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Anatomy & Physiology

for Allied and Healthcare Students

GD Mogli

2nd Edition

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14
CHAPTER

Medical Psychology

On completion of this chapter, the student will be able to:

- Understand briefly about psychology and psychologists
- Describe abnormal, clinical, cognitive psychology
- Explain community, comparative and counseling psychology
- Know health, industrial, organizational and occupational health psychology
- Illustrate personality, social and qualitative and quantitative psychology

DEFINITION

Psychology (literally means 'study of the soul' or 'study of the mind') is an academic and applied discipline, which involves the scientific study of human or animal mental functions and behaviors. In the field of psychology, a professional researcher or practitioner is called psychologist. In addition or opposition to employing scientific methods, psychologists often rely upon symbolic interpretation and critical analysis, although less frequently than other social sciences such as sociology.

Psychologists generally study such observable fact such as perception, cognition, attention, emotion, motivation, personality, behavior and interpersonal relationships and also consider the mind. A neuropsychologist attempts to understand the role of mental functions in individual and social behavior, in order to explore the underlying physiological and neurological processes.

Psychological knowledge is applied to various areas of human activity including the family, education, employment and the treatment of mental health problems. Psychology includes many subfields as diverse as human development, sports, health, industry, media and law, and integrate research from the social sciences, natural sciences and humanities.

Psychology encompasses a vast domain and includes many different approaches to the study of mental processes and behavior.

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Below are the major areas of inquiry that comprise psychology. A comprehensive list of the subfields and areas within psychology can be found at the list of psychology topics and list of psychology disciplines.

ABNORMAL PSYCHOLOGY

Abnormal psychology is the study of abnormal behavior in order to describe, predict, explain and change abnormal patterns of functioning. Abnormal psychology studies the nature of psychopathology and its causes, and this knowledge is applied in clinical psychology to treat patients with psychological disorders.

It is normally difficult to draw the line between normal and abnormal behaviors. In general, abnormal behaviors must be maladaptive and cause an individual significant discomfort in order to be of clinical and research importance. According to the DSM-IV-TR, behaviors may be considered abnormal if they are associated with disability, personal distress, the violation of social norms or dysfunction (Fig. 14.1).

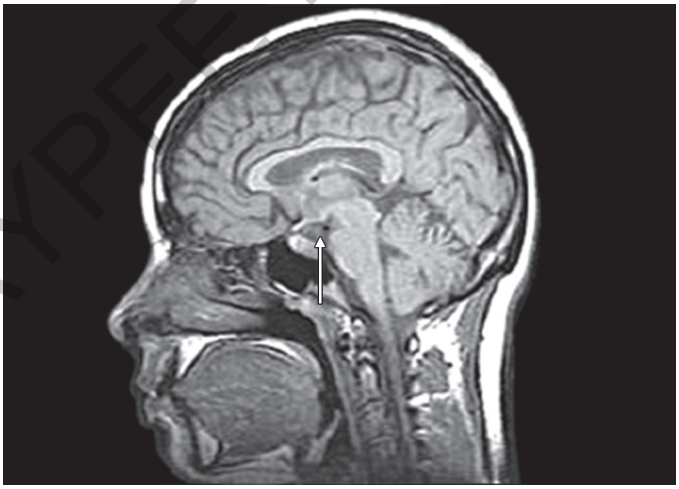

FIG. 14.1 Magnetic resonance imaging (MRI) depicting the human brain. The arrow indicates the position of the hypothalamus

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BIOLOGICAL PSYCHOLOGY

Biological psychology is the scientific study of the biological, status of behavior and mental states. Bearing in mind all behavior as entangled with the nervous system, biological psychologists feel it is sensible to study how the brain functions in order to understand behavior. This is the approach taken in behavioral neuroscience, cognitive neuroscience and neuropsychology. Neuropsychology is the branch of psychology that aims to understand how the structure and function of the brain relate to specific behavioral, and psychological processes. Neuropsychology is particularly concerned with the understanding of brain injury in an attempt to work out normal psychological function. Cognitive neuroscientists often use neuroimaging tools, which can help them to observe, which areas of the brain are active during a particular task.

