Global Perspectives on Psychiatric Education

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Contents

Introduction 2
The Historical Context 3
The Current Context 3
Research Advances 3
Resource Discrepancies 5
Health Systems Changes 6
Diagnostic Classification Evolution 7
Information Technology and Genetics Modification 8
Culture and Stigma 9
Why Continue to Emphasize a Biopsychosocial Approach? 9
The Current Global Educational Environment 10
Development, Implementation, and Evaluation of a Psychiatric Curriculum 12
Medical Student Training 16
Knowledge 17
Skills (Interpersonal and Communication) 17
Attitudes 18
Resident Education 19
European Union of Medical Specialties (UEMS) approach 20
The United States Accreditation Council for Graduate Medical Education (ACGME) approach 21
A Public Health Approach 24
Assessment and Evaluation of Medical Students and Residents 25

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The Importance of Educational Research 27
Impact of Early Exposure to Psychiatry in Medical School 27
Determining the Sequence of Residents' Training Experiences 27
Measuring the Impact of Adequate Clinical Supervision 28
Video-Supervision to Bridge Educational Gaps in Underserved Countries 29
Opportunities for Research in Education 29
Conclusion 30
References 30

Abstract

This chapter provides comprehensive global perspectives on psychiatric education. The chapter is organized by presenting historical background information, some key aspects of the current context, specific review of medical student undergraduate and resident graduate education, and emphasis on the importance of educational research. The authors have been actively participating in psychiatric education for more than four decades throughout the world. They consider the cultural context as primordial in understanding and implementing educational initiatives. The authors discuss experiences with detailed review of the evolution of psychiatric education, through formal involvement in the leadership of the World Psychiatric Association (WPA) as Secretary of Education (Tasman), Chair of the Education Section (Tasman), and Co-chairs of the Psychotherapy Section (Alfonso and Tasman).

Keywords

Residency education · Medical student education · Low and middle-income countries · Psychiatry education · Cultural adaptations of educational models

Introduction

Any discussion of psychiatric education must begin by exploring the context within which psychiatric training and education occurs. This should be an obvious point, since training must reflect the current state of knowledge and treatment availabilities as well as the nature of the system of care within which practice occurs. In addition, a global perspective especially requires an appreciation of the resources available to support education in various locations and of the role of cultural influences of psychiatry within any particular country or region. The chapter is organized by providing a brief historical review, a discussion of some key aspects of the current context, specific review of medical student and residency education, and a brief exhortation to substantially increase educational research in psychiatry.

The Historical Context

One thousand years ago, in most cultures, people with psychiatric illnesses were widely believed to be suffering from afflictions by evil spirits or gods. Thanks to pioneering physicians in Central Asia such as Avicenna, Rhazes, and Ali Ibn Tabari (Javanbakht and Sanati 2006), the preservation of the rational and humane treatment of the mentally ill that had been championed by the Greeks was re-introduced into many cultures around the world.

Just over one hundred years ago, at the end of the nineteenth century, the themes that would occupy psychiatry in the coming century and thus influence educational programs were already in evidence. One theme has been the emphasis on understanding brain pathology in psychiatric illness, built on the work of Bleuler and Kraepelin in Europe. And, of course, 1899 marked the publication in Europe of Freud's *Interpretation of Dreams*, and the beginnings of modern psychoanalysis.

Less well known, however, is another work on which Freud was working at the same time. In the *Project for a Scientific Psychology*, Freud (1895) was attempting to understand the neural basis for psychological processes. While this work was not discovered or published until 1953, many years after his death, his century-old quest has marked one of the important preoccupations of modern psychiatry to explain psychic phenomena in neurobiological terms (Glucksman 2016).

What were the other preoccupations a century ago? Providing humane treatment for psychiatric disorders, understanding reasonable diagnostic classifications, overcoming substantial societal forces working against rational diagnosis and humane treatment, and developing effective treatments were clearly at the forefront. Building on the tremendous scientific advances of the late nineteenth century, the beginning of the last century marked a time of great optimism for what twentieth-century science would bring for psychiatry.

We are still preoccupied with many of the same issues as were our colleagues a hundred years ago, but, of course, in a way transformed by a century of experience and knowledge. We are still concerned with how the psychiatrically ill suffer irrational discrimination in many ways. Social ostracism, stigmatization, discriminatory governmental policies and corporate policies, discriminatory limits on access to care, and reimbursement for care are but a few manifestations of these ongoing worldwide concerns. And we are still working to develop more effective treatments based on an etiologically based system of diagnosis. The recently published WPA-Lancet Psychiatry Commission on the Future of Psychiatry (Bhugra et al. 2017) provides a look into how these current concerns may evolve in the coming decade.

The Current Context

Research Advances

Two of the most important discoveries of the recent decades are in the areas of neural plasticity and brain cell generation.

In 2000, the Nobel Prize in Medicine was awarded to Eric Kandel, the New York-based psychiatrist whose work established the fact that the brain is being continually remodeled, partly in response to developmental and environmental influences, a process we now call "neural plasticity" (Bennett et al. 1964; Pascual-Leone et al. 2005). This remodeling occurs via genetically controlled new synapse formation, as exemplified in the transition of information from immediate to long-term memory storage (Kandel et al. 2013).

Also, contrary to long standing previous belief, there is convincing evidence that new brain cells are continually formed from stem cells in the brain (Clarke et al. 2000). Both of these important findings open up many new avenues for research into brain function and dysfunction and development of new and more precisely targeted treatments.

At some point into the future, psychiatrists will learn to control these processes with more precision than is now possible. It is also true, however, that interpersonal experiences, such as a therapeutic relationship in psychotherapy, can alter brain function in the same way as medications (Roose et al. 2015; Linden 2006), as we have seen in studies of obsessive compulsive disorder (Baxter et al. 1992), generalized anxiety disorder (Jockers-Scherübl et al. 2006), social anxiety (Furmark et al. 2002), posttraumatic stress disorder (Linden 2006), and major depressive disorder (Brody et al. 2001, Goldapple et al. 2004).

Research on the "Recovery Model" of treatment (Anthony 2000) has shown that superior outcomes are seen when we both treat symptoms *and* work to enhance our patients' resiliency and their individual coping and adaptive capacities (Herrman and Harvey 2005). In addition, findings of the 2015 REACH study (Researching the Effectiveness of Acceptance-based Coping during Hospitalization) (Gaudiano et al. 2017) confirm that even for the most serious of all psychiatric illnesses, schizophrenia, treatment outcomes are better than with pharmacotherapy alone when psychosocial and psychotherapeutic interventions are part of the treatment. The REACH findings reinforce findings from other studies (Öst 2008; Powers et al. 2009), the subject of a review by Michael Balter in *Science* in 2014, which illustrated the superiority of treatment for schizophrenia when psychotherapy was a component. The Recovery After Initial Schizophrenia Episode (RAISE) study is a recent large multicenter study conducted in the USA examining the impact of having a multidisciplinary team that provide integrated medication and psychosocial treatments for patients with first episode psychosis. Psychotic patients who received psychotherapy and medication combination treatments had marked clinical, functional, and symptomatic improvement when compared to patients who received medication only treatments (Kane et al. 2015). When the same team of investigators examined the cost effectiveness of these interventions, they found out that benefits exceeded costs (Rosenheck et al. 2016). These advances reaffirm the position that for the foreseeable future, psychotherapeutic skills and the ability to develop and utilize a therapeutic relationship remain essential parts of psychiatrists' treatment skills and thus must be part of education programs.

With the continued expansion of our knowledge base, our roles in providing sophisticated psychiatric care will be enhanced. For example, ongoing neuroscience

and genetic advances will ensure that our pharmacologic interventions will continue to become more and more effective. A good example of this is the application of our knowledge of the cytochrome P450 enzyme system in clinical decision-making (Cozza et al. 2003). The cytochrome P450 enzyme system effects hepatic metabolism of many of the medications we use in psychiatry. This enzyme system has multiple alleles, and depending on the allele in an individual, metabolism of medications is affected. Poor metabolizers can have unusually long half-lives for drugs and thus a higher risk of toxicity or side effects. Extensive metabolizers may have great difficulty in achieving therapeutic levels with standard doses of medications. Understanding an individual's genotype will, in the future, allow better choice and monitoring of medications and will clearly improve clinical outcomes.

