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# Abstract

Clinical psychology is a subfield of psychology, as its name indicates. Clinical psychologists, like all psychologists, are fascinated by behavior and psychological processes. Clinical psychologists do study on human behavior, strive to apply the findings, and conduct individual assessments. Clinical psychologists, like members of other professions, assist persons who require aid with psychological difficulties. Clinical psychology is defined by the American Psychological Association as "a clinical field that include providing diagnostic, evaluation, treatment planning, therapy, preventative, and consultation services to patients in emergency rooms, inpatient units, and hospital clinics." The Canadian Psychological Association defines it as a broad field of practice and research within psychology concerned with the assessment, prevention, amelioration, and rehabilitation of psychological distress, disability, dysfunctional behavior, and health-risk behavior, as well as the enhancement of psychological and physical well-being. As you can see, the term emphasizes the integration of research and practice, the application of this integrated knowledge across varied human groups, and the goal of reducing human suffering and increasing health.

Table of Contents

[Abstract 2](#_Toc92190423)

[Introduction 4](#_Toc92190424)

[Role of a Clinical Psychologist in the Workplace 5](#_Toc92190425)

[Assessment 5](#_Toc92190426)

[Provision of Treatment 5](#_Toc92190427)

[Research 5](#_Toc92190428)

[Provision of Teaching 6](#_Toc92190429)

[Consultation 6](#_Toc92190430)

[Administration 6](#_Toc92190431)

[Challenges Faced in the Workplace 7](#_Toc92190432)

[History of DSM 8](#_Toc92190433)

[Cultural Sensitivity and Cultural Incompetence 10](#_Toc92190434)

[Psychotherapy 11](#_Toc92190435)

[Existential Psychotherapies 12](#_Toc92190436)

[Health Psychology 13](#_Toc92190437)

[Stress and the Nervous System 14](#_Toc92190438)

[Stress and the Immune System 16](#_Toc92190439)

[Clinical Neuropsychology 17](#_Toc92190440)

[History of Neuropsychology 18](#_Toc92190441)

[Psychological Disorders 19](#_Toc92190442)

[Depression 19](#_Toc92190443)

[Schizophrenia 21](#_Toc92190444)

[Learning Disorders 22](#_Toc92190445)

[Non Verbal Learning Disorders 23](#_Toc92190446)

[Conclusion 24](#_Toc92190447)

[References 25](#_Toc92190448)

# Introduction

Clinical psychology is a well-established discipline of study in Western nations. However, the government and public in Malaysia have only recently began to recognize the expanding demand for clinical psychology. It is a relatively young profession in Malaysia, having emerged in practice and academic training in the mid-1980s (Ng, Teoh, & Haque, 2003). As a fledgling profession, it is through several difficulties and tribulations, particularly in the mental health area. Clinical psychology frequently faces challenges such as misunderstanding of its functions, a lack of training and human resources, and integration into mainstream mental health care (Ng,2007a). According to Parameshvara Deva (2004), clinical psychologists and other mental health specialists are in short supply in Malaysia. According to a World Health Organization (WHO) report on mental health in Southeast Asia, Malaysia has a ratio of just 0.05 psychologists per 100,000 people, compared to Indonesia (0.3), the Philippines (0.9), Singapore (1.0), and Thailand (0.2). (Maramis, Nguyen, & Minas, 2011). This demonstrates how Malaysia lags behind its neighbor in terms of clinical psychologists' access to the general public. Historically, psychiatrists have been in charge of Malaysia's mental health system. Since the late 1990s, the counseling profession has been transformed into a supplementary service for the treatment of mental health disorders. Haque (2005) asserts unequivocally that mental health care in Malaysia should not be restricted to psychiatry but should encompass a multidisciplinary approach that includes clinical psychologists. Clinical psychology services are required to fill the void left by counsellors and psychiatrists. Clinical psychology services encompass psychological exams, diagnoses, and therapies not just for psychiatric patients, but also for patients from other medical and health departments. Rahmatullah Khan (2008) discusses clinical psychologists' responsibilities and potentials outside of the psychiatric environment in Malaysia. Khan mentions several positions for clinical psychologists, including those in specialized health-care areas such as

paediatrics, oncology, and surgery. Clinical psychologists also play a vital role in the evaluation and change of behavior in children and adults with and without special needs. Other demands for clinical psychologists, as suggested by Ng et al. (2003), include advice for public health campaigns, research, academic program assessment and development, and policymaking. Given their diverse functions and rising demand in the country, there is also an urgent need to address the clinical psychology profession's practical concerns and challenges. Clinical psychologists, in the author's perspective, are increasingly sought for for a variety of activities, including community service presentations, transdisciplinary research initiatives, employee support programs, and consulting for different government and non-government entities.

# Role of a Clinical Psychologist in the Workplace

Consider some of the tasks or jobs that clinical psychologists pursue in further depth, the variety of settings in which they work, the range of clients and issues on which they spend their attention, and the professional benefits. Around 95% of clinical psychologists operate in some combination of the following six activities: evaluation, treatment, research, teaching (including supervision), consulting, and administration.

## Assessment

Clinical psychologists acquire information about patients through a number of methods. This information may be used to diagnose problematic behavior, to direct a client toward an optimal vocational choice, to aid in the selection of job candidates, to describe a client's personality characteristics, to guide legal decisions regarding the commitment of individuals to institutions, to provide a more complete picture of a client's problem, to screen potential participants in psychological research projects, and to establish p

## Provision of Treatment

Clinical psychologists provide therapies aimed at assisting individuals in better comprehending and resolving uncomfortable psychological disorders. These therapies are referred to as psychotherapy, behavior modification, psychological counseling, or a variety of other titles, depending on the clinician's theoretical perspective.

## Research

Clinical psychologists are by training and tradition research-oriented. For the majority of its first half-century, the area was dominated by study rather than application. Although that balance has shifted, research remains a critical component of clinical psychology. Among their research activities are the development and standardization of clinical tools for diagnostic assessment tests, as well as the examination of their reliability and validity, the adaptation and testing of the efficacy of both psychological and biological

interventions to promote health and overcome disorders, studies elucidating the cultural and cross-cultural dimensions of psychological abnormalities, and determining the impact of both positive and negative human behavior.

