

# Addictive Disorders in Medical Populations

Editors

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Community Health & Family Medicine, University of Florida College of Medicine and McKnight  
Brain Institute, USA*

 **WILEY-BLACKWELL**

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# Preface

Drug and alcohol addictions occur commonly in medical populations; 25–50% of patients seen by primary care physicians have alcohol and drug disorders, with even higher prevalence in certain medical specialty populations. Drug addiction, alcohol addiction, and what has been called unhealthy drinking are even more common and prevalent in trauma centers and our society. Injury due to excess and dangerous consumption of alcohol causes almost 25% of trauma center admissions. Currently, there are no authoritative addiction texts with a focus on the identification, intervention, and management of either “addictive disorders in medical populations” or “medical complications in addiction populations”. This book will be useful for those seeking information to help a patient or family with a tobacco, alcohol or drug problem. We hope this book can give answers and a direction to the identification and management of addictions and their medical complications in patient populations.

The death rate for alcohol-related injury patients after discharge is almost 200% higher than that of injury patients who were not drinking. Yet it was not until 2007 that the American College of Surgeons Committee on Trauma implemented a requirement that all Level I trauma centers have a way to provide alcohol screening and intervention to patients. Additionally, the Substance Abuse and Mental Health Services Administration (SAMHSA) has established and helped get codes for the Screening, Brief Intervention, Referral and Treatment (SBIRT) initiative to expand the physician and health professional treatment support and capacity for substance use and addiction. *Addictive Disorders in Medical Populations* covers this subject in depth as far as what to say and do as well as providing additional resources for the MD.

Neurobiological progress in the field of addiction has been amazing and evidence-based treatments have developed at a phenomenal pace, with bench to office applications for tobacco, alcohol, and drugs. Pharmacological and psychosocial treatments are covered in detail in this book, in clear practical terms. The medical and mental complications of addiction are explained comprehensively throughout the text. Clinical considerations are the predominant theme; however, the standards of clinical practice described in *Addictive Disorders in Medical Populations* are grounded in the most current research. The chapters have consistent organization, which includes uniform, plentiful, and practical presentations of both clinical and research materials. The authors are leaders in their fields, selected from the respective general medical and specialty areas.

We know all too well that most, if not all, MDs in practice today did not have the benefit of learning about the neuroscience of addiction and substance addiction when they learned their basic sciences in medical school. Worse yet, if they learned addiction and misuse identification, interventions, and treatment, it was from a book. Imagine learning examinations or labor and delivery by reading a book alone, without clinical correlation and context. When we started mandatory two-week addiction medicine clerkships for all University of Florida medical school students, we hoped but did not envision how much that would change our hospitals and the College of Medicine. Knowing where we are, we hope that this book bridges the gap between what the practicing health provider or specialist needs to know and what they have learned the hard way.

*Norman S. Miller and Mark S. Gold*





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Paula Edge showed keen editorial abilities and dedication to her craft in managing the editorial review process and bringing the project to successful completion.

*Norman S. Miller and Mark S. Gold*



# **Part One**

## **Addictive disorders and medicine**



# 1

## Addictive disorders as an integral part of the practice of medicine

Norman S. Miller<sup>1</sup> and Mark S. Gold<sup>2</sup>

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### 1.1 OVERVIEW

The role of physician in the prevention and treatment of addictive disorders is growing in importance and magnitude. The public and managed care organizations are increasingly looking to physicians for leadership and advocacy for patients who have drug and alcohol addictions. The political climate and enormous need combine to make the role of physicians essential to prevention and treatment strategies for addictive disorders. Efforts by physicians in the past have been slow and obstructionist, partly because of moral views and lack of training in addiction problems and disorders. Physicians who were not prepared to confront patients about their addictions and nonphysicians who could treat, but not communicate with the physicians, competed for the overall care of the patients. Frequently, patients had to bridge the gap at the expensive cost of delay in prevention and diagnosis of problematic use of alcohol and drugs.

