand how physical, psychological, and social/environmental factors interact throughout a patient's experience of a disease, injury, or illness. But how does that change your treatment approach as a clinician? Let's take a brief look at how the biopsychosocial model can be applied in a clinical setting.

Assessment

Firstly, an assessment or evaluation approach using the biopsychosocial model as a guide emphasizes not only the biological or physical symptoms and factors, but also the patient's experiential perspective [10][11]. It addresses broader issues such as biological, psychological, and social components that remain unique to that individual patient. Understanding this, assessments rooted in this model use physical, psychological, behavioral, and cognitive measures to understand each patient's unique pain condition [10].

While there is no definitive list of assessments to use, clinicians must not fall into the assumption that one is inherently better than the next. Also, even though physical measures (ROM, MMT, etc) provide more objective information than self-reported measures, both should be considered when assessing a patient's status using the biopsychosocial model [10]. As noted above, psychological state can influence performance on physical measures. For example, fear of movement or pain and/or lack of motivation may affect the results of physical outcome measures [10].

Outcome Measures

When selecting measures to use in an assessment, consider which measures will assimilate to a complete analysis of a

patient's unique condition and experience. It is generally recommended that a step-by-step approach to assessment is followed. By starting with a general evaluation of potential precipitating factors (injury, tissues, posture, etc) and then moving deeper into a more specific assessment of additional psychological or social factors, clinicians better understand their patient's unique conditions and are able to develop a more comprehensive treatment plan [10]. The main idea is that you should be selecting assessments and measures that can get "the whole picture" of what may be going on in a patient's specific situation and diagnosis.

Treatment Approaches

If you follow the assessment approach using the biopsychosocial model, then you understand that there are too many factors at play for rigid treatment protocols or "cookie-cutter" treatment programs. Even if two patients are referred to your clinic with the same diagnosis, they each differ physically, socially, or even psychologically. Because of all these factors, which can be different with every patient, throwing these patients into the same exact treatment program will likely result in suboptimal outcomes [10].

When I was just starting out in the world of outpatient orthopedic rehabilitation, I remember an older and more seasoned therapist telling me in my first week at the clinic that "a shoulder is a shoulder is a shoulder." I operated under that assumption for a while, achieving mediocre or average outcomes with my patients.

I wondered why some patients got better very quickly, while others with the same diagnosis struggled to make even modest progress towards their treatment goals. It wasn't until I began to explore the application of a biopsychosocial approach to treatment, that I began to see and experience the results both my clients and I wished for.

By addressing not simply the physical symptoms and issues with the patient's tissues, joints, and posture —and taking a broader look at each individual's context and situation— I was able to deliver a higher standard of care. This became most evident in treating patients who had been experiencing chronic pain for years.

Levels of Care using the Biopsychosocial Approach

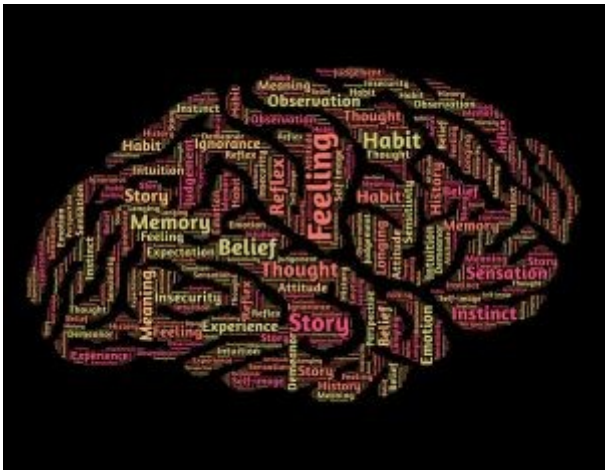
Using issues of chronic pain as an example, let's explore the different stages of care using a biopsychosocial approach to treatment. Firstly, it should be evident that the overall goal of treatment would be to increase a patient's overall functional capacity. This typically involves increasing strength, mobility, endurance while decreasing stress, anxiety, and/or pain.

Depending on the type of injury, duration of symptoms, and patient-specific circumstances, different levels of care can be selected to treat patients experiencing chronic pain. Those three levels include: 1) primary 2) secondary and3) tertiary care [10].

The main goal and focus of the primary level of care is to address the acute symptoms associated with an injury or dysfunction while maximizing movement and function of the affected area [10]. Addressing the physical symptoms in this level may include exercises, movement, manual techniques, or modalities for pain relief. The psychological factors to be dealt with likely include anxiety or fear related to pain, movement, or re-injury. Most patients who experience an injury or trauma experience good recovery by following treatment at the primary level of care. However, sometimes psychological and social factors or issues interact with the physical dysfunctions. This requires a more in-depth rehabilitation process to restore the patient to normal function [10].

