

Research and Theory

Special issue: Infrastructures to support integrated care: connecting across institutional and professional boundaries -

The interdependence of behavioral and somatic health: implications for conceptualizing health and measuring treatment outcomes

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Abstract

Purpose: The interdependence of behavioral and somatic aspects of various health conditions warrants greater emphasis on an integrated care approach.

Theory: We propose that integrated approaches to health and wellness require comprehensive and empirically-valid outcome measures to assess quality of care.

Method: We discuss the transition from independent to integrated treatment approaches and provide examples of new systems for integrated assessment of treatment outcome.

Results: Evidence suggests that support for an independent treatment approach is waning and momentum is building towards more integrated care. In addition, research evidence suggests integrated care improves health outcomes, and both physicians and patients have favorable impressions of integrated care.

Conclusions: As treatment goals in the integrated perspective expand to take into account the intimate relationships among mental illness, overall health, and quality of life, clinicians need to develop outcome measures that are similarly comprehensive.

Discussion: Increased recognition, by researchers, providers, and insurers, of the interdependence between behavioral and physical health holds great promise for innovative treatments that could significantly improve patients' lives.

Keywords

integrated care, mental health, quality of care

Introduction

The frequent co-occurrence of behavioral and somatic disorders e.g. [1,2,3], argues for comprehensive conceptual models of health, illness and treatment. Rather than considering any health condition (behavioral or somatic) as an isolated circumstance, providers need to take into account the impact of the condition on a patient's quality of life, overall functionality, social relations, and general health. The interdependence of the behavioral and somatic aspects of various health conditions warrants greater emphasis on an integrated care approach. In this paper, we expand this line of reasoning and propose that integrated approaches to health and wellness require clinically meaningful outcome measures for assessing quality of care that are similarly comprehensive. We suggest that without taking into account an empirically-valid integrated approach, we will handicap our ability to fully evaluate treatment outcomes.

Four primary bodies of evidence indicate the need for comprehensive models of illness and integrated treatment plans: (1) the overlap between behavioral and physical health; (2) the evidence of physiological relationships between behavioral and physical health; (3) the often unintended impacts of limited treatments to one type of illness or the other; and (4) the shared effects of general wellness efforts on behavioral and physical health. One consequence of such expanded systems (i.e. comprehensive models and integrated treatment) is that treatment outcome measurement will need to be similarly inclusive. An important rule taught all health care providers during training is *primum nil nocere*: "First, do no harm." Thus, the measurement of outcomes needs to take into account integrated practices and ensure that these practices "do no harm." More comprehensive health outcome measures have the potential to improve existing treatment practices by allowing evaluation of those practices and identifying those practices that are most effective for particular patient population segments.

Evidence for the interdependence of behavioral and somatic health

Researchers have found strong overlap between behavioral and physical health problems. One study estimated that between 50 and 70 percent of a primary care physician's normal caseload consists of patients who require behavioral health care [4]. Another more recent study found that of the 40% of a typical caseload that physicians refer to mental health professionals; only 10% of patients follow up and get appointments [5]. In a study of adolescent patients in

non-psychiatric hospital departments, 34.2% were also considered psychiatric cases, 51.8% of those requiring psychiatric consultation or inpatient referral. Only 33.3% of this group of psychiatric cases received the help they required [6]. Another study found that physical health providers prescribed nearly one-third of the antipsychotic prescriptions written for children [7]. These practice statistics indicate that behavioral disorders spill over into the practice of physical medicine, and are insufficiently addressed. Emerging research suggests that the converse also is true: physical ailments spill over into the treatment of mental illnesses. In a study of 42 outpatients in psychosocial rehabilitation, 93% had at least one medical problem, e.g. [8]. Regardless of the pathogenesis of co-occurring mental and physical disorders, comorbidity has profound implications for treatment and estimating treatment outcome. To further probe the interdependence of mental and physical health, we briefly review evidence from four primary research domains: (1) co-occurrence; (2) physiology, (3) iatrogenic effects, and (4) wellness.