Another illustration of our advances in understanding of brain function and the interaction of genetic, environmental, and developmental influences involves our present day understanding of personality development. Psychiatry has traditionally defined personality from a categorical perspective. In this model of understanding personality, a set of characteristics, which cluster around certain traits, is defined as a specific personality type or a specific personality disorder. Over the last several decades, however, a more complex model of personality development has been emerging. This model has come to be known as the dimensional model (Widiger 2007). In this model, specific personality characteristics, which are generally identifiable very early in development and probably the result of genetic transmission, are modified depending upon the developmental environment of the individual. The genetically transmitted characteristics are referred to as temperamental traits. Examples of such traits in the Cloninger model (Cloninger 2000; Cloninger 2003) include novelty seeking behavior, risk tolerance, responsiveness to emotional stimuli, and aggressiveness.

No matter how advanced our pharmacotherapy practice, however, it is clear that for the foreseeable future, many patients with the most severe psychiatric illnesses will still require psychosocial and psychotherapeutic treatments for optimal outcomes. In fact, clinical outcomes research indicates that for many patients with depressive and anxiety disorders, for example, combined medication and psychotherapy treatment modalities provide better outcomes than any single modality alone (Cuijpers et al. 2014). The recent experience when clozapine was first introduced further illustrates the superiority of combining these treatment modalities (Ranasinghe and Sin 2014). Many institutionalized patients with chronic schizophrenia treated with clozapine had, for the first time, a positive response to medication treatment, with significant symptomatic relief. But the symptom relief alone did not allow for discharge from the hospital. Substantial psychosocial and psychotherapeutic treatment was needed to help them live in a new world of perception and experience no longer affected by the filter of their psychiatric symptoms.

Resource Discrepancies

The ability to construct and operate education programs is highly dependent on available resources. These resources include adequate clinical facilities, patient

access including diversity of diagnoses and demographic characteristics, faculty with both a wide range of knowledge and skills and support for teaching time, access to educational materials in a range of media, and a pool of potential trainees from which to recruit a group with a high likelihood of becoming skilled clinicians.

The World Health Organization (WHO) has published several reviews of the availability of both psychiatric resources and educational resources by country, the most comprehensive of which was published in 2005 (WHO 2005). While a later update in 2015 did not attempt to provide as much detail (WHO 2015), it shows that there have been almost no significant changes in distribution of resources over the course of a decade. Resource differences have a significant influence not only on the roles of psychiatrists in any particular country or region, but also on the educational programs. When there are few psychiatric treatment facilities available, the quality of the psychiatry education programs for either medical students or residents is significantly impaired. Thus, in a country where there are few psychiatrists and/or treatment facilities, those medical students who do not become psychiatrists will have had little exposure during medical school to well-supervised clinical experiences. And those students who might be interested in psychiatry as a career will be less likely to choose it for their professional training. These factors seriously impair delivery of psychiatric care to all but a few of the population as well as education programs. Many authors have discussed the impact of these resource discrepancies (Tasman et al. 2009; Alfonso et al. 2017).

Health Systems Changes

One of the challenges for psychiatric educational programs significantly involves the manner in which healthcare is delivered. No matter which system exists in any country, however, psychiatry and general health care almost always operate as separate systems with highly variable national or local integration.

Collaborative and integrated medical/psychiatric care appears to be the most desirable model for several reasons. There is a high co-morbidity of medical and psychiatric disorders in clinical practice. Additionally, a growing body of research demonstrates that collaborative medical/psychiatric care produces better clinical outcomes and results in lower death rates from medical illnesses (Katon et al. 1995, Roy-Byrne et al. 2001). Cost effectiveness, with reduced hospital length of stay, maximization of out-patient services, and overall reduction in total costs make integrated care systems the most desirable future model (Blount 1998; Schulberg et al. 2002; Gröne and Garcia-Barbero 2002).

Several factors, in addition to the severe shortage of mental health clinicians in nearly all parts of the world, though, make implementing integrated care delivery unique. Medical and psychiatric clinicians have different educational backgrounds and practice models. The language clinicians use, how they communicate, the workflow, how the clinical problems are conceptualized, and how treatment goals are prioritized in an integrated system require cultural and operational shifts which change the nature of practice for all clinicians. The new health care reform being

implemented in the USA now requires that the entire system of care move to an integrated model (Shim et al. 2012). Because of the improved clinical outcomes and lower costs in and integrated system, many other countries, if they do not already have an integrated system, will soon be moving in the same direction. Significant attention to the impact of the system of care is generally not a major explicit focus in education programs. Due to the specific complexities of working in an integrated care system, however, more curriculum time may need to be added in this area.

Diagnostic Classification Evolution

There is little doubt that there have been tremendous strides over the last 30 years in advancing the ability to make reliable and valid diagnoses of psychiatric illness. DSM 5 and ICD 10 represent the latest step in this record of advances in our approach to clinical diagnosis. These newest versions, with ICD-11 not too far in the future, have had an incredible impact on the ability to conduct clinical research, one of the major goals of the DSM revisions. But the nature of our current classification systems also illustrates one of the dilemmas that concern our field.

The DSM and ICD, and all other systems in use around the world, are still symptom-cluster approaches, and psychiatric nosology is still a long way from an etiologically based categorization of illness. This is of course due to the complexity of the pathogenesis of psychiatric disorders and the need for substantial further etiological and pathophysiological research.

Because these diagnostic systems are nonetiologic, in few places in the DSM, or in the ICD, is provision made for understanding the role of trauma, psychological conflict, or developmental distress in the development of the symptoms we see. Unfortunately, the many, natural disasters, civil wars, and international conflicts around the world make attention all too necessary to the effect of physical trauma, starvation, poverty, torture, and forced migration. In only a few places in our present diagnostic nosologies is the capacity for symptoms to have symbolic meaning taken into account. And, very importantly, cultural influences on either normal development or psychopathology are not given much attention. These omissions cause a great problem. Because while we are training psychiatrists to become competent in carrying out diagnostic evaluations based on DSM, ICD, or other similar systems or disease symptom cluster checklists, we are not doing as well, especially in training the next generation of psychiatrists, about these other aspects of understanding. And what is the impact? It could become problematic to emphasize a symptom cluster approach as our primary framework for both understanding psychiatric illnesses and determining treatment. This approach risks training a generation of psychiatrists who may lack even the most basic framework for understanding mental functioning from psychological, social, or cultural perspectives.

Some might say that this is not too important, that with our increasing understanding of brain structure and function, future psychiatric practice relies primarily on somatic, not psychotherapeutic, interventions. And the severe shortage of mental health clinicians around the world and the very large demand for psychiatric services

even in countries with significant cultural impediments to seeking care would also seem to support a less complex approach to diagnosis and treatment. When we underemphasize the value of empathic listening to understand the role of developmental distress, psychological conflict, cultural influences, the role of trauma, and the symbolic aspects of symptoms, we lose essential information necessary to fully understand our patients.

Information Technology and Genetics Modification

We are on the cusp of a dramatic transition to a new, human-created electronic and technologic environment. We also know of the tremendous advances being made in genetics and the likely impact on physical status. We should also anticipate a parallel ability to recreate, and modify, ourselves mentally through advances in both genetics and information technology. Direct human brain-computer interfaces now exist and are rapidly becoming more sophisticated. While now only in the realm of science fiction, development is occurring in animal studies now of devices to modify memory or change patterns of emotional responsiveness. Someday we may be able to use genetic manipulation to accomplish the same goal. These techniques will likely be developed within the careers of young psychiatrists already in practice. Control of such technology will become one of the most critical societal decisions of the information and genetic age.