## Provision of Teaching

Many clinical psychologists devote a significant percentage of their time to educational initiatives. Academic clinicians generally teach undergraduate and graduate courses in topics such as personality, abnormal psychology, introductory clinical psychology, psychotherapy, behavior modification, interviewing, psychological testing, research design, and clinical assessment. Clinical psychologists also teach extensively in the context of in-service (on-the-job) training for psychological, medical, or other interns, social workers, nurses, institutional aides, ministers, police officers, teachers, and administrators, and a variety of other groups whose vocational skills could benefit from increased psychological sophistication.

## Consultation

Clinical psychologists frequently consult with organizations on a number of issues. These activities, together referred to as consultation, incorporate elements of research, evaluation, therapy, and education. The organizations that profit from the experience of consultants range in size and breadth from small medical or legal firms to large government agencies and international businesses.

## Administration

Numerous clinical psychologists find themselves managing or leading businesses' everyday operations. Clinical psychologists may hold managerial positions such as head of a college or university psychology department or director of a graduate training program in clinical psychology. Numerous more professions include director of a student counseling center. Administrative responsibilities grow increasingly prevalent as physicians advance in their professions.

# Challenges Faced in the Workplace

As demonstrated by history, the majority of clinical psychologists work at universities throughout Malaysia, while some work in private practice and hospital settings. With the growing number of clinical psychologists, concerns of professional regulation and clinical education must be addressed to ensure the profession's future development. Additionally, there are concerns about the application of Western concepts in clinical psychology, such as cognitive-behavioral therapy and psychodynamic psychology, in the Malaysian context, as well as the overlap in job definitions between psychiatrists, counsellors, and counseling psychologists, which can cause confusion among other professionals and the general public. The following section discusses the challenges confronting clinical psychology as a rising profession in Malaysia.

**(a) The importance of cultural validity in therapeutic practice.**

Much of Malaysia's clinical psychology education is based on Western psychology. Jusmawati et al. (2005) address this subject in relation to the use of English in psychological exams and evaluations. Many of these exams, particularly verbal cognition and reading assessments, are inapplicable to those who do not comprehend English. Additionally, certain intervention strategies derived from Western psychology may not always be applicable within Malaysia's diverse cultures. In Malaysia, applied indigenous psychology is still in its infancy due to a lack of research.

**(b) Regulation of the Profession.**

A professional organization was required to regulate the profession while also consulting with the government on human resource and clinical training issues. Given that MSCP was just registered in July 2010, this form of partnership is still in its infancy in Malaysia. However, the founding of MSCP is viewed as a significant step forward in terms of regulating and developing the profession. Once clinical psychologists are controlled by statute, their services, such as evaluations, diagnosis, and therapy, will be more readily accepted as valid inside the health-care system.

**(c) Clinical Psychologist's prescribing authority.**

Currently, only medical physicians are permitted to approve or validate Welfare Card application forms, as clinical psychologists lack legally regulated professional and licensing status. Thus, whereas clinical psychologists conduct evaluations to substantiate diagnoses, medical practitioners certify applications based on psychological assessment findings, as well as other pertinent data. By recognizing licensed clinical psychologists as clinical specialists capable of recommending diagnoses, the process of obtaining the Welfare Card may be made more efficient and legitimate. In terms of public safety and professional regulation, the danger of lawsuit would grow if clinical psychology were recognized as a clinical profession. As a result, professional indemnity insurance is recommended to safeguard the practitioner.

# History of DSM

Since the early 1900s, many categorization systems for mental diseases have been used, but the classification of mental disorders became more codified in 1952 with the publication of the first Diagnostic and Statistical Manual of Mental Disorders by the American Psychiatric Association. Known as DSM-I, it was in use until 1968, when it was superseded by DSM-II to bring the DSM closer to the World Health Organization's ICD.

While DSM-I and DSM-II established a common vocabulary for describing and diagnosing aberrant conduct, they did not provide clear guidelines for mental health practitioners' diagnostic determinations. As a result, when DSM-III was published in 1980, it incorporated a set of diagnostic criteria for each diagnostic category. These criteria—which focused on particular symptoms and durations of symptoms rather than imputed causes—were expanded in quantity and specificity in the 1987 publication of DSMIII-R. Clients were to be diagnosed with a certain condition only if they satisfied a predetermined number of criteria from the comprehensive list connected with that disorder.

Additionally, DSM-III and DSM-III-R added multiaxial diagnoses, which enabled clinicians to characterize clients along many dimensions, or axes, so offering a more full view of clients' issues and the variables causing them. Axis I was reserved for diseases having a distinct beginning and course, such as when an otherwise healthy individual gets devastating panic episodes over a relatively short period of time. Axis II disorders included those that have been present for an extended period of time and are difficult to change, such as numerous persistent developmental issues (e.g., autism spectrum disorders) and personality disorders. Axes III–V enabled diagnosticians to identify physical conditions that could impair an individual's mental state and functioning (e.g., cancer), the severity of recent psychosocial stressors (e.g., divorce or job loss), and the individual's psychological, social, and occupational functioning over the previous year. While DSM-III and DSM-IIIR increased the reliability of the majority of diagnoses, they nonetheless had limitations. Thus, barely a year after the publication of DSM-III-R, the American Psychiatric Association organized a task committee to start work on DSM-IV in 1988.

New editions of the DSM are usually significant undertakings; they take years and need the coordination of thousands of people's work. To create DSM-IV, planners divided numerous specialists into 13 work groups, each of which followed a three-step strategy for examining a particular collection of diseases and the most effective methods of diagnosis (Widiger, Frances, Pincus, Davis, & First, 1991). Each group conducted a systematic evaluation of the clinical and empirical literature relevant to a particular condition and utilized their results to provide first recommendations for revisions to the disorder's diagnostic criteria. When literature reviews failed to address concerns, the task groups turned to existing patient data sets for analysis.