Co-occurrence of mental and physical health

Evidence demonstrates that behavioral health care (BHC) users are often disproportionately high users of general health care (GHC). Examples include people with schizophrenia, which is associated with elevated rates of autoimmune disease [9], people with anxiety disorders (e.g. panic disorder, social phobia, specific phobia, generalized anxiety disorder, agoraphobia, obsessive-compulsive disorder), which are associated with thyroid disease, respiratory disease, gastrointestinal disease, arthritis, migraine headaches, and allergic conditions [10], children with mental disorders such as attention deficit hyperactivity disorder, who make more frequent emergency medicine visits [11], and people who seek treatment for cirrhosis of the liver due to alcohol abuse [12]. Individuals with schizoaffective disorders are also more likely to suffer from metabolic syndrome (i.e. multiple metabolism-related conditions, such as obesity, high blood sugar, and high cholesterol [8]). It is important to consider the magnitude of the overlap of behavioral and somatic disorders because these co-occurring problems can complicate the patient's treatment seeking, treatment adherence, and/or effective management of problems.

Evidence also suggests that some physical disorders elevate individuals' risk for behavioral health disorders. For example, several studies have noted an increased prevalence of depression among individuals with diabetes compared to the general population

[13,14,15]. Though the degree to which depression and diabetes are linked is not fully understood [15,16], one study showed that treatment for depression in individuals with comorbid diabetes improved not only quality of life but also had a significant impact on the course of their diabetes [16]. The prevalence of mental disorders also is elevated among individuals who have epilepsy [17], among children who have asthma [2], and among brain tumor patients [18]. Numerous studies have associated cardiac illness with mental disorders, and noted the significant impact of comorbidity on the course and complexity of treatment, e.g. [19–22]. For example, one study [1] found major depression in nearly half of the individuals who were hospitalized after a myocardial infarction (MI). Post-MI patients who also are depressed are less likely to follow post-event medical instructions [23] and have a significantly greater death rate than post-MI patients who are not depressed [21]. This body of research serves as an evidence base for the importance of treating co-occurring behavioral health disorders as part of the routine care of physical illness.

Physiological interdependence of mental and physical health

The causal relationship between behavioral and physical health disorders is often unclear. However, some research indicates that a few mental disorders might share a physiological relationship with specific somatic disorders. For example, low serum levels are associated with suicidal behavior [24] and high cholesterol levels are associated with bulimia nervosa [25]. Other evidence for a physiological link is that the location of a brain tumor in the frontal region is a strong predictor of the development of major depression [18]. Similarly, brain dysfunction in Parkinson's Disease patients is believed to result in depression [26]. Other research suggests that depression and cardiac disease share similar genetic substrates. For example, Bondy et al. found that two genes associated with depression also are associated with risk for MIs [27]. These studies illustrate the interdependence of behavioral and somatic symptoms and underscore the importance of integrated care.

Iatrogenic effects

The co-occurrence of behavioral and physical health disorders has important implications for treatment progress; evidence is emerging that treatment itself can provoke interesting, unintended consequences, both positive and negative. For example, the treatment of psychotic disorder with clozapine is associated with impaired glucose tolerance and glycemic peak delay

[28], and increased triglyceride levels [29], increasing patients risk for diabetes and heart disease. Prescribed psychoactive medications can have dire effects for the patient. For example, the interaction of cardiac lesions and psychotropic drugs is indicated in the sudden death of some psychiatric patients [30]. Finally, treatments for seemingly disparate disorders also can produce positive outcomes, such as the finding that bupropion, an anti-depressant, reduces fatigue among cancer patients [31]. Similarly, post MI patients who use selective serotonin reuptake inhibitors have reduced risk for future cardiac problems [32]. The range of potential iatrogenic effects of treatment highlights the importance of tailoring type of treatment to the unique behavioral and somatic needs of patients, and the need for careful monitoring of outcomes.