Thus, we have an unparalleled set of opportunities and challenges as information technology, genetics, and psychiatry intersect. There is tremendous excitement as we explore meaningful ways of using present technology in our research, education, and clinical missions. At some point, however, as more and more of our world is formed and modified by electronic information or genetic manipulation, we will have to face the issues that this increased technological capacity entails. In the 1950s, the American science fiction writer Philip K. Dick (1989) continually investigated the nature of reality and its potential modification via technology. In his imagined universes, machines designed to mimic humans often show themselves to be more "human" than their flesh and blood counterparts. Our profession of psychiatry, placed in the role of arbiter of sanity and reality, both by virtue of our training *and* by societal sanction, must face the challenge of preserving the "human" within an increasingly mechanistic world. This task will become of more and more central importance as our world undergoes what is an increasingly chaotic and often painful transmutation into the next iteration of the information and genetic age.

Even with these changes, however, and undoubtedly for our own practice lifetimes, therapeutic transactions in psychiatry will occur in the context of a relationship between a physician and a patient, and we must ensure that our educational programs equip young psychiatrists with the full array of knowledge and skills required, for resources to be made available to provide sophisticated and comprehensive treatment (Bhugra et al. 2017).

Culture and Stigma

Culture has a well-recognized impact on individual and group emotions, thinking, and behavior. There is a vast body of knowledge supporting this understanding. Especially at present, with an exceptionally high level of population migration occurring, it is more important than ever that clinicians recognize this dimension of clinical care. Clinicians recognize cultural influence within a specific patient, but also how culture influences a variety of aspects of the therapeutic alliance and the likelihood not only of a patient coming to treatment but also adhering the psychiatrist's treatment recommendations.

Culturally influenced discrimination against those with psychiatric illnesses, their families, and those who provide treatment for them has been known for centuries in essentially every society or culture on earth to a greater or lesser degree. This stigmatization in modern times has effected not only the place of psychiatry in the health care system, but also governmental willingness to support adequate facilities, nondiscriminatory policies regarding access, training of clinicians, and reimbursement for psychiatric care compared to all other components of the health system, even in well-developed health care systems (NIMH Office of the Surgeon General 1999). Further, there is good evidence that significant stigmatization exists at present within other physicians (Gaebel and Zielasek 2014). While there is current impressionistic information from many clinicians around the world that stigma in the psychiatric sphere of concern has been diminishing in recent decades, there is little formal psychiatric research devoted to this topic. It still seems clear that stigma from any source and culturally influenced stigma has an adverse impact on patients' willingness to seek care (Fink and Tasman 1992; Abdullah and Brown 2011). Programs to reduce stigmatization have been implemented in many countries in academic institutions by psychiatric and other mental health related organizations and by governments. Psychiatrists in training and during their careers must be equipped with the knowledge and skills needed to help patients and their families overcome the resistance to seeking and staying in treatment, which flows from stigma.

A final point to emphasize is that just because we are now learning about the intricacies of genetics and the biology of brain function, this by itself is not dehumanizing. Human beings have not suddenly lost the capacity for symbolic meaning, or the capacity to suffer from the vagaries and vicissitudes of trauma, developmental conflict, and developmental deficit. In fact, our increasingly sophisticated understanding of the complex interplay between genetic endowment and developmental experiences supports the critical importance of a therapeutic relationship and its effect on the process of psychotherapeutic change.

Why Continue to Emphasize a Biopsychosocial Approach?

While psychiatrists work in a global environment with severe shortages of psychiatrists and substantial economic constraints, where our time with patients is

extremely limited, and where the majority of individuals in need go without sophisticated care or even have access to psychiatric medications, why emphasize the standard of providing comprehensive care within a biopsychosocial model? (Engel 1977). Because decades of substantial clinical experience and emerging research support the view that it remains the ideal toward which we should strive, it is the best model to understand both what is the diagnosis and who is the person that suffers from the illness. Knowledge of both is essential because while our goal is to treat the illness, we work with the person who has the illness. And in working with the person we seek not only to reduce the symptoms of the illness but also work to improve resiliency, which maximizes the ability to cope with stress and reduce maladaptive coping patterns of response.

The Current Global Educational Environment

In the years just before and after the turn of the twenty-first century, the World Psychiatric Association (WPA) produced its first set of curriculum recommendations for both undergraduate (medical student) and graduate (residency) psychiatric education (Tasman et al. 2011). The goal was to improve the quality of education and, consequently, the quality of care for patients with mental disorders. These efforts marked the first time an attempt was made to develop training standards that could be used globally, with the appropriate modifications in various countries.

The period since the publication of these initial recommendations has been marked by a significant growth in the field of psychiatry. Advances in all aspects of the field, ranging from basic understanding of the function of the brain, to diagnosis, treatment, and development of systems of psychiatric care, stimulated an evolution in our profession and the care we deliver. In addition, remarkable advances occurred in medical and psychiatric education, in response to the progress in our knowledge of illness and the development of new treatments and systems of care. The need for a new WPA core curriculum project for undergraduate and graduate psychiatric education was therefore identified.

A task force under the direction of Allan Tasman, then the WPA Secretary for Education, carried out the development of this project. The project was developed with the task force's appreciation of the tremendous diversity in psychiatric education across the globe. In the field of medical student education, we are aware of the broad range of expectations across continents and countries, ranging from formal continent wide requirements for medical student education in psychiatry to countries in which there are no national requirements that psychiatric education be included in the medical student curriculum. A parallel situation exists for residency education in psychiatry. Further, the great diversity of educational resources was an ongoing focus as the task force developed the recommendations. Moreover, in order to be useful throughout the world, recommendations needed to be constructed in such a way that local or national educational leaders could modify them based on their own requirements and resources, while considering the role that culture plays in both psychiatric diagnosis and treatment and in medical and psychiatric education. In

addition, there are significant influences on program structure, content, and design related to the size of the program and the institutional resources available. Thus, specific teaching content and methods must be compatible with all of these factors.

Recommendations regarding content, design, structure, methods, and evaluation tools were based on the most recent advances in psychiatric education. The medical student and resident psychiatric education sections in this document include what can be considered optimal standard descriptions of curricular content and implementation. Although the educational and clinical competencies discussed in this document are common to all regions of the world, there was recognition that modifications would be needed based on local realities. These include, but are not limited to, the availability of resources such as teachers, patient populations in various teaching settings, patient demographics, facilities, educational equipment and materials, technological support, financial support, and the designated time available to complete the prescribed course of education and training. Whether programs are offered in public, private, community based, religious, or other types of institutions will also dictate modifications. Political and legal regulations and standards are also likely to be influential in the curriculum decisions made at the local and national level.

Rather than prescribing a specific model for use in locations with a wide range of expectations and resources, this document was produced with the appreciation that, even in areas with few resources, there are differing points of view regarding content and structure of education. Some believe that, where desirable resources are few, psychiatrists must be trained more extensively than is generally considered optimal, as these few professionals may play a greater role in developing national policies or advocating within governmental agencies for psychiatric education and services. A role in the development of public health policies and programs is a specific example, requiring additional education for the health professional. A second approach favors reliance on existing state of the art educational guidelines from other regions to implement even in low resource areas. A third perspective suggests that the optimal approach to both medical student and residency education, where resources are limited, is to focus on a select set of "must know" skills and knowledge. Circumscribing education to the diagnosis and treatment of common disorders exclusively is an example of this last approach. Rather than prescribing these or other approaches, such as taking state of the art guidelines and modifying them based on specific national requirements, the task force recognized that these decisions are best made at the national and local level. Last, it was envisioned that the guidelines might become a vital resource in lobbying governments and institutions to improve educational programs and ultimately health care. Because of the rapid pace of change not only in psychiatry's knowledge base but also in the development of regional (e.g., the European Union of Medical Specialists (UEMS 2009) or national revisions in training requirements (e.g., the Milestones Project in the United States) (ACGME 2015), the WPA is reviewing existing guidelines for needed revisions.

Development, Implementation, and Evaluation of a Psychiatric Curriculum

Developing a psychiatric curriculum requires a determination of its key content elements, the sequencing of learning experiences, and making decisions about the time devoted to each content element. Once a program has been created, it must be implemented and continually evaluated and reassessed through careful consideration.

