

Psychology, Psychiatry and Brain Behaviour: Brief Report

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Why study psychology

Psychology not only help us understand why other people do the things they do, but it also helps us better understand ourselves our reactions to other people. Psychology can help you understand how your brain and body are connected, how to improve your learning abilities and memory, and how to deal with the stresses of life, both ordinary and extraordinary. While studying psychology, an understanding of methods psychologists use is important because research can be flawed, and knowing how research should be done can bring those flaws to light. Finally, the critical thinking that psychology and its methods of research promote can be used to evaluate not just research but also claims of all kinds. Including those of advertisers and politicians [1].

What is psychology

Psychology is the scientific study of mind and behavior. The word “psychology” comes from the Greek words “psyche,” meaning life, and “logos,” meaning explanation. It “embraces all aspects of the human experience, from the functions of the brain to the actions of nations, from child development to care for the aged” [2].

Thus, psychology was a study of the soul or mind. But since then it has moved away considerably from this focus and established itself as a scientific discipline which deals with processes underlying human experience and behavior. A discipline is defined both in terms of what it studies and how it studies. In fact, more in terms of how or method it uses. Keeping in this view psychology is defined as the scientific study of behavior and mental processes. Behavior includes all of our outward or overt actions and reactions, such as talking, facial expressions, and movement [3].

When we say experiences are internal to the experiencing person, then we refer to states of consciousness or awareness or ‘mental processes’. We use our mental processes when we think or try to solve a problem, to know or remember something. One level at which these mental processes are reflected is the brain activity. As we think or solve a mathematical problem, our brain activities can be observed using different techniques of brain imaging. However, we cannot say that brain activities and mental processes are the same, although they are interdependent. Mental activities and neural activities are mutually overlapping processes but, they are not identical. Unlike the brain, the mind does not have a physical structure or has a location. Mind emerges and evolves as our interactions and experiences in this world get dynamically organised in the form of a system which is responsible for the occurrence of various mental processes. Brain activities provide important clues as to how our mind functions. But the consciousness of our own experiences and mental processes are much more than the neural or brain activities. Even when we are asleep some mental activities go on. We dream and receive some information such as a knock on the door while we are asleep [3].

Psychologists also study ‘experiences’ of people. Experiences are subjective in nature. We cannot directly observe or know someone else’s experience. Only the experiencing person can be aware or be conscious of her or his experiences. Thus, experiences are embedded in our awareness or consciousness. Experiences are influenced by internal and the external conditions of the experiencer. If you are travelling in a crowded bus during a hot summer day, you may not experience the usual discomfort if you are going for a picnic with some close friends. Thus, the nature of experience can only be understood by analysing a complex set of internal and external conditions [3].

'Behaviours' are responses or reactions we make or activities we engage in. When something is hurled at you, your eyes blink in a simple reflex action. Some behaviours are overt. They can be outwardly seen or sensed by an observer. Some are internal or covert. When you are in a difficult situation while playing a game of chess you almost feel your hand muscles twitching, trying to experiment with a move. All behaviours, covert or overt, are associated with or triggered by some stimulus in the environment or changes that happen internally. You may see a tiger and run or think that there is a tiger and decide to flee. Some psychologists study behaviour as an association between stimulus (S) and response (R). Both stimulus and response can be internal or external [3].

What is psychiatry

Psychiatry is a branch of medicine that focuses on the diagnosis, treatment and prevention of mental and emotional disorders. Psychiatry offers medical students a unique experience because psychiatric diagnosis is established by clinical interview but not based on a laboratory test or an X-ray. Medical students may need time to adjust to this specialty because it involves treatment modality such as psychotherapy or electroconvulsive therapy which are not found in other medical or surgical disciplines.

The medical specialty concerned with the study, diagnosis, treatment, and prevention of mental, behavioral, and personality disorders. As a medical specialty, psychiatry is based on the premise that biological causes are at the root of mental and emotional problems, although some psychiatrists do not adhere exclusively to the biological model and additionally treat problems as social and behavioral ills. Training for psychiatry includes the study of psychopathology, biochemistry, genetics, psychopharmacology, neurology, neuropathology, psychology, psychoanalysis, social science, and community mental health, as well as the many theories and approaches advanced in the field itself [4].

Definition of a psychiatric disorder

Any condition characterized by cognitive and emotional disturbances, abnormal behaviors, impaired functioning, or any combination of these. Such disorders cannot be accounted for solely by environmental circumstances and may involve physiological, genetic, chemical, social, and other factors.

