Beyond Substance Abuse: Stress, Burnout, and Depression as Causes of Physician Impairment and Disruptive Behavior

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Disruptive physician behavior may diminish productivity, lead to medical errors, and compromise patient safety. The purpose of this paper is to review how common psychological conditions such as depression, stress, and burnout may drive disruptive behavior in the workplace and result in impaired patterns of professional conduct similar to what is seen with substance abuse. Problems related to these psychological morbidities may be more effectively managed with improved understanding of the conditions and behaviors, their associated risk factors, and the barriers that exist to reporting them. Further research and educational programs are warranted to address how these conditions might affect radiology.

Key Words: Physicians, professionalism, disruptive behavior, impairment, mental health

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During an abdominal CT angiographic study, a sedated child wakes up, rendering the examination nondiagnostic. Dr Killjoy, the senior radiologist monitoring the case, angrily denounces the nurse, fellow, and technologist in front of the patient and family. He throws down the chart, tells the family the study has been ruined because of incompetence, and storms out of the room. The nurses, technologists, and fellows later tell you that Killjoy is often irritable, prone to angry outbursts, and degrading in his tone toward subordinates. Killjoy confidentially admits to you later that he is feeling anxious and emotionally drained and has been having trouble sleeping and concentrating.

INTRODUCTION

Unfortunately, the disruptive behavior depicted in this clinical scenario does occur in radiology practice. Disruptive behavior in the medical setting is defined as that which "interferes with patient care or could reasonably be expected to interfere with the process of delivering quality care" [1]. Disruptive behavior in any workplace poses considerable challenges for coworkers, managers, subordinates, and patients. In the medical setting, disruptive behavior may also have important clinical and medical-legal consequences. The Joint Commission [2] recently issued a sentinel event alert stating that disruptive behavior can compromise patient safety and foster medical errors, contribute to poor patient satisfaction and to preventable adverse outcomes, undermine individual and team communication and effectiveness, increase the cost of care, and cause qualified clinicians, administrators, and managers to seek new positions in more professional environments.

The responses of those working with disruptive physicians may vary from tolerance to dismay. Yet many physicians may not recognize that this behavior may arise from a psychiatric condition in need of attention. Substance abuse has long been acknowledged to cause physician impairment, which can result in disruptive behavior. Less well known is that stress, burnout, and depression, common psychiatric conditions, can result in similarly impaired patterns of professional conduct. The morbidity associated with these conditions, and their impact in the workplace, is receiving increasing attention within society [3-6] and medicine [2,7-9] but has received little consideration in the radiology literature. Lack of awareness of the impact of these mental health disorders may leave radiology managers and coworkers ill prepared to recognize and respond effectively to an important source of workplace disruption.

The purpose of this paper is to review how stress, burnout, and depression represent psychiatric morbidities other than substance abuse that may cause considerable disruption and even disability in the medical work-

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place. These are conditions from which radiologists are certainly not immune. Early recognition of problematic physician behavior related to these conditions is critical not only for affected practitioners' well-being but also for the health and safety of their patients. Better management of disruptive behavior resulting from physician mental health impairment can be facilitated by 1) understanding the prevalence of mental health conditions and how these conditions can cause physician impairment; 2) recognizing behaviors that may reflect psychiatric morbidity; 3) understanding risk factors and high-risk groups; and 4) understanding barriers to effective reporting.

MENTAL ILLNESS, IMPAIRMENT, AND DISRUPTIVE BEHAVIOR IN THE WORKPLACE

Disruptive behavior is a complex problem; it can result from physician impairment due to one or more of a spectrum of common psychiatric conditions. Impairment has been defined as "any physical or mental condition that detrimentally affects, or is likely to affect, [a physician's] capacity to practice medicine" [10]. It has also been defined as occurring when the "ability to care for self or others, particularly patients, is hampered because of stress, emotional illness, or substance abuse" [11,12]. These definitions for impairment overlap considerably with that for disruptive behavior. Although not all impaired behavior is necessarily disruptive, the two are frequently synonymous. Although much attention has been paid to substance abuse as a cause of impaired and disruptive behavior among physicians, much less attention has been paid to other mental health conditions, despite their relative frequency [13].