Additionally, physicians were asked to use diagnostic criteria in clinical settings with real clients. These targeted field studies, conducted at over 70 sites worldwide, explored how alternative wordings or thresholds (cutoffs) influenced reliability, prevalence rates, or concordance with parallel ICD-10 diagnoses (Nathan & Langenbucher, 1999). The DSM-IV was published in 1994 with improved diagnostic criteria. It was followed in 2000 by a text revision (DSM-IV-TR) that updated information regarding the prevalence, onset, course, and other characteristics of many illnesses (APA, 2000).

The creators of DSM-IV and DSM-IV-TR attempted to build on the reliability gains made with the addition of observable criteria in DSM-III-R. They wanted to create classifications that were highly predictive of certain outcomes (predictive validity) or of specific underlying neurological or genetic constellations (construct validity).

However, despite its strengthened scientific grounding, the DSM-IV diagnostic system remained controversial. For one instance, whereas many Axis I diseases demonstrated moderate to high dependability, those on the schizophrenia spectrum and several children and adolescent disorders did not. Additionally, Axis II illnesses, particularly personality disorders, maintained an unacceptably poor inter- and intra-rater dependability (Zanarini et al., 2000).

Critics questioned, in particular, whether the either-or categorizations required by DSM-IV criteria were the most effective method to comprehend psychopathology. Individuals were considered to "have" a disorder if they satisfied a particular number of criteria; if they did not, they were said to "not have" it. Indeed, psychological problems can manifest themselves in varied degrees. For instance, there is no clear delineation between depression and non-depression. Widiger & Trull (2007) argued that diagnoses should be seen as extremes along one or more underlying aspects.

Clinicians representing a range of theoretical perspectives have also criticized the DSM-IV for failing to provide sufficient information regarding disorders. Clinical psychologists were worried that the DSM-IV categorization neglected the environment in which symptoms arise, leaving no foundation for interpreting the meaning or function of a specific pattern of disordered behavior in various social contexts (Follette, 1996; Wulfert, Greenway, & Dougher, 1996). Psychodynamic physicians questioned the DSM-IV for its heavy emphasis on visible symptoms. They expressed worry that physicians may believe they understand clients after a diagnostic label is applied, but may be unaware of the client's subjective experience of having the condition (Packard, 2007). Neurologically oriented physicians raised additional objections, noting that focusing visible symptoms ignores recent discoveries regarding the brain circuitry underlying certain illnesses (Bracha, 2006).

Additionally, critics pointed out that the DSM ignores specific illnesses. Each edition of the DSM has been based on and applied to people in North America. None featured clusters of symptoms observed in other cultures (Hall, 2005). Additionally, the DSM omitted several forms of relationship illnesses, including couples conflict, parental discipline difficulties, child maltreatment, sibling conflict, domestic violence, and incest. These disorders cause significant psychological distress (First, 2006).

# Cultural Sensitivity and Cultural Incompetence

There are a variety of plausible reasons for clinical interviewers to over- or under-diagnose psychiatric problems in members of various ethnic groups, but one of them is undoubtedly a lack of understanding. If a physician is not aware of cultural differences, he or she may misread an African American client's hesitation to disclose symptoms as evidence of paranoid ideation, rather than caution or suspicion towards the mental health system. A physician may incorrectly believe that an Asian client's hesitancy to reveal is indicative of resistance or a lack of awareness, rather than a cultural ban against quick self-disclosure to strangers.

It is critical for interviewers and therapists-in-training to be aware of cultural differences in distress manifestation. Misunderstanding the meaning of spoken and body language appears to be a particularly pernicious issue. For example, Asian consumers are more prone than European Americans to convey psychological issues through physical symptoms such as nausea, dim eyesight, and dizziness (Hsu & Folstein, 1997). These culture-specific symptoms may not be due to Asian individuals having much greater incidence of somatoform illness, but rather to their cultural idea that it is more appropriate to express emotional discomfort through physical means. In brief, cultural disparities in the presentation of symptoms can easily lead doctors to misread or misdiagnose (Li, Jenkins, and Grewal, 2012; Ross, Schroeder, and Ness, 2013).

Interviews can also be influenced by cultural ideals such as independence vs interdependence. Independence may not be as highly prized in Hispanic and Asian cultures as it is in Western European societies. Instead, interdependence and familial commitments may be given a higher priority. Thus, interviewers who pursue questions that appear to indicate a preference for emotional or psychological independence may unintentionally alienate respondents who perceive the interviewer to be critical of one of their main values.

What should interviewers do when confronted with potential cultural misunderstandings? While it is unrealistic for interviewers to be familiar with all possible cultural variations in interview behavior (and discussing these is beyond the scope of this text), clinicians can have a reasonably thorough understanding of how ethnic and cultural misunderstandings can distort interview conclusions. Interviewers may strengthen their cultural competency and minimize prejudice by being familiar with the more prevalent cultural differences in

interviewing practices as well as those associated with the unique ethnic origins of the clients they interview. When presented with situations that may include cultural misunderstanding, interviewers should engage the client in open discussion of cultural problems, demonstrating a genuine want to understand rather than just categorise the client. Additionally, they should acknowledge their own limits and seek advice and support from colleagues who have greater experience working with specific types of clients.

The American Psychological Association's (2002) Guidelines on Multicultural Education, Training, Research, Practice, and Organizational Change for Psychologists, as well as additional readings (e.g., Sue & Sue, 2008), are intended to guide psychologists' training in and practice of cultural sensitivity, as well as to foster a fundamental understanding of the challenges posed by cultural diversity.

The body of knowledge about multicultural difficulties in clinical assessment is increasing at a rapid pace. The professional literature currently includes research on such issues as the validity of the borderline personality disorder subscale of the Structured Clinical Interview for DSM-IV Axis II Personality disorders for Cantonese-speaking Chinese. (Wong & Chow, 2011); what criteria should be used to assess the appropriateness of trainees' cross-cultural training? (Lanik & MitchellGibbons, 2011); and how can psychological services for refugee populations be improved? (2011) (Kaczorowski et al.). Again, practicing clinicians are not expected to have encyclopedic knowledge of every cultural context; rather, they are required to recognize whether their understanding of multicultural assessment is sufficient to establish competency and, if not, what actions to take to improve it.