Wellness

The concept of wellness is integral to aspects of the three aforementioned research domains: co-occurrence of mental and physical health, physiological interdependence of mental and physical health, and iatrogenic effects. An example of the co-occurrence of mental health and physical health is the extensively studied physical problems and behavioral disorders among individuals who have unhealthy weight. Numerous studies indicate that there is a strong relationship between being overweight and having a behavioral disorder, e.g. [33–36], though there is some debate whether these findings apply to non-clinical populations [37]. Longitudinal research supports the relationship; one study showed that conduct disorder during adolescence, for instance, is related to high Body Mass Index during adulthood [38]. Fortunately, research suggests that wellness-oriented interventions for weight and diet that encourage exercise and healthy eating habits are common [39]. Wellness promotion can have a positive effect on patients' health. For example, Ransford and Palisi's study [40] of data from the National Survey of Personal Health Practices and Consequences found that aerobic exercise (e.g. swimming, walking, jogging, and dancing) improved subjective health and psychological well-being. The effect was stronger for older persons than younger individuals.

Prototypical wellness efforts are likely to be particularly helpful for individuals with behavioral disorders. Individuals who have a mental illness are more likely to smoke [41], be overweight, fail to exercise, and consume excessive levels of alcohol and salt [42], placing them at considerable cardiovascular risk. Individuals who have a mental illness also are less likely to participate in preventative screening [42]. Therefore,

interventions targeting precursors to these unhealthy behaviors could improve both well-being and physical health. Just as improving wellness behavior can improve behavioral disorders, treatment of mental disorders through counselling can improve wellness behavior. Depression counselling was found to promote exercise among elderly diabetes patients with comorbid depression [43]. Moreover, wellness interventions encourage healthy lifestyle behaviors without the unwanted iatrogenic effects of some pharmacologic treatments, and might help by preventing future onset of mental and physical illness.

Change in illness model: from discrete to comprehensive

Traditional diagnostic systems tend to consider disorders in isolation; however, contemporary mental illness models are providing more encompassing definitions of health and disorder. Perhaps the most widely recognized traditional system for defining mental disorders is the American Psychiatric Association's Diagnostic and Statistical Manual (DSM). First published in 1952, DSM-I marked the earliest acceptance of an official nosology to classify mental disorders in treatment settings [44]. The DSM system, therefore, represents a significant advance over the diagnostic disarray that preceded it. Although DSM criteria have improved over time, in many ways the criteria—past and present—continue to reflect a discrete, Aristotelian approach, i.e. the essence of a phenomenon presumably resides in its accurate categorization [45], to assessing mental health [46]. The diagnostic system still operates in terms of symptom checklists for particular disorders (e.g. mood disorders, personality disorder, etc.). More recently, however, clinical research has adopted an increasingly rich and sophisticated understanding of the nature and progression of mental illness that integrates overall health. Future diagnostic systems will need to reflect this approach. In the next section, we discuss several examples of such integrated approaches.

Examples of integrated clinical perspectives on mental illness and overall health

Noting the high degree of co-morbidity among certain mental disorders, researchers such as Krueger and colleagues [47], have suggested the conceptualization of psychopathological problems not as discrete diseases, as reflected in the DSM, but rather as expressions of two basic latent states—externalizing problems (e.g. conduct disorder and substance use

disorders) and internalizing problems (e.g. mood disorders and anxiety states).