Heretofore, physicians played a supporting role, or no role at all, in fostering and developing effective

prevention and treatment methods for addictive disorders. The attitude of “see no evil, hear no evil, do no evil” no longer allows physicians to ignore common alcohol and drug problems in their patients. Increasingly, generalists are called upon to screen, detect, prevent, and treat alcohol and drug disorders in their populations.

The challenge to medical schools and resident training programs to provide education and clinical experience in addiction has never been greater or more pressing. In the past, despite the presence and affects of alcohol and drug-related disorders, medical schools and residency programs failed to competently teach screening, diagnosis and treatment of such disorders to students. Increasingly, medical students and residents became aware of the need and demonstrated interest in becoming knowledgeable and skilled in the prevention and treatment of alcohol and drug addiction. Both residency directors and curriculum deans affirmatively endorsed that assessment of deficiencies in training and

education for alcohol disorders would lead to significant improvements in medical education for residents and medical students. As a result, medical schools and psychiatry residency programs (at least in the major university settings) are integrating addiction education and experience into their programs [1].

We have a large body of knowledge and basic skills in the prevention and treatment of addictive disorders. Considerable resources have been spent on research and development of clinic methods for prevention and treatment. The next step is to implement what is effective and useful to patients. The role of physicians will become apparent if they

concentrate on what is effective in preventing and treating addictive disease [2].

After reading this chapter you will better be able to understand:

1. The clinical prevalence of addictive disorders in the general as well as special circumstance populations.
2. The role of the physician in the prevention and treatment of addictive disorders.
3. Methods to improve prevention and treatment of addictive disorders primarily through improving medical school education.

## 1.2 CLINICAL PREVALENCE

### 1.2.1 Prevalence of alcohol and drug dependence in the general population

Alcohol and drug dependence are among the most prevalent illnesses in American society. The Epidemiological Catchment Area study, which is a survey of mental health and substance-related disorders in nearly 20 000 adult Americans, found a 13.5% lifetime prevalence of alcohol addiction or dependence, and 7% of drug dependence [3]. Alcoholism and related illnesses are major causes of morbidity and mortality in patients in the United States. More than half of all accidental deaths, suicides, and homicides are alcohol or drug related [4]. A significant proportion of fetal anomalies can be attributed to the use of drugs or alcohol during pregnancy, with an estimated rate of 11% of illicit drug use among pregnant women [5]. The use of intravenous methods of administering illicit drugs has contributed to the increasing number of deaths from AIDS, according to data from the Centers for Disease Control and Prevention (CDC) [6].

### 1.2.2 Prevalence of multiple drug use and dependence in treatment

The use of multiple drugs and alcohol is extraordinarily common (e.g., alcohol and cocaine,

heroin and cocaine, marijuana with alcohol or cocaine). The large overlap of the use of drugs and alcohol has had significant ramifications for diagnosis and treatment as they are traditionally practiced [7–11].

Research models for dependence on alcohol and drugs are affected by multiple use and dependence. In practice, one drug is frequently substituted for another, and the majority of individuals develop combined alcohol and multiple-drug dependence. The concurrent and simultaneous occurrences of multiple drug and alcohol dependence suggest a generalized susceptibility to the various types of dependence [12–15].

### 1.2.3 Prevalence in the medical population

Drug and alcohol addiction are among the most common disorders seen in medical practice. They are at least as common as hypertension [16]. Addiction is associated with a wide range of problems, including pancreatitis, liver disease, accidents, suicide, depression, and anxiety. 20–50% of inpatient hospitalizations may be attributed to substance use and addiction, and 25–50% of emergency room visits are alcohol use and addiction related [17–22].