# Psychotherapy

Until recently, few people connected brief psychodynamic therapies with Freud, despite the fact that some of his early treatments were brief (Levison & Strupp, 1999). Short-term dynamic psychotherapy techniques place a premium on achieving pragmatic goals in a limited number of sessions, often 20 or less. Therapists who employ this technique place a greater emphasis on assisting clients in coping with a present crisis or problem than on assisting them in working through early connections or reconstructing the personality.

Short-term dynamic therapists emphasize the need of swiftly establishing a therapeutic relationship and then assisting clients in adopting coping skills within certain areas. They may concentrate on anxiety management or coping with a difficult work relationship. Due to the rapid tempo of therapy, therapists are more active than they are in other kinds of psychodynamic therapy. They may employ classic psychoanalytic procedures, but they may also offer homework, send clients to self-help groups, or employ other strategies not normally associated with psychodynamic therapy. There are several models for short-term dynamic therapy, several of which contain treatment manuals for specific illnesses (Binder & Betan, 2013; Levison & Strupp, 1999).

## Existential Psychotherapies

Existential therapists guide clients in a thorough examination of what it means to be alive.

These perspectives stem from existential philosophy, which emphasizes the enormous freedom that human beings have to make meaning of their existence. While such independence can be exhilarating, it can also be scary, since it includes probing questions about the meaning and purpose of one's existence and taking personal responsibility for the answer. One must confront the possible meaninglessness and finality of one's existence during this process. Many individuals embrace interpretations assigned to them by others (parents, religious leaders, etc.) in order to deal with these problems. This external frame of reference can be soothing, but it may not last—many individuals eventually come face to face with their independence.

Existential perspectives have a long history, but they gained prominence among European philosophers in the aftermath of World Wars I and II. As one might imagine, humanistic therapists who subscribe to European existential philosophies are less likely to suggest that all clients inherently seek good outcomes (Fischer, 1989). Rather than that, they consider humans as capable of exceptional goodness, incredible brutality, and all in between.

As with person-centered psychotherapy, existential humanistic therapists seek to comprehend the client's inner world, frames of reference, and experience flow. They make no attempt at diagnosis or objective description. In existential treatments, the idea of personality is of little utility. Rather than that, existential humanistic therapists emphasize autonomy, experience reflection, and accountability (Schneider, 2003). Client and therapist collaborate on the client's very personal quest for meaning.

As with personcentered therapy, therapists utilize connection building and empathetic responding, but they may also participate in analysis or interpretation, or they may apply techniques from other approaches that focus on the client's present-moment experiences and relationships. Thus, therapists may make observations about a client's body postures, tone of voice, language use, and preconceptions, among other things (Schneider & Krug, 2010). In brief, the technique is eclectic or integrative, and the emphasis is on the fight for meaning in life, which is worked out with each client individually. Therapy may be quick, lasting only a few sessions, or it may last many months or even several years (Bugental, 1995; Joseph & Murphy, 2013; Schneider 2008).

# Health Psychology

Health psychology is a field of research that began in the 1970s and is devoted to the study of "psychological impacts on how individuals stay healthy, why they get ill, and how they respond to illness" (Taylor, 1995, p. 3). This discipline has grown so rapidly over the last four decades that it now has its own division within the American Psychological Association (Division 38) and its own journal, Health Psychology.

Additionally, research on health psychology is frequently published in the Journal of Behavioral Medicine, Psychosomatic Medicine, and the Annals of Behavioral Medicine.

The Society of Behavioral Medicine and the American Psychosomatic Society are two related professional organizations. Numerous clinical psychology training programs now offer a "track" dedicated to health psychology education, and other institutions have made health psychology their primary focus.

Health psychology is inextricably linked to the broader field of behavioral medicine, which entails the integration of knowledge from the social/behavioral sciences (e.g., psychology, sociology, and anthropology), the biological sciences, and medicine into an interdisciplinary science devoted to the comprehensive understanding and treatment of all types of medical disorders. Health psychology and behavioral medicine are based on the biopsychosocial paradigm, which posits that physical sickness is usually caused by biological, psychological, and social abnormalities. They investigate the relationship between psychological states and behavioral processes and sickness and health.

Sir William Osler, a physician, is often regarded as the founder of contemporary behavioral medicine since he stressed on the importance of psychological and emotional components in understanding and treating many disorders. Osler delivered a speech in 1910 in which he argued that many symptoms of cardiac disease are "caused by wrath, stress, or unexpected shock." These concepts are very comparable to present theories concerning the relationship between important psychological elements and cardiac disease.

Osler's views became more important in the twentieth century due to considerable changes in the nature of sickness in Western societies. Until just a century ago, the majority of Americans perished of acute infectious illnesses including pneumonia, typhoid fever, and TB. However, advancements in education, cleanliness, medications, and immunization have almost eradicated these diseases, leaving chronic illnesses—for example, heart disease and cancer—as the primary dangers to life (Currie, 2013; McGrady & Moss, 2013). Not only are these diseases chronic in nature, but they also take years to develop. Additionally, key risk factors for chronic illness development include lifelong health-harming habits such as smoking, poor eating, sedentary lifestyles, and alcohol misuse. Today, approximately half of all deaths in the United States are a result of such reckless actions (Murray, et al., 2013).

There is now evidence that behavioral and psychological variables have a role in the onset or severity of heart disease, ulcers, asthma, stomach diseases, cancer, rheumatoid arthritis, migraines, and hypertension. To revert this trend, increasing knowledge of the issue, adjustments in public policy, and, most crucially, changes in individual health practices will be required.