CLINICAL PSYCHOLOGY

Clinical psychology includes the study and application of psychology for the purpose of understanding, preventing and relieving psychologically-related distress or dysfunction and to promote subjective well-being, and personal development. The psychological assessment and psychotherapy are part of general study, and clinical psychologists may also engage in research, teaching, consultation, and program development and administration. Some clinical psychologists may focus on the clinical management of patients with brain injury, which is known as clinical neuropsychology. In many countries, clinical psychology is a profession that deals with mental health.

The clinical psychologist perform the work that likely to be influenced by various therapeutic approaches, all of which involve a formal relationship between professional and client that could be an individual, couple, family or small group of community. The various therapeutic approaches and practices are associated with different theoretical perspectives, and employ different procedures anticipated to form a therapeutic alliance, explore the nature of psychological problems, and persuade new ways of thinking, feeling or behaving. There are four major theoretical perspectives that are psychodynamic, cognitive behavioral, existential-humanistic and

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systems or family therapy. There has been a growing movement to integrate the various therapeutic approaches, especially with an increased understanding of issues regarding culture, gender, spirituality and sexual orientation. With the advent of more vigorous research findings regarding psychotherapy, there is evidence that most of the major therapies are about of equal effectiveness, with the key common element being a strong therapeutic association. In view of new findings and conducting various training programs, psychologists are now adopting an eclectic therapeutic orientation that has been found very useful and significant outcome.

COGNITIVE PSYCHOLOGY

Cognitive psychology studies cognition, the mental processes underlying mental activity. The research that made interesting to explore more on learning, perception, problem solving, reasoning, thinking, memory, attention, language and emotion, and other related areas. Classical cognitive psychology is associated with a school of thought known as cognitivism, whose adherents argue for an information processing model of mental function that consist of functionalism and experimental psychology.

As far as the cognitive science is concerned is an interdisciplinary enterprise of cognitive psychologists, cognitive neuroscientists, researchers in artificial intelligence, linguists, human-computer interaction, computational neuroscience, logicians and social scientists. In order to stimulate phenomena of interest computational models are occasionally used. Computational models provide a tool for studying the functional organization of the mind and neuroscience provides measures of brain activity. To understand the activities of both models play an important role.

COMMUNITY PSYCHOLOGY

In a social welfare state, community is one of fundamental ingredient in the society and in that community psychology plays a vital role and deals with the relationships of the individual to communities and the wider humanity. Community psychologists seek to understand the quality of life of individuals, families, communities and society.

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Their aim is to enhance improve quality of life through collaborative research and efficient practice.

Community psychology as a routine makes use of various perspectives within and outside of psychology to address issues of communities, the relationships within them and people's attitudes, and behaviors about them. Through collaborative research and practice, community psychologists hunt for to understand, and enhance to improve quality of life for individuals, families, communities, and society as whole. Community psychology besides curative, takes a public health approach and focuses on prevention and early intervention as a means to solve problems in addition to treatment. The psychologist had in-depth deliberations and discussions found that the perspective of community psychology as an ecological perspective with the person-environment fit being the focus of study and action instead of attempting to change the person or the environment when an individual or family is seen as having a problem. Timely understand the problem and providing appropriate solution would improve greatly.

COMPARATIVE PSYCHOLOGY

Comparative psychology refers to the study of the behavior and mental life of human being as well as animals. It is extended disciplines outside of psychology that study animal behavior such as etiology. Although the field of psychology is primarily concerned with humans, their behavior and mental processes of animals is also an important part of psychological research. This being either as a subject in with strong emphasis about evolutionary links and somewhat more controversially, as a way of gaining an insight into human psychology.