Although addiction is an extremely common disorder, it remains inadequately diagnosed and treated by physicians. Of the 20% of patients seen in ambulatory care settings who are estimated to be addicted to substances, only 5% of these patients are diagnosed [23]. Physicians do not diagnose or treat substance use and addiction with the same frequency, accuracy, or effectiveness as they do other chronic medical diseases [24,25]. In a recent study, resident physicians correctly identified less than half of the patients with positive scores on a CAGE questionnaire, 22% of patients with an alcohol addiction history, and 23% of patients with a history of substance addiction [26,27].

### **1.2.4 Prevalence in family and workplace populations**

The psychological and social costs of alcoholism and drug addiction are considerable to patients in medical practice. Alcoholism is a major cause of family dysfunction, including domestic violence and child abuse. Over 40% of adults report exposure to problem drinkers in their families [28]. Alcoholism is a major contributor to poor job performance and productivity loss. Data show that 15% of heavy alcohol users missed work because of illness or injury in the past 30 days, and 12% of heavy users skipped work because of drinking in the past 30 days [29].

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## **1.3 CLINICAL DIAGNOSIS**

Physicians must make the diagnosis of alcohol and drug dependence to develop an integrated approach to medical education about addiction. Physicians must diagnose patients who present with abnormal alcohol and drug use [30–32]. Physicians must ask routine screening questions to all patients they see and maintain a high index of suspicion for addictive diseases, especially in light of the extreme levels of denial often present in addicted patients. Physicians seeing patients in high-risk populations, such as emergency departments, prisons, and trauma units, must have an especially high index of suspicion. A family history is the best predictor of addiction in patients; therefore, questions about family history take on special importance in the detection of substance addiction or dependence. In addition, patients with chief or presenting complaints such as sleep disorders, “stress,” chronic dyspepsia, recurrent peptic ulcers, or recurrent trauma should also raise a physician’s index of suspicion. Physicians must be taught to listen carefully for rationalization, minimization, and denial in patient’s responses while observing their affective component associated with these complaints and responses [33].

### **1.3.1 Risk assessment by physicians**

Physicians should be able to detect patients in environments that pose a risk for the development

of substance dependence. Categories of vulnerability to the use of alcohol, tobacco, and other drugs should be learned by every physician. Family environment includes family conflict, poor discipline style, parental rejection of the child, lack of adult supervision or family rituals, poor family management or communication, sexual and physical abuse, and parental or sibling modeling for use of alcohol, tobacco, and other drugs. School environment involves lack of school bonding and opportunities for involvement and reward, unfair rules, norms conducive to use of drugs, and school failure because of poor school climate. Community environment pertains to poor community bonding; community norms that condone alcohol, tobacco, and other drug addiction; disorganized neighborhoods; lack of opportunities for positive youth involvement; high levels of crime and drug use; endemic poverty; and lack of employment opportunities. Peer factors include bonding to peer groups whose members use alcohol, tobacco and other drugs or engage in other delinquent behaviors [34].

### **1.3.2 Physical examination and laboratory testing**

The physical examination may be helpful in detecting alcohol or drug dependence. Information about intoxication, withdrawal, or alcohol-related

or drug-related organ damage and disease may yield important information about the adverse complications of addictive illness. Although no specific finding is pathognomonic of alcoholism, a physician's use of physical findings may be valuable in penetrating denial and convincing patients of the significant extent of their alcohol

and drug use. Laboratory tests, such as urine toxicology screen, macrocytic red cell indices, or for serum glutamic-oxalacetic transaminase and serum glutamic-pyruvic transaminase, may also be helpful. None of these, however, is of the same degree of importance and specificity as a thorough history for addiction with every patient [33].

## 1.4 CLINICAL COMORBIDITY

Substance addiction disorders have been associated with serious problems including violence, injury, disease, and death. In 2006, the CDC reported 13 470 injury deaths from alcohol-impaired motor vehicle crashes in the United States; this was almost 32% of all traffic-related deaths for that year [35].