The prevalence of psychiatric disorders in both the general population and among physicians in the United States is impressive. Approximately 20% of Americans suffer from diagnosable mental illnesses each year [14]. Depression, bipolar disorder, schizophrenia, and obsessive compulsive disorder are 4 of the top 10 leading causes of disability in the United States. *Forbes* recently reported that mental illness was the fourth most expensive medical condition in the United States, behind heart disease, trauma, and cancer but ahead of chronic obstructive pulmonary disease, hypertension, diabetes, arthritis, back pain, and pregnancy [15]. Except for schizophrenia, most mental illnesses, including depression, bipolar disorder, and obsessive compulsive disorder, are likely as common among physicians as among the general public [14].

Among mental disorders, depression is the most prevalent and causes the most disability [6]. Up to 17% of Americans will suffer an episode of major depression during their lifetimes, and approximately 7% to 9% of the American workforce suffers from major depression at any given time [3,6]. Approximately 13% to 20% of physicians suffer from depression [7,13]. According to the National Institute of Mental Health, major depressive disorder is the leading cause of disability in the United States for individuals aged 15 to 44 years [4]. Patients with depression are reported to demonstrate impairments in functioning that are equivalent to if not greater than those in patients with diabetes, back pain, and other common cardiovascular, respiratory, and gastrointestinal conditions [10]. It is the third leading cause of short-term disability leave among employees in the United States [3]. In addition, depression has a propensity to affect younger individuals, compared with other chronic ailments [6].

Burnout is increasingly understood to represent a serious mental health condition, although it is still not as well recognized as a "mental illness" as depression and other psychiatric diagnoses [6,16,17]. Burnout is defined as "a pathological syndrome in which emotional depletion and maladaptive detachment develop in response to prolonged occupational stress" [9,17-19]. It is composed of several characteristics: 1) emotional exhaustion, in which overwhelming work depletes one's energy; 2) depersonalization and cynicism, in which one feels detached from one's job; and 3) feelings of inefficacy, in which one perceives a lack of personal achievement [18,19].

Psychiatric disorders often coexist in the same person, which may confound efforts to identify and treat root causes of disruptive behavior. Depression, like substance abuse, may be an isolated condition, coexist with other conditions, or be the consequence of other conditions. Borderline personality traits are frequently found in those with major depressive disorder and bipolar disorder [20,21]. Likewise, those with borderline personality disorder often have concurrent depression. Substantial clinical overlap also exists between burnout and depression [6,16].

Stress-related conditions not specifically diagnosable as mental illness may also lead to physician impairment. Excessive anxiety, exhaustion, stress, and sleep disturbance are all seen in considerable numbers of physicians [7,14,22]. In one survey of 700 physicians, 31% reported excessive anxiety, 60% experienced exhaustion and stress, and 48% suffered sleep disturbance [23]. Yet there has been only limited acknowledgment that these factors may contribute to substantial disability among physicians [13,14,18]. Most physicians face chronic and substantial psychological stressors in their work environment (Table 1). Depression, anger and irritability, anxiety, and substance abuse often occur in response to stress [12].

Table 1. Commonplace stressors among physicians

- Sitting for (failing) higher examinations
- Involvement in acute environments (Emergency Department, Neonatal Intensive Care Unit)
- Juggling career/family
- Overwork/tiredness
- Non-English-speaking background
- Physical illness
- Authoritarian hierarchies intolerant of perceived "weakness of failure"
- "System" issues (poor morale, shrinking funds)
- Increasing emphasis on efficiency
- Increasing requirements for formalized accountability
- Increasing threats of litigation
- Decreasing cohesiveness (professional turf issues)
- Decreased long-term unhurried relationships with patients
- Increasing emphasis on "patients' rights"
- Involvement in medical catastrophe
- Perceived decline in status of medicine
- Uncertainty about future career options
- Marital discord
- Financial difficulties

Source: NSW Doctors' Mental Health Implementation Committee [7].