Recent research at the Division on Addictions is illustrative of an integrated conceptualization of mental illness and overall health. This research argues that addiction is a higher order construct (i.e. a syndrome) that encompasses a broad range of behavioral excess [48]. This model suggests that biological, social, and psychological factors place individuals at-risk for the development of addiction. It also suggests that addiction itself has important biological, social, and psychological consequences that different expressions of addiction share in addition to those that are unique to chemically-expressed (e.g. alcohol dependence) and behaviorally-expressed (e.g. pathological gambling) addiction. Viewing addiction as a syndrome obligates providers to assess multiple treatment-related outcomes in treatment practice, and not just symptoms of a single disorder. Healthcare workers, using this model would focus on developing comprehensive treatment plans aimed at screening for multiple addictive behaviors and addressing symptomology shared by multiple addictions displayed rather than treating individual symptoms of specific addictions in isolation. This syndrome approach requires clinicians to develop multidimensional treatment plans that account for the many relationships among the multiple influences (e.g. biological factors, family history, socioeconomic status, and environmental influences) and consequences (e.g. failure to maintain employment or social ties, increased risk taking behavior, and involvement with the criminal justice system) of addiction.

Change in treatment approach: from independent to integrated

Evidence suggests that support for an independent treatment approach is waning and momentum is building towards more integrated care [49]. Although educational, philosophical, and economic barriers likely ensure that a full transition from independent practice to integrated approaches will take a long time, health care professionals have begun to acknowledge that specialists from a variety of disciplines need to collaborate in the treatment of the somatic and mental components of patients' overall health simultaneously. Integrated approaches also might include the provision of lifestyle interventions such as the use of exercise to help patients better manage their particular constellation of symptoms and disorders [40], with a beneficial impact on both physical and mental health. A key component of integrated health care is co-location of services [5] when feasible, to facilitate communication and treatment coordination between

providers with different specialties. However, co-location of services does not ensure effective or frequent inter-provider communication [50].

Research evidence demonstrates that integrated care improves health outcomes [51]. For example, counselling can reduce use of emergency primary care visits for children, increase immune system functioning of cancer patients, and boost pregnancy rates among women who have difficulty getting pregnant [5]. Lustman et al. [16] found that antidepressant medications as well as psychotherapy improved glycemic control of diabetic patients. They found cognitive behavioral therapy had a more favorable long-term outcome than medication; however, they note that treatments bringing consistent improvement to both depression and diabetes have not yet been established [16]. Post traumatic stress disorder that develops in response to a breast cancer diagnosis is reduced with counselling [3]. Among cancer patients with a life expectancy of at least 12 months, cognitive-behavioral therapy (CBT) has been associated with decreased pain [52], reduced symptomatic distress, and subsequent improvement in cellular immune function [53].

Physicians have favorable impressions of integrated care. Those involved in an integrated system reported better communication between primary care physicians (PCPs) and mental health practitioners, less stigma for patients, and better coordinated care [51]. In the same study, the majority of physicians reported that integrated care led to better outcomes for patients with depression, anxiety, and alcohol problems.

Patients have similarly favorable impressions of integrated care. A two-year follow up of patients randomized to integrated care or treatment as usual indicated that the groups did not differ in clinical morbidity, but the integrated care group reported better social functioning and consumer satisfaction [54]. Although additional research is warranted, this improved consumer satisfaction and social functioning could lead to better patient compliance, development of more social support networks, and improved long-term health outcomes.

Examples of integrated care treatment systems: Kaiser Permanente and Cherokee Health

Integrated care programs have existed for at least 25 years. For example, developed in 1977, the Kaiser Permanente's Northeast Division (formerly Community Health Plan) had a founding staff that included medical practitioners, psychiatrists, psychologists, social workers, and substance abuse counsellors [55].

The Kaiser system specializes in integrated care and programs. To illustrate, Kaiser Permanente routinely provides counseling for patients who have a terminal illness [55]. The system also employs medical and behavioral health practitioners to work together on shared professional interests, such as effective patient/provider communication. Hence, system integration operates at multiple levels, including patient care, professional development, and even research. For example, the Lifestyle Modification Program used in the Kaiser system requires participant involvement over a 3–6 month period in adopting a low-fat vegetarian diet, participating in yoga classes and weekly exercise sessions monitored by a physiologist, following an individualized exercise program, and attending weekly educational classes and support groups. Weekly classes cover topics such as anger management, the connection between stress and coronary artery disease, and low fat cooking. Statistical analyses of pre and post program tests revealed improved physical and mental health among individuals who reported chronic disorders (e.g. irritable bowel syndrome and rheumatoid arthritis), as well as reduced health care utilization [55].