It has been estimated that one in every four deaths can be attributed to the use of alcohol, tobacco, or some other form of drug. For example, tobacco use alone has been linked to 90% of lung cancer cases, 75% of emphysema cases, and 25% of ischemic heart disease cases [36].

## 1.5 TREATMENT OF MEDICAL DISORDERS ASSOCIATED WITH ALCOHOL AND DRUG USE AND ADDICTION

### 1.5.1 Physician intervention

Physicians should know how to provide simple interventions to eliminate or decrease substance misuse before it becomes dependence or addiction. Studies have shown that brief, empathic interventions by physicians can decrease the consumption and adverse effects of addictive substances by 20–50% [34,37–39]. Physicians should be taught that messages which state that the attainment of the goal of reducing alcohol-related problems is the patients' responsibility and which encourage abstinence are powerful modifiers of patients' behavior toward alcohol and drugs.

Physicians should be well versed in using prevention strategies for those patients at risk of substance addiction or dependence. Counseling patients about the health risks and dangers of substance misuse or addiction can be extremely effective in reducing their occurrence. The education of patients about the long-term and short-term consequences of substance misuse and addiction, including the severe risks encountered by drinking and driving, is fundamental to interventions by physicians. Physicians should be aware that many

patients' peers probably do not approve of substance misuse and addiction, including the severe risks encountered by drinking and driving, is fundamental to interventions by physicians. Physicians should be aware that many patients' peers probably do not approve of substance use as a healthy activity, which may prove to be an effective deterrent. Physician communication and physician availability as a source of confidential information about addictions are key to successful interventions. Open discussion between patient and physician of issues relating to the health effects of alcohol and drugs can be extremely helpful [30,32].

### 1.5.2 Requirements of physicians for diagnosing and treating addictive disease

A physician specialist in the treatment of alcoholism and other drug addictions must:

- Possess a current MD or DO license.
- Be able to recognize and diagnose alcoholism or other drug dependencies at both early and late



stages and possess sufficient knowledge and communication skills to prescribe a full range of treatment services for alcohol and other drug addiction patients, their families, or significant others.

- Demonstrate a functionally positive attitude toward addicted patients, their families, and indicated significant others.
- Be knowledgeable in addiction treatment and be able to intervene to get patients and their families or significant others into treatment for their needs.
- Be able to provide, refer, and support standard addiction treatment methods for alcohol and drug addictions.
- Be able to recognize and manage the medical and psychiatric complications of alcohol and other drug addictions.
- Be able to recognize and manage the signs and symptoms of withdrawal from alcohol and other drugs of addiction.
- Possess sufficient knowledge and communications skills concerning alcohol and other drug addictions to provide consultation, teach lay and professional people, and provide continuing education in this field.

General physicians must possess:

- The ability to competently obtain a history and perform a physical examination on patients with addictive disorder (this presumes an ability and willingness to hospitalize patients if necessary).
- An understanding of the medical, psychiatric, and social complications of addictive disorder (this presumes a knowledge of self-help groups, such as AA, Narcotics Anonymous, and Al-Anon, and presumes a knowledge of special groups for professionals).
- A positive attitude which is essential in establishing a relationship with patients in the treatment of alcoholism and drug addiction.
- A knowledge of the spectrum of this disease and the natural progression if untreated.
- A knowledge of the medical and psychiatric effects and organ damage attributable to alcoholism or other drug addictions (this presumes a knowledge of, and ability to prescribe, treatment).
- A knowledge of the classifications of drugs of addiction and their pharmacology and biochemistry (this presumes maintenance of current knowledge in this field and knowledge and skill in one or more methods of teaching and learning).
- A knowledge and skill in standard addiction treatment to prevent relapse and recurrence of adverse consequences of addictive disorders [40].