At the level of medical student education, the process begins with clarifying what a nonpsychiatrist physician needs to know about recognizing and treating psychiatric problems and when to obtain a psychiatric consultation or make a referral. Of course, such determinations will be extensively influenced by the national availability of psychiatric treatment resources. In most low and middle income countries, such availability is severely limited, requiring specific decisions about what the body of knowledge and skills should be for nonpsychiatrists, especially primary care physicians. At the level of residency training, constructing a psychiatric curriculum begins with clearly outlining the clinical roles of the practitioners in the specific country of the program. This issue in itself presents challenges, as psychiatrists across the globe are faced with varied responsibilities, influenced in part by cultural considerations, medical practice standards, number of students/trainees, length of specialty training, and availability of resources (personnel, clinical facilities, and financial and technological support).

Just as psychiatric curricula have become more structured and refined, various organizations have specified the core competencies required from a physician and the various specialists. Thus, in the United States, the Accreditation Council on General Medical Education (ACGME) has outlined six core competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. This is in addition to extensive specialty specific competencies (ACGME 2007). Focusing on specialists, the European Union of Medical Specialists (UEMS 2009) outlines the psychiatrist's main roles as expert/clinical decision-maker, communicator, collaborator, manager, health advocate, scholar, and professional (UEMS 2009). The required competencies, according to these organizations, are based on an educational framework, within which practical decisions are made, that allows a consistent approach to the formulation and monitoring of the curriculum's performance.

The kind, depth, and scope of knowledge contained within a psychiatric curriculum is a subject of continued debate and extensive study as the profession is rapidly evolving. The advantages and limitations of this process and its outcome were delineated by the deliberations of the UEMS Psychiatric Section, an entity comprised by a wide diversity of nations, perspectives, and ultimately, cultures. The Section initially refrained from creating a specific listing of topics to be covered in the residency curriculum, aside from their initial competency framework, citing that such elements "are determined by national conditions" (UEMS 2009).

Medical schools in some countries do not require more than a rudimentary experience in psychiatry, and training requirements for residents are exceptionally

varied, making the international acceptance of even generally approved components of psychiatric education a complicated task. Consistent with this perspective, we recognize that the training terrain and the form and content of the program will vary, based on where the psychiatric training is taking place. Thus, the initial phase of curriculum development requires looking at what, if any, governing body provides oversight to psychiatric training for medical student and/or resident education in that nation or region. Then, a careful study of the knowledge content requirements will provide the foundation for discussions about the topics to be covered and development of appropriate didactic experiences and clinical placements.

The particular knowledge and skill sets needed for competent practice have been debated in numerous venues in many countries, but all agree that trainees must be exposed not only to an adequate breadth of information to enable work in a variety of practice settings at the completion of training, but also that an appropriate depth of such knowledge will be needed at different stages of training. Yet there is no consensus regarding the desired knowledge and skills base for physicians who are not clinical specialists, thus leading to a wide range of medical student requirements in psychiatry. This is of particular concern for primary care clinicians in regions of the world where there are few psychiatrists, since their needs for psychiatric knowledge and skills are necessarily wider than areas where mental health services are more abundant.

A commonality across the globe is the recognition that resident trainees must be able to obtain a history from a patient and appropriately diagnose mental illness. In addition, trainees must have an understanding of disease processes at the root of mental illness, including what is known about etiology and pathogenesis, cultural factors, clinical course, and appropriate treatment interventions. The latter must be also understood and performed from biological, psychological, and socio-cultural vantage points. The governing body of a given country or region often outlines specific expectations in regard to this content, yet guidelines for content of psychiatric curriculum do not exist in every country.

The depth of curricular time devoted to specific topics also will vary based on the local conditions in a particular region of world where training is taking place. For example, a locale with a high prevalence of amphetamine abuse, or natural disasters, may spend more time focusing on these problems and their clinical implications, compared to regions where they are not prevalent.

Once the content of the curriculum is determined, the next step is deciding what teaching formats to use. Didactic teaching through classroom-based lectures is a major traditional method for imparting knowledge. With advances in technology, however, reliance on formal on-site lectures may become less critical as lectures are placed on-line for trainees to view at their own pace. This practice occurs already in a number of medical schools in various areas of the world. Similarly, tele-teaching, which permits instruction between two or more sites, often reduces the difficulties imposed by a lack of teachers or instructors in any given setting. In addition, these shifts may allow for time to implement more interactive means of teaching such as problem-based and team-based learning groups.

The phase-appropriate aspects of psychiatric education must be a consideration in the planning, implementation, and evaluation of both medical student and resident programs. For example, eliciting an appropriate clinical history is a more fundamental skill than learning how to administer complex medication therapy. Thus, when approaching the timing and amount of material being covered, it makes sense to logically map basic skills first and then layer the knowledge, covering more complex and specialized information as a trainee makes consistent progress. The recent implementation of the Milestones Project in the United States by their ACGME (2015) is one of the most current and comprehensive approaches to address acquiring competencies from a phase-specific learning development approach.

Once the undergraduate or postgraduate training requirements have been ascertained, teaching resources must be considered, including the number of available faculty and their scope of subspecialty expertise. Fewer faculty may hinder the provision of multiple simultaneous lectures across beginning and advanced training, while a large faculty often permits smaller group teaching. Where available, programs may choose to televise lectures via the web, while using live teaching for more interactive endeavors. Unfortunately, there are regions of the world where medical libraries are rare and accessing computerized literature searches may be challenging, if not impossible.

Although discrete information from lectures and reading provide basic knowledge, there are abstract levels of understanding and conceptual integration that must also be fostered. Ultimately, trainees are typically educated by the simultaneous and/or subsequent use of various teaching modalities. Struggling trainees at any level may require a more concrete and directive approach, while those with greater levels of learning capabilities or intellectual sophistication may benefit from more self-directed means.

Faculty supervision of the residents' and medical students' clinical work is central to all medical education and is historically the experience in which integration of knowledge, clinical skills, and attitudes occurs. However, the amount of and opportunities for the use of this modality will vary widely based on available resources. Relying on extensive supervision by senior faculty is a major challenge in areas of the world with a paucity of psychiatrists and/or other mental health professionals.

Group clinical conferences offer yet another teaching approach and provide better efficiency where faculty resources are suboptimal. Morbidity and mortality conferences, where cases with undesired outcomes are reviewed, journal clubs, and larger grand rounds all offer nonlecture-based educational opportunities. Group conferences also allow the exchange of information in a more active process and promote a higher level of integration of knowledge.

As an example of laying out a curriculum, the Royal College of Psychiatry's Curriculum for residents in the UK has recommended a modular approach to establishing a core curriculum (Royal College of Psychiatrists 2017).

The core module covers basic essentials in clinical psychiatry such as history taking, diagnosis, and treatment. With successful completion of this model, trainees study modules in specialty areas including adult, forensic, geriatric, child and adolescent psychiatry (including learning disabilities), and psychotherapy. Finally,

trainees study modules on addiction, rehabilitation, and consultation-liaison psychiatry. Within the UK's medical system, this process takes place over the course of 6 years. This is in contrast to other localities in the world where training may be as brief as 12 months. Thus, this modular approach may not be feasible or appropriate in every system, and certainly, if used, must be modified to suit the local context. The advantage of this framework, though, is that content and sequence can be determined for any curricular component at either the medical student or resident level, no matter what the desired content.

Once a curriculum course has been mapped, it must be implemented. Available faculty resources and national requirements often dictate the leadership and administrative requirements for training program oversight. National standards, for example, often mandate a specific individual to be the coordinator, a highly desirable practice regardless of requirements.

The program director for either students or residents oversees the development and monitoring of the curriculum's implementation. Sufficient faculty to provide onsite teaching as well as assisting in other educational modalities is necessary since both skills in education are needed for implementation of comprehensive teaching, mentoring, supervision, and professional guidance. When adequate faculty resources are not available, the program director's job becomes even more critical, as developing the needed faculty effort is essential for success in any clinical training program. One solution to paucity of faculty resources at either the medical student or resident level is the evolving use of either online teaching resources or live distance faculty teaching via teleconference approaches. While national requirements, technological, cultural, and language variations may be constraints on using this approach, pilot projects are being developed in a number of areas to better understand how the technology can be best used (Alfonso et al. 2018).