The simplest way to conceptualize a psychiatric disorder is a disturbance of Cognition (i.e. Thought), Conation (i.e. Action), or Affect (i.e. Feeling), or any disequilibrium between the three domains. However, this simple definition is not very useful in routine clinical practice.

Another way to define a psychiatric disorder or mental disorder is as a clinically significant psychological or behavioural syndrome that causes significant (subjective) distress, (objective) disability, or loss of freedom; and which is not merely a socially deviant behaviour or an expected response to a stressful life event (e.g. loss of a loved one). Conflicts between the society and the individual are not considered psychiatric disorders [5].

Classification in psychiatry

Like any growing branch of Medicine, Psychiatry has seen rapid changes in classification to keep up with a conglomeration of growing research data dealing with epidemiology, symptomatology, prognostic factors, treatment methods and new theories for the causation of psychiatric disorders.

At present, there are two major classifications in Psychiatry, namely ICD-10/11 (1992 and 2019) and DSM-5 (2013).

The ICD is the foundation for identifying health trends and statistics worldwide, and contains around 55000 unique codes for injuries, diseases and causes of death. It provides a common language that allows health professionals to share health information across the globe.

ICD-10 is the major global classification system for statistical and clinical documentation of disorders is the International Classification of Diseases and Related Health Problems (ICD-10) by the World Health Organization was published in 1992 and it covers ICD codes from F00 to F99 of Mental and Behavioural Disorders [6].

Now ICD-11 was presented at the World Health Assembly in May 2019 for adoption by Member States and will come into effect on 1 January 2022. This release is an advance preview that will allow countries to plan how to use the new version, prepare translations, and train health professionals all over the country. The new ICD-11 also reflects progress in medicine and advances in scientific understanding. For example, the codes relating to antimicrobial resistance are more closely in line with the Global [7].

The Diagnostic and Statistical Manual of Mental Health Disorders, 5th edition (DSM-5) is the standard classification of mental disorders published by the American Psychiatric Association and used by mental health professionals in the United States to determine diagnoses.

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders, prepared by the DSM-5 Task Force of the American Psychiatric Association and published in 2013. Changes from the DSM-IV-TR include use of a nonaxial approach to diagnosis with separate notations for psychosocial and contextual factors and disability; organization of diagnoses according to the period (i.e., childhood, adolescence, adulthood, later life) during which they most frequently first manifest; clustering of disorders within chapters according to internalizing factors (e.g., anxiety, depression) and externalizing factors (e.g., impulsive, disruptive conduct); replacement of the not otherwise specified label with clinician choice of other specified disorder or unspecified disorder; replacement of the Global Assessment of Functioning of Functioning Scale with the World Health Organization's Disability Assessment Schedule for further study; and consolidation of separate diagnostic areas into spectra (e.g., autism spectrum disorder) [8].

Behaviour

1. An organism's activities in response to external or internal stimuli, including objectively observable activities, introspectively observable activities (covert behavior) and non-conscious processes.
2. More restrictively, any action or function that can be objectively observed or measured in response to controlled stimuli. Historically, behaviorists contrasted objective behavior with mental activities, which were considered subjective and thus unsuitable for scientific study (see behaviorism) [9].

Behaviorism means an approach to psychology, formulated in 1913 by John B. Watson, based on the study of objective, observable facts rather than subjective, qualitative processes, such as feelings, motives, and consciousness. He was greatly influenced by the work of physiologists like Ivan Pavlov on classical conditioning. For Watson, mind is not observable and introspection is subjective because it cannot be verified by another observer. According to him, scientific psychology must focus on what is observable and verifiable. He defined psychology as a study of behaviour or responses (to stimuli) which can be measured and studied objectively. Behaviourism of Watson was further developed by many influential psychologists who are known as behaviourists. Most prominent among them was Skinner who applied behaviourism to a wide range of situations and popularised the approach. We will discuss Skinner's work later in this textbook [10].

Brain behaviour

Biopsychology is a branch of psychology that analyzes how the brain, neurotransmitters, and other aspects of our biology influence our behaviors, thoughts, and feelings. Biopsychologists often look at how biological processes interact with emotions, cognitions, and other mental processes.

The enlarged, anterior part of the central nervous system within the skull. The young adult human brain weighs about 1,450g and its outer layer (the cerebral cortex) contains over 10 billion nerve cells. The brain develops by differentiation of the embryonic neural tube along an anterior-posterior axis to form three main regions the forebrain, midbrain, and hindbrain that can be further subdivided on the basis of anatomical and functional criteria. The cortical tissue is concentrated in the forebrain and the midbrain and hindbrain structures are often considered together as the brainstem [11].

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