COUNSELING PSYCHOLOGY

Counseling psychology seeks to facilitate personal and interpersonal functioning across the life span with a focus on emotional, social, vocational, educational, health related, developmental, and organizational concerns. Counselors are primarily clinicians, using psychotherapy and other interventions in order to treat patients and potential patients. As conventionally, counseling psychology has been

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focusing more on normal developmental issues and on a daily basis stress rather than psychopathology, but this distinction has softened over time. Counseling psychologists are employed in a variety of settings, including hospitals, schools, universities, governmental organizations, businesses, private practice and community mental health centers, and also nonprofit religious healthcare organizations.

CRITICAL PSYCHOLOGY

Critical psychology its name indicates the seriousness that applies the methodology of critical theory to psychology. Accordingly, it seeks the supportive roles that psychology and psychologists play, often inadvertently, in oppressive ideologies, and it tries to replace these roles with ones that can transform oppressive social structures. Critical psychology operates on the belief "that mainstream psychology has institutionalized a narrow view of the field's ethical mandate to promote human welfare", and critical psychology endeavors to broaden the view of that mandate. The critical psychology is under transformation to find new ways and methods to deal cases in an effective ways.

A critical psychologist might ask whether a case with work stress necessitate efforts to change the macrolevel systems that control the work, rather than to treat in isolation those individuals who experience the anxiety and pressure. One might also ask why peoples efforts fail to incorporate a focus on human rights and social justice in complex societies. In short, critical psychology seeks, where it considers appropriate, to raise psychology's level of analysis from the individual to family and society, and to render psychology more transformative than superficially ameliorative. Critical psychology has been applied to a wide range of psychologies other subfields and many of its practitioners are employed in conventional psychological professions. As the lifestyle of people all over the globe is changing in a rapid manner, the critical psychology's role would become inevitable.

DEVELOPMENTAL PSYCHOLOGY

The growth of the human mind through the course of lifetime, the developmental psychology seeks to understand how people come to understand, perceive and act within their life span, and

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how these processes transform as the child grow older. This change focuses mainly on intellectual, cognitive, neural, social or moral development. Researchers who study children use a number of different types of research methods and techniques to make observations in natural settings or to employ them in experimental situation to find the results. Such methods and techniques often applied in specially designed games and activities that are both enjoyable for the child and scientifically useful to the executors and researchers to study the mental processes of small infants and children of less IQ. In addition to studying children, developmental psychologists also study aging and processes throughout the life span, from the infant stage to child growth, youth, adolescent and old age. Developmental psychologists has become a regular and continuous field to conduct research to evolve news techniques and methods to deal with newly emanating problems in the individual, families and community as a whole.

EDUCATIONAL PSYCHOLOGY

The work of child psychologists such as Lev Vygotsky, Jean Piaget and Jerome Bruner has been influential in creating teaching methods and educational practices. Educational psychology is often included in the syllabus of teacher education programs, at least in North America, Australia and New Zealand. Educational psychology is the study of how humans learn in educational settings, the effectiveness of educational interference within the set educational program, add value to the effective teaching psychology and the social psychology. The institutions where the child psychology and social psychology are imparted have to bear the practical needs of modern medicine, and psychological issues that are in vogue.

EVOLUTIONARY PSYCHOLOGY

Evolutionary psychology explores the genetic roots of mental and behavioral patterns, and that common patterns may have emerged because they were highly adaptive for humans in the environments of their evolutionary past. Fields closely related to evolutionary psychology are animal behavioral ecology, human behavioral ecology, dual inheritance theory and sociobiology. Memetics,

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founded by Richard Dawkins, is a related, but competing field that proposes cultural evolution can occur in a Darwinian sense, but independently of Mendelian mechanisms; it is therefore, examines the ways in which thoughts or memes, may evolve independently of genes in an evolutionary span of period.