Another example of an integrated health care system in action is the Cherokee Health System. Because primary care providers see a diverse group of patients and often do not have time to screen patients for behavioral disorders, the Cherokee Health System employs behavioral change experts as part of the primary care health team [49]. Behavioral experts are able to recognize patients who have somatic complaints potentially masking behavioral problems that might go unnoticed by providers without specialized behavioral training. For example, a patient with multiple somatic complaints such as sleep disturbance or stomach pain might be suffering from depression. Early recognition of patients' behavioral problems allows practitioners to intervene with appropriate recommendations for therapy. This integrated system places equal importance on somatic and physical complaints, and the collaboration in services offered by the Cherokee system providers is likely better equipped to meet the specialized needs of their patient population than traditional systems without integrated care. These case reports from the Cherokee system illustrate another example of the positive effect that integrated care can have for both patients' overall well being and practitioners' professional development.

Change in treatment outcome measurement: from symptoms to systems

Recognizing the importance of integrated models of illness and integrated care plans, however, is

insufficient to assure optimal patient care. As conceptualizations of illness and treatment practices have evolved into integrated care, more comprehensive methods and measures for evaluating treatment outcomes must be considered to ensure quality care. Furthermore, outcome measures that are adapted to integrated care are necessary for researchers to conduct more comprehensive outcomes studies, such as analyzing which types of care are most beneficial for patients with certain constellations of symptoms. The systematic use of more appropriate outcome measures and improved data collection systems would therefore open the door to continued improvements in the quality of patient care.

Health care researchers and BHC organizations have used various methods to measure quality of care. Behavioral health practitioners generally have recorded changes in symptoms or behaviors in narrative progress notes on a case-by-case basis, rather than using quantifiable measures. A few exceptions have been used, notably the Global Assessment Scale which measures overall level of psychiatric illness [56], and the Goal attainment scaling that measures the degree to which a patient has met their goals [57]. Such quantifiable measures permit comparisons across patients and analyses of variables that impact outcomes. Health services researchers typically have relied on utilization patterns (e.g. rates of re-hospitalization or dis-enrollment) as proxies for outcome measures. However, the use of such measures is unlikely to reflect accurately the quality of care, e.g. [58].

Unfortunately, assessing mental health status or quality of life is not as clear-cut as in the prototypical GHC model. In GHC, practitioners, patients, and researchers often define wellness by a biological marker or observable symptoms (e.g. lipid level or blood pressure). In contrast, the definition of wellness for mental disorders is much more subjective. Moreover, wellness is relative because it is dependent upon the perspective of the patient and/or practitioner. The assessment of behavioral problems relies on observed or reported symptoms and impairments in functioning; unfortunately, there is no completely objective measure for determining whether someone is depressed. This prevents treatment providers from directly detecting an individual's disease state and forces them to rely on tacit signs or self-report of mental disorders.

Furthermore, some existing symptom-focused methods (e.g. DSM) might be problematic because criteria for specific mental disorders might arise either from the mental disorder or from a related co-occurring condition (e.g. stroke patients and individuals who suffer from depression both might satisfy the criteria for "diminished ability to concentrate or make

decisions") [59]. This diagnostic ambiguity is particularly problematic when viewed in the context of mental and physical health integration.

Proposed changes in outcome measures

One way to assess the quality of health care is to measure patient outcomes as these relate to the goals of treatment. As discussed earlier, treatment goals traditionally have focused on a narrow, symptom-focused conception of mental illness. The manner in which providers, as well as researchers who have conducted clinical trials of psychotropic medications, have typically assessed treatment efficacy reflects this approach. For example, a short-term (e.g. six months or less) change in scores in a disease-specific symptom checklist, such as the Hamilton Rating Scale for Depression or the Yale-Brown Obsessive-Compulsive Disorder Scale, often measures the success of treatment [60,61]. Also, providers generally have assessed treatment outcomes exclusively in terms of the index episode, without taking into account the treatment's impact on the long-term course of the illness.