Physicians and other health care professionals are becoming increasingly interested in health psychologists' contributions. Indeed, mental discomfort, which can occur as a result of coping with a disease, accounts for up to 60% of all medical office visits (Pallak, Cummings, Dorken, & Henke, 1995). Because physicians are rarely trained to deal with the emotions associated with sickness, the responsibility for preventing and treating emotional discomfort is increasingly falling to those in the area of health psychology. In summary, health psychology has increased in popularity as data demonstrates that treating patients "from the head up or the neck down" no longer makes sense (Dornelas, 2001, p. 1261).

Numerous books explore the history and current state of health psychology and behavioral medicine in further depth (e.g., Baum, Revenson, and Singer, 2011; Sanderson, 2012; Sarafino, 2010; Straub, 2011; Taylor, 2011).

# Stress and the Nervous System

Stress triggers a series of physiological responses in the central and autonomic nervous systems. The autonomic nervous system is critical since it is the mechanism that generally balances the body's energy and associated demands. Under ideal conditions, the two branches of the autonomic nervous system, the sympathetic and parasympathetic nervous systems, work together to assist maintain the body's homeostasis.

Numerous researchers have examined autonomic nervous system response patterns in an attempt to better understand the biological impacts of stresses. For example, Hans Selye (1956) used the term "global adaptation syndrome" to refer to the activation of the sympathetic nervous system during times of stress. The GAS begins with an alarm reaction, which is sometimes referred to as the fight-or-flight response, since it assists us in combating or fleeing from stresses. The alarm response causes the production of a variety of "stress hormones" into the circulation, including adrenal corticosteroids, catecholamines (such as adrenaline), and endogenous opiates (the body's natural analgesics). These hormones increase heart rate, blood pressure, and respiration, pupillary dilation, muscular tension, glucose and lipid reserves release, and attentional focus on the stressor. If the stressor remains or if additional ones appear rapidly, alarm is followed by the stage of resistance, during which less dramatic but more persistent biochemical efforts to cope with stress might have negative implications.

For instance, continuous production of stress hormones can result in chronically elevated blood pressure, muscular tissue damage, and impairment of the body's capacity to repair.

If stresses persist for an extended period of time, weariness sets in when various organ systems begin to malfunction or fail. Physical symptoms associated with tiredness range from weariness, weight loss, and indigestion to colds, heart disease, and other more serious disorders.

Selye's model made a significant addition to the field of stress and disease research, providing a framework for considering how stressors could influence physiological changes and, ultimately, disease processes.

However, the paradigm overlooks the critical role of cognitive, psychological, and perceptual aspects in influencing how and which experiences are perceived as stressful. In other words, the model ignores individual variability in stress experience. As a result, more complete models describing the effect of stressors on disease development have been established.

Barbara Dohrenwend (1978), for example, proposed a four-stage model of how stresses and stress responses contribute to medical sickness and/or psychiatric disorder. The first stage involves stressful life experiences, followed by a series of physical and psychological stress reactions in the second stage. The third stage involves the mediation of these stress reactions by environmental and psychological variables that either augment or diminish their severity. Sufficient financial resources, free time to deal with stressors, a diverse repertoire of effective coping skills, the assistance and support of friends and family, a strong sense of control over stressors, an optimistic disposition, and a view of stressors as challenges are all likely to reduce stress reactions. Factors that aggravate stress include poverty, a lack of social support, insufficient coping skills, pessimism, a sense of powerlessness, and seeing stressors as frightening dangers. At stage four, the interaction of specific stressors, specific people, and specific circumstances results in physical and/or psychological problems that can range from mild and transient (a little anxiety, a headache, or a few sleepless nights) to severe and persistent (e.g., an anxiety or mood disorder, chronic insomnia, or physical illness).

Nowadays, the majority of health psychologists feel that stress is caused by interactions between individuals and their circumstances, rather than by external events. They understand, for example, that physical and psychological stress reactions may occur in the absence of visible external stressors, but rather as a result of events and situations perceived as dangerous or demanding by the individual.

# Stress and the Immune System

Another significant impact of chronic stress is the weakening of the immune system, the body's first line of defense against pathogens (Dougall, Wroble-Biglan, Swanson, & Baum, 2013). For instance, prolonged stresses (e.g., caring for a chronically ill family) have been found to impair immune system function, and even acute stressors, such as final exam periods, have been linked to a decrease in the activity of immune system cells that fight viruses and cancers (Kiecolt-Glaser & Glaser, 1992). In a series of fascinating investigations on the association between stress and sickness, researchers exposed participants to cold viruses or a placebo and then assessed their level of stress over a certain time period (Cohen et al., 2012; Cohen, Tyrrell, & Smith, 1991). The results indicated that the commencement of colds and other illnesses was related to the level of stress experienced by the individuals, establishing a physiological relationship between stress and the onset of a viral infection. These and several other experts now believe that immunosuppression—which is frequently caused by inflammation—underpins the link between stresses and an increased risk of sickness, including some types of cancer (e.g., Cohen et al., 2012; Cohen & Rabin, 1998).

Stress-related impacts on immune function can also be modulated by stress-reduction methods. A study of this phenomena among married couples looked at immune function and the body's ability to repair small wounds (Kiecolt-Glaser et al., 2005). On one day, couples addressed a point of contention in their marriage; on another, they were asked to provide social support to one another and given guidance on how to do so effectively. Both days, measurements of wound healing capability and other immune system activities were obtained. Wound healing ability was greatly decreased following a discussion of marital dispute and dramatically increased following couples providing social support to one another, and this difference was attributed to alterations in immune function.

This field of study, which is often referred to as psychoneuroimmunology, is highly complicated.For instance, while stressors—particularly continuous stressors—may impair immune function, brief bursts of stress might actually increase certain components of the immune system (Segerstrom, 2004). These brief periods of stress appear to boost the body's ability to respond to foreign material invasions (Atanackovic et al., 2006).

# Clinical Neuropsychology

Neuropsychology is the study of the brain systems that enable human behavior and psychological functioning (Heilman & Valenstein, 2011). Neuropsychologists are interested in a broad range of human abilities, including aspects of cognitive functioning (e.g., language, memory, attention, mathematical, and visuospatial skills), motor functioning (e.g., learned skilled movements, gross and fine motor skills), emotional functioning (e.g., motivation, understanding and expressing emotion, anxiety, depression, and euphoria), social functioning (e.g., prejudice, social judgment, and interpreting social information), and phrenological functioning (e.g., extraversion, neuroticism).