FORENSIC PSYCHOLOGY

The legal, especially medical legal, are closely related with forensic psychology. The subject encompasses a broad range of practices including the clinical evaluations of defendants, reports to judges and attorneys, and courtroom testimony on given issues. Forensic psychologists are appointed by the court or hired by attorneys to evaluate defendants' competency to stand trial, competency to be executed, sanity and need for involuntary commitment. Forensic psychologists are involved in variety of psychological cases related to evaluate sex offenders and treatments and provide recommendations to the court through written reports, and testimony. Many of the questions, the court asks the forensic psychologist are generally concerned to legal issues. As a psychologist in some instance cannot answer all legal questions. For example, there is no definition of sanity in psychology. Rather, sanity is a legal definition that varies from place to place throughout the world. Therefore, a prime qualification of a forensic psychologist is an intimate understanding of the law, especially criminal law and now this has become a practicing profession, many lawyers have adopted as their specialized profession.

GLOBAL PSYCHOLOGY

The global psychology expands the aim of psychology to macrolevel trends; it examines the overwhelming consequences of global warming, economic destabilization and other large-scale phenomena, while recognizing that global sustainability can best be achieved by psychologically marinating sound individuals and cultures that could be useful to society. Global psychologists advocate a comprehensive, psychology, whose strength is its focus on the long-term well-being of all of humanity. Global psychology is matter of fact is a subfield of psychology that addresses the issues raised in the

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global sustainability debate for solutions to various psychological issues that emanate time-to-time.

HEALTH PSYCHOLOGY

Health psychology is mainly related to health illness and health care of needy clients. As we have seen the clinical psychology focuses on mental health and neurological illness. The health psychology is mainly concerned with the psychology of a much wider range of health-related behavior including healthy eating and living. The health psychology closely create working link between the doctor-patient relationship, a patient's understanding of health information and viewpoint about illness. Health psychologists generally involved in public health campaigns, examining the impact of illness or health policy on quality of life as a preventive promotive of psychological impact of health and social care that would build-up healthy society.

INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY

Industrial and organizational psychology (I/O) applies psychological concepts and methods to optimize human potential in the industrial and organizational workplaces. Personnel psychology, a subfield of industrial and organizational psychology that applies the principles and methods of psychology in selecting, and evaluating workers. The I/O psychology's and organizational psychology, surveys the effects of work environments, and its conditions, management involvement on worker motivation, job satisfaction, and welfare of workers in addition to maximize the productivity.

LEGAL PSYCHOLOGY

In the modern days with competitive society, along with the advancements in all the fields, there also parallel growing of criminality, unethical methods and sexual abuses and accidental, suicidal and homogenous issues are creeping heavily all over the globe. The need for legal settlements has become part of judiciary and prevent the growth, need for legal psychologist is inevitable. Legal psychology is a specialized field to study various issues prevalent in the society, public areas to explore the possibility of assisting the

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judiciary and society in minimizing the crime and other prevailing legal issues related to human elements that could be addressed. This profession has been engaged as an advisory body in policy makers for the security and well-being of people.

OCCUPATIONAL HEALTH PSYCHOLOGY

Occupational health psychology (OHP) is a discipline that emerged out of health psychology, industrial/organizational psychology, and occupational health. The OHP is concerned with identifying psychosocial characteristics of workplaces that give rise to problems in physical and mental health, e.g. depression. The OHP is concerned with psychosocial characteristics of workplaces as workers' way of working and employers decision, and attitudes of supervisors in getting the work done. The OHP also concerns itself with interference that can prevent or improve work-related health problems. Such interventions have definite beneficial implications for the employees and employers, and economic success of organizations. The OHP spends more on research areas of concern include workplace violence, unemployment and workplace safety.