Maintaining a strong curriculum requires frequent and consistent reviews. There are continual advances within both undergraduate medical education and postgraduate psychiatric education, and the content and structure of the curriculum needs to reflect this evolution with regularly scheduled updates. Each of these changes requires the curriculum to be modified accordingly. Sustained quality also relies on identifying deficiencies and monitoring progress in plans and attempts to remediate them.

Effective evaluation of trainee performance requires thoughtful and ongoing feedback. Within both undergraduate and graduate training programs, this process relies on agreed upon outcome measures. Trainees should regularly evaluate didactic and clinical experiences. This feedback provides important information from those who are in training, either medical students or residents, to those evaluating the quality of their education.

Objective measures paired with faculty evaluations of trainees' performance should be used to accurately assess the effectiveness of the curriculum (Andrews and Lomax 1999). If trends in trainees' shortcomings and lack of skills become evident, one or several elements of the curriculum may need strengthening, curriculum content may require adjustment, or the characteristics of clinical rotations might be reevaluated. Quality training involves a cyclic approach to curricular

design, evaluation, and change. Some national requirements include specific guidelines regarding the cycles in which programs must undergo such reviews (Yudkowsky et al. 2002).

As already discussed, the duration of undergraduate medical education and psychiatric residency training varies around the world. Psychiatric residency training programs may range from one to six years. The shorter the training program, the more difficult it is to cover the entire field adequately, and decisions must be made regarding the breadth and depth with which material is covered. It is unreasonable to expect that a trainee will become clinically competent in a single year or two, but this time period may be all that is available. While the resources available may limit the amount of time to be used in training, it also must be acknowledged that this hinders the ability to easily train psychiatrists with equal skills or knowledge across all regions. There may be differences in competency levels of psychiatrists trained in various parts of the world, based simply on these factors. There is no ready solution for this problem, which becomes even more complex if we assume, as we must, that updating education programs is, ultimately, an unending endeavor.

Medical Student Training

When the WPA templates for medical student education were approved in 2011, the pressing need for treating mental disorders in both developed and developing countries was clear. Those guidelines, therefore, were developed with a view that ideally all physicians, especially primary care physicians, should know how to detect and manage these disorders from a bio-psycho-social perspective and when to refer them to a specialist. There was general consensus agreement that, *where possible*, all medical students should be trained in the areas of knowledge, skills, and attitudes regarding the diagnosis and treatment of psychiatric disorders noted in the following.

At the time of the WPA action, and still at present, however, there exists a robust debate about whether such expectations are reasonable and realistic in low- and middle-income countries. Because adequate faculty teaching capacity is quite limited for teaching psychiatry to medical students in such countries, and because there is not only a paucity of psychiatric specialists but also of primary care physicians, some argue that the expectations for medical students should be substantially limited from the recommendations below. Professor Parameshvara Deva in Malaysia is one of the leading proponents of a highly streamlined curriculum for medical students in low- and middle-income countries, and he has published his recommendations (Deva 1980, 2008).

Steps of the learning process for a medical student include the acquisition of knowledge, the dexterity in the use of specific skills, and the adoption of professionally appropriate attitudes as outlined below:

Knowledge

There is consensus in that, regardless of country, geographic region, or volume of resources, every medical student will have to demonstrate, by the conclusion of his/her educational process, the ability to: (1) organize clinical data from psychiatric interview and mental status examination allowing him/her to hypothesize reasonable psychiatric diagnoses and psychosocial circumstances or stressors; (2) develop thorough psychiatric differential diagnoses based upon information from and about the patient; (3) recognize the clinical characteristics of the following mental disorders: (a) major depression, (b) bipolar disorder, (c) dysthymia, (d) panic disorder, (e) generalized anxiety disorder, (f) Posttraumatic Stress Disorder (PTSD), (g) obsessive-compulsive disorder, (h) schizophrenia, (i) schizoaffective disorder, (j) personality disorders, (k) substance use disorders, (l) cognitive disorder, (m) somatic symptom disorders, and (n) attention-deficit/hyperactivity disorder (ADHD); (4) understand the parameters of ethical clinical practice.

Similarly, in the areas of laboratory and other types of testing (e.g., psychological tests), the student will have to be able to: (1) determine which tests are indicated based upon the patient's psychiatric presentations, (2) discuss the rationale for ordering the tests with the patient and/or family, and (3) recognize when tests provide abnormal or pathological results, including results related to medication compliance.

In order to generate an appropriate psychiatric case formulation and present plausible and comprehensive hypotheses about the etiopathogenesis, course and outcome of the patient's psychiatric condition, the student must know about: (1) biological factors, (2) psychological factors, (3) sociocultural factors, (4) spiritual factors, and (5) Patients' psychological strengths and weaknesses or barriers for adequate management.

The medical student should demonstrate the ability to: (1) recognize potential risks and psychiatric emergencies among general medical patients, including (a) suicidal thinking, (b) homicidal thinking, (c) signs of mental decompensation, (d) impulsivity and violence-proneness, (e) poor judgment or cognitive deficits, and (f) serious side effects to medications (1) neuroleptic malignant syndrome, (2) neurotoxic or cardiotoxic responses, and (3) overdosage; (2) demonstrate knowledge about medical and medico-legal interventions: (a) psychiatric referrals, (b) involuntary commitment, and (c) judgments of medical incompetence.

Skills (Interpersonal and Communication)

The medical student should demonstrate the ability to conduct a psychiatric interview, including (1) establish rapport with patients by properly introducing him/herself and defining the role the interview will play in the patients' care; (2) be empathic with patients, showing genuine concern for patients' moods, dilemmas, viewpoints, and conflicts through tone of voice, speaking style, facial expressions and gestures; (3) facilitate interviews with helpful blends of open and closed questions, supportive remarks, use of silence, and therapeutically oriented

interventions; (4) use language neutral to gender, age, race, sexual orientation, culture, and religion; and (5) conclude interviews with proper timing and respect.

The student will demonstrate the ability to elicit data for a complete psychiatric history, including (1) chief complaints in the patients' own words; (2) details for a thorough history of present psychiatric illness: (a) onset of symptoms, (b) duration of symptoms, (c) course of exacerbations and decreases of symptoms, (d) help-seeking patterns, (e) actions patients have taken to cope with symptoms, (f) impacts of symptoms on patients' lives, (g) patients' thoughts about causes for and meanings of symptoms, (h) patients' expectations for prognosis; (3) details for past general medical history and psychiatric history; (4) details for family and social history; (5) details for developmental history; and (6) details for substance use history.

The student will recognize indications for treatments of patients with mental disorders, including (1) psychotherapies: a. individual psychodynamic, cognitive, behavioral, and supportive b. marital and/or family c. group; (2) medications; (3) other somatic therapies; and (4) necessity for social, economic, or legal interventions.

The student should demonstrate the ability to provide coherent, thoughtful presentations of psychiatric patients in both oral and written forms, including (1) Patients' psychiatric histories; (2) mental status examinations data; (3) physical examination data; (4) data from laboratory and other tests; (5) differential and specific diagnoses; (6) psychiatric formulations (including cultural); and (7) treatment plans.

Attitudes

The medical student will demonstrate professionalism through the ability to: (1) be punctual and attend required events; (2) complete patient notes in a timely fashion with legible writing; (3) maintain professional boundaries (physical, sexual, financial, and emotional) with patients and practice within an appropriate ethical framework; (4) be truthful about medical data; (5) be courteous to patients, patients' families, staff, colleagues, and other health professionals; (6) maintain confidentiality regarding patient care; (7) demonstrate respect, empathy, responsiveness, and concern regardless of the patient's problems, personal characteristics, or cultural background; (8) demonstrate sensitivity to medical student-patient similarities and differences in gender, ethnic background, sexual orientation, socioeconomic status, educational level, political views, and personality traits; (9) demonstrate integrity, responsibility, and accountability in the care of assigned patients; (10) demonstrate scholarship by contributing to a positive learning environment, collaborating with colleagues, and performing self-assessment and self-directed learning; and (11) assess one's strengths, weaknesses, and be willing to seek and accept supervision and constructive feedback (Brodkey et al. 1997; Brodkey et al. 2005; Harper 2017).