Neuropsychologists investigate how the brain regulates such processes and how this regulation breaks down in the presence of brain dysfunction (e.g., physical trauma, stroke, infection, neurodegeneration) or psychological disorders (e.g., posttraumatic stress disorder, clinical depression, schizophrenia).

Clinical neuropsychologists work with people' psychological and behavioral evaluations. They can determine whether or whether an individual exhibits a pattern of deficits typical of brain injury, and if so, which brain areas are affected. Clinical neuropsychologists can also assist in quantifying the degree of psychological deficiencies by comparing an individual's performance to the average, or norms, established from earlier testing of a large number of people with comparable educational and social backgrounds. Neuropsychological testing may potentially provide insight into the origin of brain injury. Clinical neuropsychologists can assist in determining how a person's brain damage-related difficulties are likely to impair that person's capacity to function socially, vocationally, and in other facets of everyday life.

Finally, professional neuropsychologists can assist in developing a rehabilitation and recovery plan following brain trauma. Clinical neuropsychologists must employ a variety of different types of knowledge and abilities in their practice. To begin, they employ the assessment skills specified in Chapter 3, "Basic Features of Clinical Assessment," Chapter 4, "Interviewing and Observation in Clinical Psychology," and Chapter 5, "Testing in Clinical Psychology," as do all clinical psychologists. Thus, neuropsychological evaluations take the whole individual into account, including social and familial history, personality dynamics, and emotional responses to probable brain malfunction. Second, clinical neuropsychologists must be competent to employ specific neuropsychological evaluation techniques. Thirdly, clinical neuropsychologists must have a working knowledge of the neurosciences, which includes neuroanatomy (the study of nervous system structures and their relationships), neurophysiology (the study of the nervous system and its components' functioning, including the chemistry of nerve tissue and the relationship between the nervous system and endocrine functions), and neuropharmacology (the study of how drugs affect nervous system functioning). Fourth, clinical neuropsychologists must be knowledgeable in a broad variety of human cognitive capacities, including language and perception, as well as the development and evolution

of such abilities across time (e.g., behavioral genetics and life-span psychology). Fifth, neuropsychologists must be able to differentiate behavioral and psychological issues associated with brain dysfunction from those associated with psychopathology in structurally intact brains. Finally, they should be able to develop successful rehabilitation programs based on a firm grasp of clinical psychology.

## History of Neuropsychology

While neuropsychology developed as a distinct field of study in the mid-twentieth century, its origins may be traced back to two lines of nineteenth-century thought regarding the link between various behaviors and specific brain regions (Tyler & Malessa, 2000). Franz Gall and Johann Spurzheim, anatomists, pushed for the notion of functional localisation. According to this then-controversial notion, various brain regions govern distinct psychological activities. Today, this approach is widely recognized, and Gall and Spurzheim might be more renowned for introducing it had they not structured their thoughts inside a wider theory known as phrenology. Phrenologists reasoned that if certain activities were concentrated in certain brain locations and a person used them more frequently than others, the corresponding brain region would grow larger and elevate a bump on the skull above it. As discussed in Chapter 1, "What Is Clinical Psychology?," phrenologists argued that the bumps and indentations on the surface of the skull could be used to measure individual variations in personality and intellect. Phrenology was extremely popular with the general population but was scorned by the majority of scientists due to a dearth of data to support it. Once phrenology was discredited, the notion of functional localization was tarnished by association, and hence viewed as wrong as well (ZolaMorgan, 1995).

A different view of the brain and behavior stated that no single region of the brain was more significant than another in regulating psychological function. Pierre Flourens, a well regarded scientist, advocated for this position using meticulous tests. For instance, he surgically removed sections of the brains of animals and then analyzed the behavioral results. He concluded that, while cortical activity was localized, the areas inside the cerebral hemispheres functioned as a unified unit rather than as a collection of specialized pieces. This notion was further bolstered by Karl Lashley's work, which stressed the capacity of one section of the cortex to assume the functions of a devastated area, a capacity he dubbed equipotentiality.

Finally, behavioral neurology demonstrated conclusively that distinct parts of the brain, particularly the cerebral cortex, do indeed underpin distinct psychological activities. Due to the study of an eminent French surgeon, Paul Broca (1861, 1865), who revealed that expressive language (e.g., speech) is regulated by a specific area of the brain, the pendulum began to swing back toward a function localization viewpoint. Broca had the chance to determine by autopsy that a patient with severe speech difficulties but otherwise normal IQ had injury to a tiny piece of cortex in the left frontal lobe. Broca's illustrious name lent credibility to a localizationist theory of brain activity (Lorch, 2011).

By 1863, he had compiled a set of eight instances and made such a compelling argument for function localization that his position was unassailable. Additionally, the study of two Italian ophthalmologists, Antonio Quaglino and Giambattista Borelli, bolstered the case for function localisation. They published an article in 1867 detailing a man who had prosopagnosia, the inability to recognize familiar faces, following brain injury to the right hemisphere. These findings demonstrated that some psychological processes are highly dependent on specific brain locations.

# Psychological Disorders

Neuropsychologists do research on the brain functioning of individuals who have been diagnosed with depression, schizophrenia, learning impairments (sometimes referred to as learning disabilities), or other psychological illnesses. Neuropsychological research has aided in the understanding of psychological diseases such as depression and schizophrenia. Neuropsychological research has also increased our understanding of a variety of children difficulties, most notably learning disabilities.

## Depression

Since Guido Gainotti (1972) demonstrated in a methodical manner that localized brain injury might induce emotional consequences, neuropsychologists have been interested in depression. It is now generally understood that brain damage caused by stroke frequently results in depression (Robinson & Spalletta, 2010).