PERSONALITY PSYCHOLOGY

Personality psychology studies enduring patterns of behavior, thought, and emotion in individuals, commonly referred to as personality. Theories of personality vary across different psychological schools of thought. According to Freud, personality is based on the dynamic interactions of the ego, superego. Trait theorists, in contrast, attempt to analyze personality in terms of a discrete number of key traits by the statistical method of factor analysis. The number of proposed traits has varied widely. An early model proposed by Hans Eysenck suggested that there are three traits that comprise human personality—extraversion-introversion, neuroticism, and psychoticism. Raymond Cattell proposed a theory of 16 personality factors. The 'Big Five', or Five-factor Model, proposed by Lewis Goldberg, currently has strong support among trait theorists. The personality theory carry different assumptions about such issues as the role of the childhood experience, behavior, forgets, strong and weak personality.

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QUANTITATIVE PSYCHOLOGY

The term 'quantitative psychology' is relatively new and gradually gaining the ground as specialize branch of psychology. This covers the longer standing subfields psychometrics and mathematical psychology. Quantitative psychology involves the application of mathematical and statistical modeling in psychological research, and the development of statistical methods for analyzing and explaining behavioral data. Psychometrics is the field of psychology concerned with the theory and technique of psychological measurement, which includes the measurement of knowledge, abilities, attitudes and personality traits. Measurement of these phenomena is difficult and much research has been developed to define, and analyze such phenomena. Psychometric research typically involves two major research tasks, namely:

1. The construction of instruments and procedures for measurement.
2. The development and refinement of theoretical approaches to measurement.

MATHEMATICAL PSYCHOLOGY

Mathematical psychology is the subdiscipline that is concerned with the development of psychological theory in relation with mathematics and statistics. Basic topics in mathematical psychology include measurement theory and mathematical learning theory as well as the modeling and analysis of mental, and motor processes. Psychometrics is more associated with educational psychology, personality and clinical psychology. Mathematical psychology is more closely related to psychonomics/experimental and cognitive and physiological psychology, and (cognitive) neuroscience.

SOCIAL PSYCHOLOGY (FIG. 14.2)

The social psychology is playing very important role in hospital and patient care environment. These professionals have become indispensable in the care of patients. Social psychology is the study of social behavior and mental processes, with an emphasis on how humans think about each other and how they relate to each other. Social psychologists are especially interested in how people react to

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FIG. 14.2 Social psychology studies the nature and causes of social behavior

social situations. They study such topics as the influence of others on an individual's behavior and the formation of beliefs, attitudes, and stereotypes about other people. Social cognition fuses elements of social and cognitive psychology. In order to understand how people process, remember, and distort social information. The study of group dynamics reveals information about the nature and potential optimization of leadership, communication, and other phenomena that emerge at least at the microsocial level. In recent years, many social psychologists have become increasingly interested in implicit measures, mediational models and the interaction of both person, and social variables in accounting for behavior.

SCHOOL PSYCHOLOGY

School psychology is also an integral part of educational psychology and clinical psychology to understand and treat students with learning disabilities, to promote the intellectual growth of students in general and weak, and below average students in particular. The main object is also promoting safe, supportive and effective learning environments. School psychologists are trained in educational and behavioral assessment, intervention and prevention, and these psychologist are called professional 'psychologist'.

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RESEARCH METHODS (FIG. 14.3)

Psychology leans to be drawing on knowledge from other fields to help explain and understand psychological phenomena. Additionally, psychologists make extensive use of the three modes of inference that were identified by CS Peirce—deduction, induction and abduction (hypothesis generation). While often employing deductive-nomological reasoning, they also rely on inductive reasoning to generate explanations. For example, evolutionary psychologists propose explanations of human behavior in terms of such behaviors' advantages for hunter-gatherers.