As treatment goals in the integrated perspective expand to take into account the intimate relationships between mental illness, overall health, and quality of life, clinicians need to develop outcome measures that are similarly comprehensive. Based on a comprehensive review of randomized controlled trials of depression screening in primary care settings, e.g. [62], the US Preventive Services Task Force recommends depression screening in primary care settings with systems in place to assure accurate diagnosis, effective treatment, and careful follow up [63]. According to this recommendation, even very brief screenings can be effective outcome measures. Therefore, clinicians' choice of outcome measure should fit the patient population and clinical setting. Treatment goals can incorporate patient as well as provider perspectives in order to address quality of life, functionality, and other needs that the patient considers to be most important. Additionally, assessing longitudinal outcomes is an important part of measuring the treatment effect and any sequelae that might develop later.

Providers should consider several other changes consistent with a comprehensive treatment outcome system. For example, providers could collect information pertaining to lifestyle and behavior changes related to the management of diseases. In addition, information regarding patients' understanding of their illness and treatment plans could be very useful in overcoming potential barriers to treatment adherence, especially for members with behavioral health conditions that affect their motivation and/or cognitive functioning.

BHC providers might consider proactively obtaining systematic measures of physical health—such as pain estimates, medicinal side-effects, and other symptoms—that could potentially disrupt existing treatment plans. Finally, providers could place a greater emphasis on follow-up measures, for example, indicators of remission and its duration relative to specific symptoms or disorders as well as overall health status, work/school performance, and quality of life.

Examples of integrated assessment for treatment outcome

The notion of comprehensive mental and physical health assessment is not new, e.g. [64], yet, few practitioners routinely use systematic assessments of treatment outcome, let alone comprehensive systematic assessments. There are many ways in which providers can assess health comprehensively. These strategies include employing: (1) multiple instruments, e.g. [65], (2) single comprehensive surveys, e.g. [64], or even (3) single-item measures, e.g. [66].

Integrated assessment is gaining popularity. For example, the 12-item Short Form Health Survey (SF-12) is a functional outcome measure that includes both a physical and a mental health component. It was developed for the Medical Outcomes Study, a multi-year study of patients with chronic conditions [67]. The SF-12 enables group comparisons of multiple dimensions of health, as well as components that reflect the integration of physical and mental symptoms such as quality of life and functionality. Although some might think that 12 items are likely the minimum needed to estimate overall health, more recent research suggests that this lean approach can be even more efficient. Two single items (i.e. “In general, would you say your health is...*excellent...or poor*” and “Compared to others your age, would you say your health is... *excellent...or poor*”) have reliability and validity levels comparable to derivations of the Short Form Health Survey [66]. More extended surveys, however, might be useful in some circumstances since they will provide more nuanced and detailed information about the specific problems of patients.

Recent initiatives at ValueOptions also have targeted the integrated assessment of treatment outcome. In May 2004, ValueOptions’ Massachusetts Behavioral Health Partnership (MBHP) launched a state-wide best practices and outcomes management initiative for the Medicaid behavioral health provider network. The preferred instrument for this initiative, the Treatment Outcomes Package (TOP) (www.bhealthlabs.com), assesses a comprehensive set of symptom, functioning, and quality of life measures that

reflect overall health. Some of those measures include: “been satisfied with your daily responsibilities” and “missed work or school for any reason.” One practical benefit of TOP is that it provides a score while the patient is in the office, so that providers can use it to assess the success of treatment, just as a medical practitioner uses blood pressure. Providers voluntarily share aggregate data with MBHP in order to better understand the course of treating disorders, identify and promote best practices, and improve accountability for publicly funded behavioral health services.