Individuals with right-brain injury, on the other hand, may exhibit an unusually happy, inappropriate, and careless response to their handicap and hospitalization. This "euphoric" or "neutral" response is frequently accompanied with anosognosia (unawareness of deficit). By contrast, those who have suffered left-brain injury are more likely to have a "catastrophic" response, which is marked by tears, despair, and other depressive symptoms. Subsequent research indicated that between one-third and two-thirds of individuals develop depression following injury to the left side of the brain (Starkstein & Robinson, 1988). Additionally, these investigations have demonstrated that the likelihood of developing depression increases with increasing closeness of the injury to the frontal lobe of the brain. The depression is more severe the closer the lesion is to the left hemisphere's frontal pole.

To some extent, these emotional responses are a direct result of the loss of particular areas of brain function, rather than just because people are sad about being disabled. One explanation for this is that depression intensity does not correspond with disability severity per se (e.g., Folstein, Maiberger, & McHugh, 1977). EEG, PET, and fMRI measurements of brain activity in the left vs right hemispheres verify the asymmetry findings (e.g., Herrington et al., 2005). In clinically depressive individuals, the left hemisphere is often less active than the right; similarly, when those who are not clinically

depressed experience sadness, the left hemisphere is less active than the right. These changes in brain activity are particularly pronounced in the frontal areas of the brain, suggesting their role in producing these emotional effects. For example, when depressed and healthy persons read words evaluated as more pleasant, both groups have increased activity in the left dorsolateral (top and outer half) frontal lobe compared to the right, although the difference is less pronounced in depressed patients (Herrington et al., 2010). These findings show that declines in left frontal brain function may be a component of the brain alterations associated with depression.

Additionally, tachistoscopic experiments have demonstrated that when visual stimuli are transmitted to both hemispheres, the left hemisphere often ranks visuals as more positive than the right hemisphere—despite the fact that both hemispheres have viewed identical images (Heller, 1990). These findings show that parts of the left hemisphere play a role in sustaining a cheerful outlook on life in the healthy brain. Negative mood states appear to occur as a result of a lesion or another disorder that causes these left-side regions to be underactive in comparison to those in the right hemisphere.

Other investigations have discovered a link between depression and a reduction in right posterior activity (Heller & Nitschke, 1997). Depressed individuals have some of the same cognitive abnormalities as people with parietal-temporal brain injury. They have trouble processing visuospatial information and exhibit a variety of attentional impairments comparable to those seen in individuals with right-brain injury. These effects may be a result of the brain's frontal and posterior regions interacting. Due to the fact that frontal areas frequently limit posterior region activity, considerably more activation in the right frontal region compared to the left may result in an excess of inhibition of the right posterior regions.

These neuropsychological results have implications for our knowledge of depression, as well as for its diagnosis and treatment following brain injury (Mukherjee, Levin, & Heller, 2006). For instance, it is critical to recognize the likelihood that a patient with brain damage may be sad in addition to having difficulties with language understanding or expression. As a result, neuropsychologists frequently inquire of persons and family members whether the individual is sleeping and eating properly, as well as healing normally. If not, there may be an underlying depression that requires treatment with antidepressant medication and/or psychotherapy. Certain individuals who are depressed but do not appear to have any visible brain damage also have impairments on neuropsychological testing measures. These deficiencies are often eliminated with effective treatment of depression.

## Schizophrenia

Neuropsychologists have made significant contributions to the study of brain function in patients with schizophrenia. Early investigations, the majority of which employed tachistoscopic techniques, showed that schizophrenia may be characterized by an overactivation of the left hemisphere of the brain (Gur, 1978). Current research continues to examine the functional distinctions between the left and right hemispheres, but the picture is becoming more convoluted (Ribolsi et al., 2009).

In schizophrenics, structural (Sapara et al., 2007) and functional (Harrison et al., 2006) abnormalities in the prefrontal cortex have been observed. Regional cerebral blood flow and glucose metabolism studies indicate that individuals with schizophrenia have an aberrant left prefrontal area that is not stimulated during performance on examinations such as the Wisconsin Card Sort Test. In comparison to controls, subcortical areas of the same hemisphere exhibit hyperactivity (Rubin et al., 1991). Functional magnetic resonance imaging studies indicate that the left prefrontal cortex does not engage properly during a language task, and that this brain region also appears to have poorer connections to other brain regions than typical (Bleich-Cohen et al., 2012). According to several researchers, the results of these neuropsychological and brain imaging investigations indicate to prefrontal area impairment, particularly in the left hemisphere, as a core hallmark of schizophrenia-related brain dysfunction (Kelly, 2011).

These findings corroborate various discoveries on schizophrenia symptoms. Numerous persons with schizophrenia have negative symptoms, which include a "flat" affect, a lack of initiative, a lack of energy, a lack of social involvement, and a loss of spontaneity. These identical deficits are observed in certain patients with prefrontal structural abnormalities. Patients with schizophrenia may also exhibit positive symptoms, such as nonlinear reasoning, delusions, hallucinations, intrusions into working memory, neologisms (new words), rhyming speech, and other unusual linguistic utterances. It's worth noting that same difficulties can also occur following injury to the left hemisphere's specialized areas.

Disruptions in right-hemisphere processing may also be implicated, since the right hemisphere has been associated with reduced emotional and social processes in schizophrenia (Mitchell & Crow, 2005). Other study has suggested that disconnections between frontal and temporal brain areas, and maybe other brain regions, may also contribute to the pathology observed in schizophrenia patients (Brambilla et al., 2005; Meyer-Lindenberg et al., 2001). Regrettably, a comprehensive and integrated neuropsychological explanation of schizophrenia continues to be missing.