Academic psychologists may focus purely on research and psychological theory, aiming to further psychological understanding in a specific area, while other psychologists may work in applied psychology to deploy such knowledge for immediate and practical benefit. These approaches are not mutually exclusive and many psychologists will be involved in both researching, and applying psychology at some point during their career. Many clinical psychology programs aim to develop in practicing psychologists both knowledge of and experience with research and experimental



FIG. 14.3 Wilhelm Maximilian Wundt (seated) was a German psychologist, generally acknowledged as a founder of experimental psychology

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methods, which they may interpret and employ as they treat individuals with psychological issues.

When an area of interest requires specific training and specialist knowledge, especially in applied areas, psychological associations are formed, and the association in collaboration with educational institutions establish educational and training requirements. These requirements may be laid down for institutional diplomas or university degrees in psychology, so that students acquire an adequate knowledge in a number of areas in order to provide manpower in this specialty, where psychologists are required to offer treatment.

QUALITATIVE AND QUANTITATIVE RESEARCH

Qualitative psychological research methods include interviews, first-hand observation and participant observation. Qualitative researchers aim to enrich interpretations or critiques of symbols, subjective experiences, or social structures. Research in most areas of psychology is conducted in accordance with the standards of the scientific method. Psychological researchers seek theoretically interesting categories and hypotheses from data, using qualitative or quantitative methods or both to explore the unknown to known knowledge. Similar hermeneutic and critical aims have also been served by 'quantitative methods', as in Erich Fromm's study of Nazi voting or Milgram's studies of obedience to authority.

Quantitative psychological research renders itself to the statistical testing of hypotheses. Quantitatively oriented research designs include the experiment, quasi-experiment, cross-sectional study, case-control study and longitudinal study. The measurement and operationalization of important constructs is an essential part of these research designs. Statistical methods include the Pearson product-moment correlation coefficient, the analysis of variance, multiple linear regression, logistic regression, structural equation modeling and hierarchical linear modeling. The quantitative and qualitative research is gaining foothold in all the fields.

PRACTICE

Some observers distinguish a gap between scientific theory and its application—in particular, the application of unsupported or

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unsound clinical practices. Critics say there has been an increase in the number of mental health training programs that are mainly remain theoretical knowledge and do not inspire scientific competence that help in practice. One disbeliever asserts that practices, such as 'facilitated communication for infantile autism'; memory-recovery techniques including body work; and other therapies, such as rebirthing and reparenting, may be doubtful or even dangerous, despite their qualification to practice. In 1984, Allen Neuringer had made a similar point regarding the experimental analysis of behavior. The institutions impart more practical knowledge and required skills to practice efficiently.

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Chapter Summary

Clinical psychology includes the study and application of psychology for the purpose of understanding, preventing and relieving psychologically-related distress or dysfunction and to promote subjective well-being, and personal development. The psychological assessment and psychotherapy are part of general study, and clinical psychologists may also engage in research, teaching, consultation, and program development and administration. Some clinical psychologists may focus on the clinical management of patients with brain injury, which is known as clinical neuropsychology. In many countries, clinical psychology is a profession that deals with mental health. The clinical psychologist performs the work especially related to children with abnormal behavior and activities either they are too intelligent or too feeble to their age or parents or society is more concern about their future.

There are four major theoretical perspectives that are psychodynamic, cognitive behavioral, existential-humanistic and systems or family therapy. Cognitive psychology studies cognition, the mental processes underlying mental activity. The research that made interesting to explore more on learning, perception, problem solving, reasoning, thinking, memory, attention, language and emotion, and other related areas. Community psychologists seek to understand the quality of life of individuals, families, communities and their aim is to enhance improve quality of life through collaborative research and efficient practice. Counselors are primarily clinicians, using psychotherapy and other interventions in order to treat patients and potential patients. As conventionally, counseling psychology has been focusing more on normal developmental issues and on a daily basis stress rather than psychopathology. The critical psychology is under transformation to find new ways and methods to deal cases within an effective ways to promote human welfare, and critical psychology endeavors to broaden the view of that mandate.