Discussion

The interdependence and frequent co-occurrence of behavioral health and somatic disorders requires treatment providers of all disciplines to become more aware of the importance of integrating both types of care into treatment plans. Changes to the theoretical characterization of health and the development of more comprehensive health care treatment strategies reflect early efforts to meet this requirement. These transformations, however, also require a change in the way that researchers and others assess quality of care and treatment effectiveness. Health care outcome measures intimately connect to the conceptualization and treatment of illness. Therefore, as science progresses and illness models evolve, outcome measures will need to adjust to reflect these changes. Conversely, changes to outcome measures will continue to inform the nature of illness models.

Although expanding treatment outcome measures is theoretically sound, there are several practical barriers to such an initiative. To our advantage, few behavioral health treatment providers currently perform treatment outcome assessment using a standardized, quantifiable method. Therefore, it is unlikely that providers will resist a new treatment outcome measurement initiative due to the disruption of an existing system. However, there will be some resistance to the additional time or resource requirements of a new initiative. Practitioner involvement in the process of change will be essential to reduce this barrier. So too will the installation of systems that provide immediate diagnostic feedback, such as TOP, or the DOA diagnostic report generator [68].

The implications of expanding the underlying concept of health to include physical health and mental health, as well as overall quality of life and wellness are wide-ranging. An expanded conceptualization of health raises the possibility of mental health wellness checkups. People visit primary care practitioners annually for physical health check ups. Presumably, such a

primary prevention strategy ensures savings in future health care costs, by precluding the development of an illness altogether or detecting it earlier in the disease process. In this sense, we recommend that primary care providers should be more active in screening for a full range of mental health and substance abuse disorders—because primary care providers often serve as the first line of defense in this area. Furthermore, a great deal of mental health treatment is delivered outside of the specialty BHC system. The integration of mental health wellness checks either within or in addition to traditional physical checkups could reap similar protective and preventive benefits, as well as facilitate appropriate referrals of complex cases to specialty behavioral health providers.

An expanded conceptualization of health also could have implications for the structure and systems of health insurance. Currently, “carve-out” managed care organizations provide the majority of behavioral health services, and the need for integrated care could be interpreted as an argument against “carve outs.” Proponents of the “carve-out” architecture for health care systems state that well-developed specialty management, similar to pharmacy, can achieve integration while capitalizing upon their expertise in treating complex behavioral health problems. However, integrating BHC and GHC is a process and not a structure. As a consequence, the expanded conceptualization of health requires the development of new processes that facilitate better linking between separate physical and behavioral health care modalities, as well as new protocols within each of these modalities. The most critical changes to achieve integration might actually need to occur within the service delivery system. Therefore, both physical and behavioral health care practitioners must be encouraged—or possibly required—to increase their collaboration and use of comprehensive health screening measures and techniques. Although such large-scale changes are difficult to initiate, the health care industry must respond to the increased emphasis on integrated care as well as the renewed interest in behavioral health care parity. Research indicating that parity does not necessarily increase total health care expenses, e.g. [69,70] strengthens advocates’ arguments for change.

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Finally, despite the need for more meaningful outcome measures, other priorities—such as cost containment and the development of new technologies—have been the more immediate concerns of health care organizations. Outside of projects initiated by academic and government institutions, the domain of mental health and integrated care outcomes research has been limited; however, this disparity is beginning to change as stakeholders understand the importance of a wellness perspective. Increased recognition, by researchers, providers, and insurers, of the interdependence between behavioral and physical health holds great promise for innovative treatments that could significantly improve patients’ lives. It is imperative that we also expand the conceptualization, methods, and scope of outcomes measurement to fully evaluate the long-term success of an integrated approach.

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Acknowledgments

This project has been supported by ValueOptions. The authors extend special thanks to Christine Thurmond, BA, Ronald Dosoretz, MD, Peter Emerson, MPA, Sarah Nelson, PhD, and Ziming Xuan, MPH, for their important contributions to this project. The manuscript benefited significantly from the thoughtful criticisms and suggestions of the reviewers.

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