BEHAVIORS ASSOCIATED WITH PSYCHIATRIC MORBIDITY

Certain disruptive behaviors exhibited by physicians may reflect underlying psychiatric morbidity. Affective instability, characterized by intense episodic dysphoria, irritability, anxiety, inappropriate or chronic anger, and frequent rapid mood changes [3], may be seen in conditions such as substance abuse, major depression, bipolar disorder, and borderline personality disorder. Cognitive impairment, depression, and feelings of helplessness, hopelessness, worthlessness, guilt, loneliness, or emptiness may all result from underlying psychiatric conditions [2,12,20,21].

The consequences of job stress and burnout include reduced personal accomplishment, increased absenteeism and job turnover, deterioration of the physician-patient relationship, ordering more tests, early retirement, and increasing physician disability insurance premiums [6,17-19]. These manifestations of physician impairment are as tangible as those associated with substance abuse. All are consistent with the definition of disruptive behavior. Although burnout may not lead to "abusive" behavior per se, it can nonetheless lead to behavior that is detrimental to workplace conditions and the provision of optimal care.

Perhaps the most important consequence of disruptive behavior by physicians is increased risk for medical errors and compromised patient safety [1]. Of course, all physicians are at risk for committing medical errors, and making an error does not necessarily constitute impaired or disruptive behavior. However, behavioral impairment related to psychiatric conditions other than substance abuse is now recognized as an important risk factor for medical error. In a recent prospective cohort study of pediatric residents, Fahrenkopf et al [9] found that depressed residents were >6 times more likely than nondepressed residents to make medication errors [9]. Burnout was associated with a higher rate of self-reported errors among residents but was not correlated with an increased rate of recorded medication errors. Even for physicians who are initially healthy, committing a medical error may secondarily lead to depression, starting a "vicious cycle" [9]. Under any of these circumstances, such behavior is, by definition, disruptive.

RISK FACTORS FOR PSYCHIATRIC MORBIDITY AMONG PHYSICIANS

The prospective identification of specific risk factors for excessive stress, burnout, and depression among physicians is an essential component of optimal management. Many important risk factors have been identified and are similar to those for substance abuse. These include current resident status, female gender, advancing age, substance abuse itself, and various personality traits that may be common among physicians (Table 2) [17-19,22,24]. Certain work environments are also associated with an increased risk for stress, burnout, and depression [6,16-19]. These include settings of high job demand and work overload in which there is considerable work-home interference. Other stressful environments are those in which employees have low personal autonomy or lack participation in decision making, perceive poor control

Table 2. Personality traits associated with higher risk for psychological morbidity

- Perfectionism
- Indecisiveness
- High self-criticism
- Low flexibility
- Highly disciplined
- Idealism
- High degrees of empathy

Source: Graske [22].

Table 3. "Catastrophic levels of stress" during residency

Heavy workload	Sleep deprivation
Difficult patients	Overbearing clerical and administrative responsibilities
Poor learning environments	Relocation issues
Low flexibility	Isolation and other social problems
Financial concerns, heavy debt loads	Information overload
Cultural and minority-related issues	Gender-related issues
Career planning issues	Family issues
Marginal performance in medical school	Studying specialty not compatible with talents/skills/personalities
Interpersonal problems on the job	

Source: Levey [12].

over the flow of work, possess skills that are incongruent with expected tasks, experience role conflict and ambiguity, have feelings of being poorly managed or resourced, or experience frequent interruptions.

Residency, in particular, represents a period during one's medical career in which one may be at substantial risk for psychiatric illness [12,13]. It is well recognized that residency exposes young physicians to harsh environmental conditions that entail "catastrophic levels of stress" (Table 3) [12,24]. As a result, they may be particularly prone to struggle with depression, anger control, and substance abuse [25]. Residents suffer considerably higher rates of burnout and depression than physicians as a whole and the general population [8,9,12,13]. By some estimates, one-third to one-half of physician trainees suffer from depression, and up to three-quarters of residents experience burnout [8,9,12]. A "house office syndrome" has been described in medical residents and is characterized by episodic cognitive impairment, sleep deprivation, chronic anger, pervasive cynicism, and family discord [10].