Resident Education

As noted in sections above, there can be no single system proposed for utilization across the globe. National and regional training requirements, resources, the system of care, and cultural considerations all play a role in designing the resident training program. Further, the nature of the mental health component of the national array of medical education and practice plays one of the most important roles in program elaboration.

As described in a number of places in this chapter, there are generally substantial differences for program in low- and middle-income countries compared to those in high-income countries. One significant difference in the model of educational goals is what has been described as a public health model. This approach to structure and content of the residency program assumes that when there is a very small number of psychiatrists for the population size, the role of the psychiatrist will be more likely to serve in roles which will involve setting overall mental health policies and/or playing a more significant role in the planning and implementation of mental health services than in providing direct clinical service. The public health competency model described briefly below is based on this assumption.

Although resident competencies will be more extensive and graded on a more sophisticated level of expectations, all the competencies elucidated for medical students in the section above are relevant to training and educating the psychiatry specialist. As is true in all of medicine, the depth and breadth of the postgraduate experience is greater, and additional skills and knowledge are required in both clinical and administrative domains. Specialist training in psychiatry, for example, should also include depending on location, but is not limited to, sufficient didactic and clinical experiences to develop competency in:

1. The major types of psychotherapy
2. Somatic therapies (electroconvulsive therapy, biofeedback, phototherapy)
3. Understand the principles of and conduct clinical practice in an ethical manner respective of human rights
4. Psychiatric administration (leadership of interdisciplinary teams, quality assurance, and performance improvement)
5. Providing psychiatric care to patients who are receiving treatment from non-psychiatric physicians and nonmedical therapists and coordinating such treatment
6. Teaching psychiatry to medical students, residents, and others in health profession
7. Training in neurology to develop expertise in the diagnosis of those neurological disorders and conditions often encountered in psychiatric practice that must be considered in the differential diagnosis of psychiatric disorders.
8. Understanding the designing and interpretation of psychiatric research studies
9. Developing expertise in the critical assessment of new therapies and scientific theories
10. Participating in national professional and scientific societies especially through presentations at regional and national scientific meetings

To demonstrate specific aspects of the competency-based approach, three among many models that designate resident competencies will be described briefly. These include the UEMS, the United States ACGME, and an international public health approach. Educators and administrators are of course required to select topics, ideas, and approaches that are compatible with and practical for their own programs, countries, and regions.

European Union of Medical Specialties (UEMS) approach

The UEMS (2009) has proposed a general competency model wherein the psychiatric specialist must perform within seven diverse overarching competencies, adjusted to, but also independent of, working environment, including sociopolitical and cultural context. The role of the psychiatrist in this model could focus on one or more or a diverse range of work foci which includes caring for individual patients and their families or within a public mental health framework for the society at large. The UEMS Charter on Training of Medical Specialists in the European Union recently updated training requirements for the specialty of Psychiatry (UEMS 2017). In such context, the competencies of a fully trained resident can be described to include:

1. As a clinical expert, a psychiatry resident should be able to:
   (a) Elicit a comprehensive psychiatric, sociocultural, and medical history; (b) conduct a psychopathological investigation; (c) establish a diagnosis; (d) document properly the clinical findings and actions taken; (e) formulate and implement a treatment plan in collaboration with the patient, his/her family and other health professionals; (f) utilize the appropriate therapeutic skills; and (g) apply relevant medical technologies
2. As a health advocate, a psychiatry resident should be able to:
   (a) Appreciate the determinants of mental health in a given society and (b) promote mental health and prevent mental disorders in individual patients and society
3. As an academician, a psychiatry resident should be able to:
   (a) Formulate a self-addressed life long program of continuing medical education; (b) read scientific literature and interpret new findings; (c) investigate the determinants of mental health and disorders; (d) integrate and apply new knowledge and technologies in his/her daily work; (e) conduct research; (f) perform quality assurance and contribute to quality development; and (g) document epidemiological changes in psychopathology
4. As a professional collaborator, a psychiatry resident should be able to:
   (a) Establish treatment plans through working with patients and caretakers and (b) work effectively with other healthcare professionals including those in primary care

5. As an administrator/leader, ha psychiatry resident should be able to:
   (a) Develop cost effective treatment plans and mental health services and (b) utilize resources effectively
6. As a communicator, a psychiatry resident should be able to:
   (a) Establish a therapeutic alliance with patients and relatives; (b) educate the patient, families and other health and social services professionals; and (c) educate the public about mental health to combat stigma
7. As a professional, ha psychiatry resident should be able to:
   (a) Abide by ethical principles of the profession; (b) respect patient rights and broader human rights; (c) support patient autonomy and dignity; and (d) respect the patient's culture, beliefs, and values.

In this model, psychiatrists must identify and deal with the prevention, diagnosis, and management of urgent psychiatric conditions. Residents must develop skills in triage, often within multidisciplinary settings. Common conditions seen in emergency psychiatry include, but are not limited to, severe agitation and panic, some conversion reactions, acute psychotic episodes, poisoning and substance related intoxication or withdrawal, depression with severe suicidal ideation/suicide attempt, homicidality, some eating disorders, rape and other types of assault, child maltreatment, and disaster management. Based on a well-formulated treatment plan, psychiatry residents must be able to provide the least restrictive environment for intermediate care. Effective treatment, no matter the length, often requires sophisticated collaboration with primary care clinicians and social services/staff with clear goals of recovery and rehabilitation while being mindful of resources.

The United States Accreditation Council for Graduate Medical Education (ACGME) approach

The Accreditation Council for Graduate Medical Education (ACGME) in the USA has established for all medical specialties six general competencies expected of a new practitioner. Psychiatry programs must define the specific knowledge, skills, behaviors, and attitudes required and provide educational experiences as needed in order for their residents to demonstrate the following general competencies (ACGME 2007):

1. *Patient care* that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Each resident must receive supervised experiences in the evaluation of treatment of patients of all ages and gender from across the life cycle and from a variety of ethnic, racial, sociocultural, and economic backgrounds. These experiences must occur in hospital and outpatient rotations and include in addition to general adult psychiatry, assignments in child and adolescent, geriatric, addiction, consultation/liaison, forensic, emergency, and community psychiatry.

2. *Medical knowledge* about established and evolving biomedical, clinical, and cognate sciences, as well as their application of this knowledge to patient care. The didactic curriculum, for example, must include, but is not limited, to the following components: (a) the major theoretical approach to understanding the doctor-patient relationship; (b) the fundamental principles of epidemiology, etiologies, diagnoses, treatment, and prevention of all major mental disorders, including the factors that affect the prevention, incidence, prevalence, and long-term course and treatment; (c) comprehensive discussions of the diagnosis and treatment of neurologic disorders commonly encountered in psychiatric practice, such as dementia, neoplasms, headaches, traumatic brain injury, infectious diseases, movement disorders, multiple sclerosis, seizure disorders, stroke, and intractable pain; and (d) instruction in research methods in the clinical, biological, and behavioral sciences, including techniques to appraise the scientific and professional literature and to apply evidence based findings to patient care as well as opportunities to participate in research.
3. *Practice-based learning and improvement* that involves the investigation and evaluation of care for their patients, the appraisal and assimilation of scientific evidence, and improvements in patient care. This competency focuses on lifelong learning to improve knowledge, skills, and practice performance.
4. *Interpersonal and communication skills* that result in the effective exchange of information and collaboration with patients, their families, and other health professionals.
5. *Professionalism,* as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to patients of diverse backgrounds.
6. *Systems-based practice*, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Specific knowledge, skills, and attitudes should include but are not limited to: (a) practicing cost effective health care and resource allocation that does not compromise quality of care; (b) advocating for quality patient care and assisting patients in dealing with system complexities, including disparity in mental health care; (c) knowing how to advocate for the promotion of mental health and the prevention of disease; and (d) acknowledging the importance of medical errors and examining systems to prevent them.