## Learning Disorders

Given neuropsychologists' interest in cognitive capacities, it's unsurprising that a significant portion of their research, testing, and therapeutic efforts are directed toward learning problems. While the majority of their research focuses on the behavioral, environmental, and social aspects that contribute to these diseases, they have also uncovered some surprising molecular correlations. Numerous neuropsychological investigations have discovered, for example, that developmental dyslexia (impaired ability to read) is frequently associated with left hemisphere dysfunction (Shaywitz & Shaywitz, 2005). Brain imaging studies demonstrate that differences in children's reading ability throughout the normal and dyslexic ranges coincide with microstructural differences in left-hemisphere nerve cell circuits (Niogi & McCandliss, 2006). Indeed, children who acquire dyslexia exhibit aberrant activity in language areas of the left hemisphere even before they begin to read (Raschle, Zuk, & Gaab, 2012). Children with developmental dyslexia who have stronger right hemisphere frontal lobe activity on functional MRI appear to react well to specialized training and learning to enhance their reading skills (Hoeft et al., 2011). This indicates that overcoming developmental dyslexia requires the ability to read using non-traditional right hemisphere brain areas.

Postmortem tests of patients known to have dyslexia also reveal that their left hemispheres are structured differently from those who do not have dyslexia. For instance, in the left hemisphere, researchers discovered signs of displaced brain cells known as ectopias. Rather than returning to their natural habitats, These cells appear to have "gone missing" during the early stages of brain development, and some experts believe that ectopias can result in developmental delays and deficiencies in the left hemisphere's function.

Pediatric clinical neuropsychologists can frequently assist in delineating particular challenges with left-hemisphere functioning and developing remedial techniques. Indeed, children who exhibit attentional challenges (including attention deficit hyperactivity disorder), memory and language difficulties, and social and emotional difficulties (including sadness and anxiety) at school are frequently sent to a pediatric clinical neuropsychologist. Typically, the clinician does a comprehensive assessment and then meets with teachers and parents to determine the best course of action for the child.

## Non Verbal Learning Disorders

A distinct form of learning disease is characterized by deficiencies in visuospatial and visuomotor abilities, as well as other abilities that are hemispheric-dependent (Grodzinsky, Forbes, & Bernstein, 2011). Although this syndrome of nonverbal learning deficit (a.k.a. nonverbal impairment) was initially reported in the mid-1970s (Myklebust, 1975), neuropsychological research has only lately contributed to the delineation of this illness (Spreen, 2011). Children with nonverbal learning problems may have avoided specialists' observation for a long time due to their frequent talkativeness and high levels of verbal intelligence. As a result, they sound as though they should be more adept in nonverbal communication than they actually are. Children with nonverbal learning difficulties sometimes struggle to keep up with peers on nonverbal skills. They take a long time to acquire skills like as shoe tying, dressing, eating, and arranging their time and environment. Due to the nuanced nature of their issues, individuals are more likely to be diagnosed with an emotional or behavioral problem rather than a learning disorder. Unfortunately, if these youngsters are viewed as "bad," "uncooperative," or "a problem" over an extended period of time, they may exhibit these characteristics. Thus, it is critical to diagnose and treat nonverbal learning difficulties early on.

Nonverbal learning impairments may emerge as a result of early right-hemisphere abnormalities, which might obstruct normal development (Rourke, 1989). These obstacles prevent a kid from exploring his or her world, understanding the consequences of his or her actions, and obtaining critical experience with coordinated visuomotor abilities. They can also obstruct the connection process between a newborn and its carers, which is dependent on nonverbal abilities.

Because mother–infant interaction predicts attachment quality during the toddler phase, and attachment quality predicts social adjustment in early and middle childhood, problems with right-brain functioning can result in not only early motor and cognitive difficulties, but also in abnormal social relationships, putting children at risk for emotional difficulties later in life.

Some of these children's social development challenges are likely due to their failure to satisfy the high demands for nonverbal information processing in social contexts. Overwhelmed by the difficulty of integrating information about the facial characteristics, tone of voice, physical activity, and verbal content of other children, they are unable to follow even basic exchanges. Their lack of experience and engagement with other youngsters might eventually lead to feelings of isolation, loneliness, and depression. Nonverbal learning problem has even been implicated as a risk factor for the development of schizophrenia.

Pediatric clinical neuropsychologists initially search for a difference between verbal and nonverbal tasks when evaluating the possibility of nonverbal learning problems. If the same pattern shows on subsequent tests comparing verbal and visual-spatial/visual-motor abilities, it is likely that a nonverbal learning disability will be found. Often, but not

always, the pattern of poor performance on righthemisphere activities is followed by indicators of impaired right-hemisphere performance on the Halstead–Reitan Battery.

As they do with other types of learning disorders, pediatric clinical neuropsychologists work with children who have nonverbal learning impairments to develop remedial programs. They advise parents and instructors to make the most of their children's verbal abilities in order to compensate for nonverbal domain deficiencies. Additionally, they urge that these youngsters receive individualized treatment from an expert in learning difficulties or a tutor.

Without this assistance, their academic performance is likely to lag behind that of their peers as school responsibilities grow. Group therapy, social skills workshops, individual counseling, facilitation of organized peer interactions, or involvement in after-school programs are frequently used to improve children's deficient social skills.

# Conclusion

It can be concluded that Clinical psychology is the largest single subfield within the greater discipline of psychology. It entails research, education, and other services aimed at identifying, forecasting, and alleviating maladjustment and impairment. To become a licensed clinical psychologist, various educational, legal, and personal requirements must be met. Clinical psychology has a nearly 30-year history in Malaysia, yet it remains a marginalized mental health profession in terms of recognition, professional practice, research, and training. Given the growing recognition of the need for clinical psychologists and the rising variety of the population in need of mental health care, it is critical to enhance the validity of clinical evaluation, diagnosis, and treatment within Malaysia's multicultural and multilingual society. Clinical psychologists encounter various obstacles, not the least of which is the fact that the majority of persons with psychiatric issues remain untreated. Other elements influencing the discipline include judgments about how science and practice should be performed, how diverse theoretical perspectives may be combined, and the impact of present and future health care delivery systems on clinical psychology practice. Simultaneously, clinical psychology and counseling must collaborate to drive the development of the psychology discipline in order to foster growth among other applied psychology practitioners in the country. Internationalisation is viewed as a means of staying current with global trends affecting the profession's progress. However, the profession must first strengthen itself by addressing core growth challenges such as human resources, education, regulation, and professional practice competency.

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