Like residents, women represent a large cohort of practicing physicians who are at increased risk for psychiatric morbidity, depression in particular [13]. Self-reported rates of depression among female physicians are higher than in men, although these rates are not different from the general population [8]. Both male and female physicians are at higher risk for suicide than the general population, but female physicians are at significantly higher risk than their male counterparts [7,13]. Compared with the general public, the relative risk for suicide among male physicians is 1.1 to 3.4. Female physicians have a relative risk of 2.5 to 5.7.

Female residents, then, would seem to be at exceptionally high risk for psychiatric morbidity. Indeed, female residents have been identified as facing unique environmental stressors [12]. In addition to social factors common to all residents, such as isolation and loneliness, female residents may be more likely to encounter prejudice from patients, medical staff members, and nurses. They may have fewer role models than male physicians and be more out of sync with their nonmedical peers. Compared with their male counterparts, female residents may be more likely to experience conflict between their professional and personal goals or problems balancing family and career. Furthermore, they may face considerable career and physical challenges related to pregnancy. Finally, female residents may be particularly vulnerable to developing depression and other psychiatric morbidities in response to the acute stressors they face [12].

ARE RADIOLOGISTS AT INCREASED RISK FOR PSYCHIATRIC MORBIDITY?

A 2007 study published in *Radiology* found a high degree of general satisfaction among practicing radiologists in the United States [26]. Reported rates of satisfaction for radiologists were considerably higher than those published elsewhere for other physicians [27]. Although the questions used for the survey of radiologists were the same as those used in a similar *JAMA* survey of nonradiologists [27], important differences in methodology (eg, mail vs telephone survey) and data analysis (eg, different scoring systems) limit direct cross-study comparison. Nonetheless, it is encouraging that >90% of practicing radiologists reported either "very high" or "somewhat high" levels of satisfaction.

These surveys measured self-reported job satisfaction only. Correlation with the incidence of stress, burnout, and psychiatric morbidity among radiologists is difficult to make in the absence of direct data. One recent study found a significant correlation between job dissatisfaction and both depression and increased time off for disability [6]. To date, only one study has directly compared radiologists and nonradiologists with respect to both job satisfaction and mental health [18]. A 1996 *Lancet* report compared the incidence of psychiatric morbidity among gastroenterologists, surgeons, oncologists, and radiologists in the United Kingdom. Although all physician groups reported a similar incidence of psychiatric morbidity (27%), burnout was significantly more prevalent among radiologists. Radiologists had the lowest degree of job stress but also scored lowest for all specific measures

of satisfaction, including having good relationships with patients, relatives, and staff members; professional status and esteem; deriving intellectual satisfaction; and feeling well managed and resourced. Among all groups of physicians in this cohort, surgeons scored highest for both job stress and job satisfaction. The study concluded that job satisfaction may be protective of mental health [18].

Important differences between the *Lancet* study [18] and the *Radiology* [26] and *JAMA* [27] surveys may have contributed to the different results regarding the degree of job satisfaction among radiologists compared with other groups of physicians. First, physician working conditions and annual incomes for radiologists differ substantially between the United Kingdom and the United States. In addition, the medical environment in the early 1990s, when the *Lancet* study was conducted, may have been different from that in the late 1990s and early 2000s, when the *JAMA* and *Radiology* surveys were implemented. Questions about job satisfaction were framed differently, and responses may differ to questions about general perceptions of overall satisfaction compared with questions about specific facets of satisfaction. Finally, compared with nonradiologists, radiologists may derive greater satisfaction from aspects of their career not measured in the *Lancet* survey, such as ample access to family and outside interests.

Despite important differences among these studies, several points relevant to radiologists merit consideration. First, the *Radiology* survey [26] found that high job satisfaction among posttraining practicing radiologists was more highly correlated with lifestyle and income than with interest in radiology per se. Thus, in environments in which personnel shortages and decreasing reimbursements exist, one might expect lower degrees of satisfaction and higher levels of job strain, with corresponding deleterious effects on mental health. Second, the survey of radiologists found that levels of overall satisfaction among radiologists had fallen since a comparable survey was published in 1995. In addition, radiologists reported less job satisfaction compared with 5 years earlier. Given evidence suggesting an inverse association between job satisfaction and mental illness, especially burnout and depression, the possibility of an increasing incidence of stress, burnout, and depression among a small but growing number of radiologists over the past 10 years deserves further attention and evaluation. Finally, other at-risk groups can be identified from the radiologist job satisfaction data. Groups that have features that were documented to negatively affect job satisfaction, such as advanced age and a feeling of being "seriously overworked," may be at increased risk for the development of impairment [27]. Finally, even those with high career satisfaction may experience significant traumatic episodes personally or in the workplace that could imperil their mental health [6].