Expanding from the primary level, the secondary level of care involves a multifaceted approach to treatment. Instead of receiving a referral from an MD or surgeon and simply providing physical rehabilitation treatment, additional treatment approaches such as neuroscience pain education, graded motor imagery, or cognitive behavioral treatments are included in the lab of care. The goal of the secondary level of care is to avoid physical deconditioning while reducing any psychological barriers that may interfere with recovery. Most patients experience positive outcomes through either primary or secondary levels of care [10].

Functional Restoration



When positive outcomes or progress is not achieved using the first two levels of care, patients may require tertiary care. This is usually due to poor physical or psychological recovery, even legal or work-related issues that lead to increased emotional stress.

An example of this type of care is functional restoration. Using a biopsychosocial approach, the goal of functional restoration programs is to prevent permanent disability [10]. During this level of treatment, the patient receives care from an interdisciplinary team including primary care providers, psychiatry, psychology, medical specialties, physical/occupational therapy, and even disability case management. Working together, this team works to develop a treatment plan focusing not only on increasing mobility and function, but also addressing stress management and coping skills [10]. If the patient has become dependent on narcotic or opioid pain medication, detoxification is necessary.

Evidence shows that functional restoration programs are effective in many populations including those experiencing chronic pain [10]. Using a biopsychosocial approach, patients not only regain function and mobility, but also experience improvements in psychological conditions like depression or anxiety. Improvements in these areas lead to a return to normal activities. It can also improve socioeconomic outcomes through such results as return-to-work and resolution of other medical issues, resulting in less medical expenses [10].

But besides functional restoration programs, a growing body of evidence continues to indicate that an interdisciplinary approach to pain management provides positive outcomes. In fact, even the cost-effectiveness of these treatment approaches have been shown to be more effective and less costly than single discipline or modality approaches [10]. This should give all clinicians pause to re-evaluate the treatment approaches we use every day in our clinics. Are we doing what is most effective for our patients by addressing not only the physical factors affecting their health, but also looking at the psychological and social factors that may be at play? Are we consulting with or referring to other disciplines such as psychology or psychiatry or making recommendations for stress-relieving activities like yoga to help our patients make a truly full recovery? If the answer to those questions is no, then we should take another look at our routine practice and evaluate whether we are really doing the best we can for our patients.

Patient Education and Engagement

Throughout the treatment process, communication, instruction, and education between the clinician and the patient is vital to achieving the best outcomes possible. Since we are talking about the biopsychosocial model, it should be apparent that each of these factors (physical, psychological, and social) are unique to each individual patient that we treat. There are many resources for methods and approaches to patient education (check out our article on explaining pain to patients here), but regardless of the approach you choose, the goal should be to tailor it to each individual patient.

Engaging the patient throughout the treatment process also improves clinical outcomes. During initial interviews and assessments, asking open-ended questions and practicing active listening engages your patient and builds trust and rapport. Increasing a patient's engagement in the evaluation and treatment process strengthening the therapeutic relationship between clinician and patient. It may lead to the patient becoming more open about other factors which may be affecting recovery— such as family-related stress, work issues, or socioeconomic factors at play. This not only improves clinical outcomes, but also improves the patient's overall experience in your clinic and with your services. As we have written about here, increasing patient engagement can improve patient retention. Improving patient retention is good for your bottom line as a business owner, but also good for your patients, who will continue with a treatment program instead of dropping off partially through treatment. That means they will get the maximum benefit of the plan of care you develop with and for them.

Summary

At the end of the day, this is really only a 30,000 foot view of the biopsychosocial model of healthcare and how it can be applied to a rehabilitation setting. Over the last 50 or so years, entire books and programs have been written and developed focusing entirely on this model of healthcare delivery. It's not something that you become great at after reading an article or two. But you can begin implementing pieces of it in everyday practice. For example, simply becoming aware of the psychological and social factors that may be affecting a patient's physical condition will make you more aware of potential complications. It can also help you strengthen and improve the therapeutic relationship you develop with patients.

Patients know when they are being put through a cookie-cutter exercise or treatment program. They don't like it. They also know when the clinician they are seeing takes the time to learn about their individual and specific issue and circumstances. Sometimes, all you need to do to greatly increase a patient's outcomes is take the time to listen to them. When patients feel listened to, understood, and engaged, they take a more active role in their treatment program, which is what every clinician should want. We want patients to come to our clinics, actively participate in treatment, and continue with their programs and improvements long after they leave our clinics. Applying a biopsychosocial approach to assessment and treatment can help make this a reality.

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