Educational psychology is the effectiveness of educational interference within the set educational program, adds value to the effective teaching psychology and the social psychology. Evolutionary psychology explores the genetic roots of mental and behavioral patterns, and that common patterns may have emerged because they were highly adaptive for humans in the environments of their evolutionary past. The child psychology and social psychology concerned with the practical needs of modern medicine, and psychological issues that are in vogue. The medical legal, with forensic psychology are involved with the practices including the clinical evaluations of defendants, reports to judges, and courtroom testimony on given issues.

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Forensic psychologists are involved in variety of psychological cases related to evaluate sex offenders and treatments and provide recommendations to the court through written reports, and testimony.

Health psychology is mainly related to health illness and health care of needy clients and the clinical psychology focuses on mental health and neurological illness. The health psychology is mainly concerned with the wider range of health-related behavior including healthy eating and living. The health psychology closely create working link between the doctor-patient relationship, a patient's understanding of health information and viewpoint about illness and involve in public health campaigns, examining the impact of illness or health policy on quality of life as a preventive promotive of psychological impact of health and social care that would build-up healthy society. The social psychology professionals have become indispensable in the care of patients social psychology is the study of social behavior and mental processes with an emphasis on how humans think about each other and how they relate to each other. Social psychologists are especially interested in how people react to social situations.

Personality psychology studies enduring patterns of behavior, thought, and emotion in individuals, commonly referred to as personality. Abnormal psychology studies the nature of psychopathology and its causes, and this knowledge is applied in clinical psychology to treat patients with psychological disorders. Biological psychology is the scientific study of the biological, status of behavior and mental states. There has been a growing movement to integrate the various therapeutic approaches, especially with an increased understanding of issues regarding culture, gender, spirituality and sexual orientation. With the advent of more vigorous research findings regarding psychotherapy, there is evidence that most of the major therapies are about of equal effectiveness, with the key common element being a strong therapeutic association. In view of new findings and conducting various training programs, psychologists are now adopting an eclectic therapeutic orientation that has been found very useful and significant outcome.

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GD Mogli PhD MBA FHRIM (UK) FAHIMA (USA) is Visiting Professor of Medical Informatics, Mahatma Gandhi Institute of Medical Sciences, Sevagram, Maharashtra, India. He is a Fellow of American Health Information Management Association (FAHIMA), USA and the Health Record Information Management (FHRIM), UK and holds a doctorate in Medical Record Administration. He serves as the Chief Executive Officer of Dr Mogli's Healthcare Management Consultancy and was formerly Senior Consultant (eHealth Management) at HEARTCOM Inc. (USA). He has also served as a visiting consultant to the World Health Organization (WHO).

He has a vast experience in the Healthcare Delivery System in general and Medical Records/Health Information Management in particular. Over his five-decade career, he has received many distinguished awards and credentials from professional organizations and countries wherever he served. In 2004, the American Health Information Management Association (AHIMA) has awarded him as one of the 2004 Triumph Award nominees for 'Honouring Those Who Make a Difference'. He is the first individual to have HIM Fellow from UK and USA, First AHIMA Fellow outside USA. He is a listee of the International Biographical Centre (IBC) Leading Health Professionals of the World-2008 and as such stands testament to the efforts made by said individual in the arena of eHealth Management. He has served as Sr Consultant/Adviser to the Ministries of Health, India, Afghanistan, Iran, Kuwait, Saudi Arabia, Oman, Bahrain, Qatar and UAE. He is an active member of AHIMA (USA), IRHIM (UK), IFHIMA (World), President of HIMA India and serving as Academic Advisory Board to educational institutions. He holds three world records and is widely acclaimed as the "Father of Medical Records in India and the Middle East". IFHIMA (World) has also recognized him as the "Champion of Developing Countries". He has presented papers at 24 international conferences across the globe and delivered guest lectures in 14 nations. Actively engaged in healthcare education and research, he has authored 20 books and 136 scientific papers in reputed international journals.

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