BARRIERS TO EFFECTIVELY DEALING WITH DISRUPTIVE BEHAVIOR AND MENTAL HEALTH PROBLEMS IN THE WORKPLACE

A number of important barriers exist to the effective management of mental health disorders and related behavioral problems in the workplace. Many physicians either deny that a problem exists or attempt self-treatment [14]. The diagnosis of mental illness, and seeking treatment for it, may be highly stigmatizing. There is well-grounded apprehension about confidentiality, documentation, and discrimination [6].

Another substantial obstacle to the optimal handling of mental health impairment and consequent disruptive behavior in the medical workplace is the low rate of reporting of affected physicians by their colleagues [28]. In part, this may be due to general discomfort with reporting mental health problems or disruptive behavior. Physicians who witness disruptive behavior may have concerns about being stigmatized themselves if they report the issue, or they may be conflicted over protecting the privacy of the impaired individual. Some may also fear social, financial, or legal repercussions. Furthermore, there is a lack of sufficient reporting guidelines in general, and physicians tend to lack knowledge or awareness of guidelines where they exist [28]. The low rate of reporting is exacerbated by a lack of awareness of mental illness as a cause of disruptive behavior. Using hypothetical case scenarios, Farber et al [28] found that physicians were generally unaware that impaired behavior may be secondary to psychiatric problems other than substance abuse. Physicians were more likely to report problems related to alcohol, drugs, gambling, and pornography than to report problems related to inappropriate anger.

ADDRESSING THE PROBLEM

Compared with substance abuse, psychiatric morbidity related to stress, burnout, and depression is an important but underrecognized cause of workplace disruption that can compromise the quality of the workplace environment and patient care. The recent report that depression is associated with a higher incidence of medical errors among pediatrics residents highlights the need for further research into the influence of provider mental health on patient care [9]. At present, few systematic and widely used approaches exist to maintain physician performance standards or manage problems related to behavioral impairment [2]. Models that have been proposed seem variably robust [2] (for a comprehensive review, see Leape

and Fromson [1]). The efficacy of these interventions remains empirically unvalidated.

Recognizing individuals with these mental health conditions begins with identification of disruptive behavior. Understanding the prevalence of these conditions, as well as the related environmental stressors and risk factors, may heighten the sensitivities of department managers and coworkers to the display of genuinely disruptive behaviors and the potential existence of associated psychiatric disorders. The significance of these disruptive behaviors in medicine has been highlighted by the recent Joint Commission [2] sentinel event alert. Efforts to manage these problems would be facilitated by the institution of internal mechanisms designed to mitigate risk factors and promote willingness to confront disruptive coworkers and subordinates in a nonthreatening and beneficent manner. Some have proposed provision of greater access to stress management workshops and mental health resources within the workplace [12]. These resources may remain underused until barriers to reporting are mitigated.

Given the implications for workplace disability and patient safety, additional educational initiatives targeted at training managers and workers about disruptive behavior and psychiatric morbidity in the workplace would seem a worthwhile priority. Such initiatives could include workshops at professional meetings, the use of outside consultants within individual departments, and the greater integration of institutional mental and occupational health services.

CONCLUSION

Little is known about how disruptive behavior related to any cause might adversely affect physician performance and compromise patient safety in radiology. Less still is known about the incidence or impact of depression, burnout, and stress in the radiology workplace. Behavioral problems related to these psychological impairments may become more frequent or acute as workloads increase and reimbursements decline. Those who work in or manage radiology practices would benefit from further research into the incidence and risk factors for impaired behavior and psychiatric conditions among radiologists and from educational programs to provide training on the identification and management of potentially harmful behaviors and their underlying etiologies.

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