Since the approval of the WPA templates (Tasman et al. 2011), the ACGME has implemented a new program in collaboration with the American Board of Psychiatry and Neurology (ABPN) which represents the next phase in competency-based education and training. This approach, called the Milestones project (ACGME 2015), places the learning and assessment of clinical and knowledge competency in a phase-specific developmental approach. This new approach marks an important jump to a more specific structure within which specific teaching approaches and competency acquisition can be targeted. This approach is in concordance with the

pedagogical efforts and work of Tasman and US colleagues in the span of the last four decades (Tasman and Rieder 1987).

The Milestones approach is too complex to review in detail, but it provides specific anchors to address 5 levels of competency across the period of training. These anchors are not designed to specifically address the year of training during which the competency will be acquired, but generally follow the progression across the years of training in what is a four year program in the United States. Level 1 denotes the most basic level of competency and level 5 marks a level of competency sufficient to teach it to others. It is not assumed that residents will generally reach level 5 skills or knowledge by graduation from training, but may acquire that level of competence in certain areas. (ACGME 2015). To illustrate the approach, three examples will be given.

The milestone for general interview skills under the psychiatric evaluation competency is arrayed as follows by level:

Level 1 Obtains general and psychiatric history and completes a mental status examination
Level 2 Acquires efficient, accurate, and relevant history customized to the patient's complaints
Level 3 Consistently obtains complete, accurate, and relevant history
Level 4 Routinely identifies subtle and unusual findings

The milestone for using psychopharmacologic agents in treatment under the somatic therapies competency is as follows by level:

Level 1 Lists commonly used psychotropic agents and their indications to target specific symptoms (e.g., depression, psychosis)
Level 2 Appropriately prescribes commonly used psychopharmacologic agents
Level 3 Manages pharmacokinetic and pharmacodynamics drug interactions when using multiple medications concurrently
Level 4 Titrates dosage an manages side effects of multiple medications

The milestone for empathy and process under the psychotherapy competency is arrayed as follows by level:

Level 1 Accurately identifies patient emotions, particularly sadness, anger, and fear
Level 2 Identifies and reflects the core feeling and key issue for the patient during a session
Level 3 Identifies and reflects the core feeling, key issue, and what the issue means to the patient
Level 4 Links feelings, behavior, recurrent central themes/schemas, and their meaning to the patient as they shift within and across sessions.

As can be seen from these examples, the levels shift at small but clear levels of sophistication, which can be generally easily seen during supervision or observation

of clinical care by the resident. While the US ACGME Milestones project is quite complex and detailed, the general approach and structure can be modified for the specific context of a residency program in any country. Further, it provides an excellent framework for evaluation that can also be modified for use with medical students.

A Public Health Approach

This model assumes that in regions where very few psychiatrists exist, there must be broader resident training experiences in preparation for roles in developing, implementing, and evaluating all aspects of mental health care and policy locally, regionally, and nationally. This model, therefore, also addresses training about the impact of civil and political unrest and natural disasters, to name but two areas not included specifically in the earlier approaches. Further, this model emphasizes that mental disorders are no less prevalent in low-income countries, as well as the increasing importance of mental health problems as epidemiological transitions from communicable to noncommunicable diseases take place. There is greater emphasis also on the link between mental health and personal and national poverty as reflected in educational, social welfare, and criminal justice issues.

In the public health approach, there is clear acknowledgment of the salience of mental health to the achievement of the majority of the objectives of the United Nations Millennium Development Goals by 2015 that include: (a) eradicate extreme poverty and hunger; (b) achieve universal primary education; (c) promote gender equality and empower women; (d) reduce child mortality; (e) improve maternal health; (f) combat HIV/AIDS, malaria, and other diseases; (g) ensure environmental sustainability; and (h) develop a global partnership for development.

Competencies in this model require that residents (1) have a clear conceptual understanding of the epidemiological information on prevalence, risk factors, and consequences of mental illness; (2) understand the contribution of mental disorders to global burden of disease; (3) understand the public health framework of mental health promotion, prevention, treatment, rehabilitation, and prevention of mortality; (4) appreciate the various components of social policy, health policy, mental health policy, and mental health service delivery, including the role of primary care; (5) appreciate human rights issues; (6) can diagnose and manage the common psychiatric disorders; (7) understand the principles of suicide prevention; (8) understand the definition and impact of disasters and their management; and (9) comprehend the importance of lifelong learning through familiarity with the characteristics of evidence-based psychiatry.

Integrated care is of essence to the public health approach. Although aspects of integrated care are usually taught in psychiatry residency in the ACGME approach within the constraints of consultation and liaison psychiatry rotations, in low- and middle-income countries more time should be dedicated to demonstrate the relevance of collaborative care. It would be sensible for psychiatry residents in countries with low- and middle-income economies to spend a large part of their clinical duties

providing supervised out-patient mental health services on site in primary care clinics, medical-surgical units, or community health centers (Alfonso et al. 2017)

Assessment and Evaluation of Medical Students and Residents

Whether at the medical student or resident level, the curriculum and training experiences must be developed and continually evaluated and modified to ensure the resident adequately learns both the knowledge base and the required clinical skills needed to become clinically competent. Just as for other components of the chapter, the reader is reminded that any evaluation system may require extensive faculty time and other resources. Thus, appropriate modifications will be required based on the location of the training programs including expectations in the institution or national standards. As should be apparent from the discussion above, the Milestones model provides a solid structure for how to design a resident assessment system. There will be a brief discussion of a model of competency-based evaluation which flows from the competency-based education model.

Competency-based evaluation is a much more structured approach to assessing clinical competence than has been historically utilized. Using an assessment system to measure professional clinical performance is very similar to making a complex or challenging diagnosis. When program directors and faculty are asked to assess whether a medical student or resident is competent to be promoted or to practice independently, an accurate determination requires multiple observations and methods of assessment just as in making a diagnosis of a complex or challenging patient.

By developing assessment systems to measure a student or resident's competency, we can improve the education of physicians and improve patient care. Accurate assessment of performance provides information not only about whether a medical student or resident is able to be promoted or practice independently, but also helps to identify gaps in educational programming. The following section on assessment draws heavily on the ACGME/ABPN Toolbox of Assessment Methods from the ACGME Outcomes Project (ACGME 2000) as well as from the Milestones project cited above (ACGME 2015).

There are several basic questions that any system of evaluation must address:

Did the student/resident achieve the objectives for the educational experience? The objectives of a rotation or other educational experience provide guidelines and a framework for what the resident is expected to know or be able to do by the end of that experience. Thus, assessment results provide evidence to support whether or not the trainee has acquired the needed skills or knowledge.

What knowledge, skills, or attitudes the students/residents need to acquire or improve? Assessment results identify the knowledge, skills, or attitudes that the resident needs to still acquire or improve. By providing constructive and ongoing feedback, the faculty can help guide the resident in implementing changes that will lead to performance improvement.

How might the medical student program or residency program use aggregate performance data to improve education? For example, in reviewing all of the evaluations done at the end of a particular clinical experience such as completing an inpatient psychiatric rotation, the faculty might determine that the trainees as a group are rated low in their understanding of basic psychiatric disease principles. This insight will help the training program make the needed modifications.

How can assessment results provide formative and summative feedback to the trainees? This helps students/residents in making expected progress in achieving the knowledge, skills, and attitudes outlined by the learning objectives.

Formative evaluation refers to an assessment whose primary purpose is to provide feedback during an experience in order to improve knowledge or skills. Summative assessments review performance at the end of an experience and are typically used to make a statement about whether a resident has mastered specific competencies, identify skills needing attention, and identify opportunities for program improvement.

In thinking about developing an assessment system, educators want to be certain that it is comprehensive and assesses what is needed. The reason for developing a system of assessments rather than relying on a single approach is that complex clinical skills and the delivery of medical care are not likely to be accurately measured by a single assessment tool or a single evaluator.

A competency-based learning and assessment program focuses on specific clinical competencies, which we expect medical students or residents to gain during the course of their training. One could construct long lists of such clinical competencies, but at the start the system should be manageable, and this is important in every part of the world, not only in low- and middle-income countries. Competency-based systems are reliant on multiple different teaching and supervision components, with assessments carried out in a systematic way over a period of time. There is no question that developing such a system requires significant resources, and this makes the development of such systems much more challenging in resource poor regions, especially when there are relatively few faculty available to be involved in the training program. Nonetheless, a competency-based program provides the best model that can be used to accurately assess resident's clinical performance.

Over the past several years, a variety of tools have been developed which can provide reasonable assessments of the knowledge base. The reader is again referred to the ACGME website at www.acgme.org where information about competency-based evaluation systems can be found. There is general agreement, however, that such assessments do not yet accurately predict independent clinical performance. Thus, there is an urgent need for further research to develop systems of assessment that provide reliable and valid information about a resident's clinical performance abilities.

The Importance of Educational Research

Medical education research was developed in the 1950s with the intent of making the education of physicians evidence-based (Hodges 2008). Education research in psychiatry should include areas of curriculum development, professional and leadership development, clinical supervision and evaluation processes (Weiss Roberts et al. 2003; Hatala and Guyatt 2002). In this chapter section, we will selectively summarize academic work in some but not all of these important areas.

Impact of Early Exposure to Psychiatry in Medical School

Although much emphasis has been placed in understanding the variables that correlate with increased recruitment of medical students into psychiatry, the percentages medical students choosing psychiatry seem to remain stable over time across continents. Although a low recruitment rate is often perceived to correlate with negative attitudes, other factors may be impactful and significantly correlated. These include reports of students choosing psychiatry because of social background, liberal political views (Eagle and Marcos 1980), interest in the humanities, having specific personality factors, academic aptitude, and history of family psychiatric illness (Rajagopal et al. 2004). Positive experiences during clinical rotations, however, always seem to correlate with improved attitudes towards psychiatry (Budd et al. 2011) and may determine to some extent career choice (Farooq et al. 2013).

Incidental findings in many studies that focus on recruitment, however, show that negative professional stigma is effectively diminished when students have positive and early exposure to psychiatry during their undergraduate medical education. In one recent study in the UK, early clinical experiences of psychiatry increased awareness and understanding of the field and reduced the potential for misunderstanding and misconceptions of psychiatry (Brown et al. 2015). More positive experiences in medical school that include early exposure to enthusiastic and talented psychiatrists-teachers may help reduce stigma and lead to more positive views of psychiatry.

Determining the Sequence of Residents' Training Experiences

Traditionally, as far back at least as the early 1900s, psychiatric residents, just as those in nearly all other specialties, have begun their training with an extensive amount of time taking care of hospitalized patients. This was done historically for very pragmatic reasons. There were few organized systems of ambulatory care and the need to treat severe illnesses within a hospital setting was much more important due to the state of knowledge in those days. Thus, all residency programs were heavily focused on hospital-based practice. The second half of the twentieth century began a period of dramatic changes in both health care systems and postgraduate medical education. Certainly, the modern psychiatric training programs of today in

nearly every country in the world barely resemble those which existed in the first half of the twentieth century, due to changes both in systems of care and in the knowledge about illness and available treatments.

Within psychiatry, there have been ongoing debates over the proper sequence of clinical experiences. In the United States, there was considerable debate among academic leaders about whether or not the optimal approach to psychiatric education involved beginning with the most severely ill patients in the most intensive care treatment settings. One of the reasons for this debate lay with the view that gaining a developmental perspective on psychopathology was deemed to be a crucial issue in the determination of proper care decisions. In a small number of programs in the United States, residency clinical sequences were put into place to emphasize a developmental perspective on psychopathology. Such programs often began not with emergency or adult hospital care, but with child psychiatry experiences, often in an ambulatory setting.

Research in this area is important since the sequence of training experiences may have an impact of residents' performance in the areas of diagnostic skills, comprehension of the range of prominent inpatient psychopathology, comprehensions of the range of appropriate therapeutic interventions, and the development of professional psychiatric identity.

An early study (Tasman 1991) addressed educational gains and gaps in relation to the sequence of clinical rotations in a psychiatry residency program. Specifically, having an ambulatory year with strong child psychiatry emphasis prior to an inpatient year treating acutely ill hospitalized patients led to small, but definite *educational gaps* for residents later in training. Residents who work in acute care first, before moving on to ambulatory care rotations, seem to fare better in terms of *educational gains* (Tasman 1991).

Measuring the Impact of Adequate Clinical Supervision

An important aspect of pedagogical research is to study the impact of clinical supervision in residents looking at both educational outcomes and improved patient care. Accessing qualified supervisors, preferably on-site, has been shown to improve patient care and education-related outcome measures, across all medical specialties for physicians in training (Farnan et al. 2012). When supervision is accessible on site, measurable improvements in clinical outcomes occur. These findings resulted in the systematic implementation of regulations in inpatient and emergency clinical settings mandating enhanced supervisory oversight in the USA and other high-income countries. In low- and middle-income countries with a paucity of attending supervisors, qualified supervisors need not be licensed or board-certified senior clinicians, as senior resident and junior resident supervisory dyads may also result in improved clinical care. Additionally, off-site tele-supervision is receiving increased attention in the psychiatry education research arena.

Video-Supervision to Bridge Educational Gaps in Underserved Countries

International academic partnering using videoconferencing has been widely used to bridge training gaps of psychiatric residents who reside in low- and middle-income regions of the world. Examples include collaboration between the University of Colorado School of Medicine and the University of Health Sciences Cambodia (Savin et al. 2013) in the form of monthly case conferences, and two and four year training programs offering psychotherapy training through the China American Psychoanalytic Alliance (CAPA). CAPA formally established training for mental health professionals in China including psychiatrists (Fishkin et al. 2011). Training currently spans over 25 Chinese cities, with a faculty of over 150 volunteer faculty members from high-income countries teaching using videoconference technologies. Hundreds of psychiatrists have graduated from the programs since 2008.

The WPA Psychoanalysis in Psychiatry, Psychotherapy, and Education Sections piloted a program over five years in Southeast Asia (Alfonso et al. 2018). This program included a one semester advanced psychodynamic psychotherapy-training course that was specifically tailored for psychiatric residents and early career psychiatrists. The collaboration between the USA, Thailand, Malaysia, and Indonesia combined on-site with videoconferencing and computer-assisted learning. Although virtual classrooms have significant pitfalls, resident satisfaction usually outweighs the vicissitudes of fluctuations in Internet connectivity (Alfonso et al. 2017; Cameron et al. 2014).

A systematic review examined the perceptions of physicians about clinical supervision and educational support using videoconferencing technologies. This meta-analysis examined 1288 studies and found overall satisfaction and acceptance rates in a majority of settings, with reports of improvement in knowledge and practice outcomes (Cameron et al. 2014)

Opportunities for Research in Education

While there has been a growing body of literature focused on psychiatric education, good educational outcomes research is in its infancy and significant growth in this area of scholarly endeavor would be extremely important to ensure that residents have training experiences which maximize the likelihood that they will have the knowledge and skills to provide competent care.

The journal *Academic Psychiatry* in the United States is one of the few globally available sources in psychiatry, which encourages through its stated publication mission the carrying out of educational research. Further, conducting educational research is much more difficult because of a wide variety of methodological problems. In addition, there is little funding available to support such research even in the most highly developed and resource intensive countries. Thus, there is a necessary and ever increasing emphasis on continued revision of local and national standards that training programs optimize their curricula and training to ensure the greatest

likelihood of graduating clinically competent clinicians. At the same time, few resources are available and methodologies need to be developed to foster more education research.

Conclusion

The authors propose that educational programs should be designed or revised taking into account the cultural context at large of the clinical populations served and host country, using a biopsychosocial approach as a framework to provide care and educate medical students and residents. Although there can be no single universal educational system proposed for utilization across the globe, existing curricular paradigms may be used as points of reference for educational purposes. National and regional training requirements, resources, the system of care, and cultural considerations all play a role in designing medical student and resident training programs. Innovative programs already in existence and described in this chapter can be replicated or modified to better fit the needs of students and residents in low- and middle-income countries with high work volume and few resources. Efforts should be placed in the thorough assessment and evaluation of pedagogical methods not to compromise the effectiveness of educational programs and to better achieve adequate educational competencies. The importance of educational research cannot be emphasized enough, as it is a fertile ground to make education practices evidence-based in psychiatry.

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