### 1.5.3 Abstinence-based method

Controlled studies have found significant results in treatment outcomes in abstinence-based programs, particularly when combined with referral to Alcoholics Anonymous (AA). The first randomized clinical trial of abstinence-based treatment showed significant improvement in drinking behavior compared with that of a more traditional form of treatment [41]. A total of 141 employed alcoholics were randomized to the abstinence-based program (Hazelden type) ( $n = 74$ ) or to traditional-type treatment ( $n = 67$ ). The abstinence-based treatment was significantly more involving, supportive, encouraging to spontaneity, and oriented to personal problems than was the traditional-type treatment. The one-year abstinence rate was significantly greater for the abstinence-based treatment; in addition, dropout rates were 7.9% for the abstinence treatment group and 25.9% for the traditional treatment group, respectively [42].

In another controlled study, 227 workers newly identified as alcoholics and cocaine addicts were randomly assigned to one of three treatment regimens: compulsory inpatient treatment, compulsory attendance at regimens; compulsory inpatient treatment, compulsory attendance at AA meetings; and a choice of options (i.e., inpatient, outpatient, or AA

meetings). Inpatient backup was provided if needed [43]. On seven measures of drinking and drug use, the hospital group had significantly greater abstinence at a one-year and two-year follow-up. Those assigned to AA had the lowest abstinence rates, and those allowed to choose either an inpatient or outpatient program or AA had intermediate results. The programs for inpatient and outpatient treatment were abstinence based with eventual referrals to AA at discharge [43].

Previous evaluation studies of large populations of patients (>9750 subjects) enrolled for abstinence-based methods have shown favorable outcomes for addiction treatment. The populations consisted of multiply-dependent patients, including those with alcohol, prescription drug, cannabis, stimulant, cocaine, and opiate dependence (DSM-III-R Substance Dependence). The overall abstinence rates at one year were 60% for inpatients and 68% for outpatients (57% of the cases were contacted for inpatients, 62% for outpatients) [44,45]. However, abstinence rates were increased to 88% for inpatients and 93% for outpatients who participated in continuing care following discharge. At one-year follow-up, only 8% were attending continuing care after discharge in the inpatient treatment programs, and 17% were attending the outpatient programs. Moreover, abstinence rates after discharge were 75% for inpatients and 82% for outpatients who were regular attendees at AA. Accordingly, 46% and 51% of those discharged from the inpatient and outpatient programs, respectively, were attending AA at least once per week. Abstinence rates at one year for nonattendees at AA were 49% and 57%, respectively. Significant outcomes on other variables were reported, such as improved psychosocial functioning and employment and legal histories for those completing the treatment programs in these studies [44–46].

According to survey results [47] (1992) conducted by AA, recovery rates achieved in the AA fellowship were:

1. Of those sober in AA less than a year, 41% remain in the AA fellowship for an additional year [47].

2. Of those sober more than one year and less than five years, 83% remain in the AA fellowship for an additional year

3. Of those sober five years or more, 91% remain in the AA fellowship for an additional year. Attendance in abstinence-based treatment programs can increase the recovery rates in AA, such as 80% from 41% with referral to AA following the treatment program [46].

### 1.5.4 Improving alcoholism treatment

Although treatment for alcoholism and drug addiction is clearly and significantly effective, treatment is not always as successful as physicians would wish it to be, nor is it sufficiently available to those who need it. Current data show 35–40% of alcoholics undergoing outpatient treatment relapse within three months. Improving alcoholism treatment and its availability are important priorities. The Institute of Medicine (IOM) of the National Academy of Sciences conducted a comprehensive study of the alcohol treatment process and system, entitled *Broadening the Basis of Treatment for Alcohol Problems* [48]. The conclusions in its report emphasized that alcohol treatment was effective but that improvement of the current alcohol treatment system in a cost-effective manner was needed. The IOM report identified several areas of treatment that needed improvement. These included: (1) the need for improvements and standardization in the diagnosis and assessment of alcoholism; (2) the need for more community-based assessment and interventions; (3) the need to base treatment referrals and level of treatment on the assessments; (4) the need for improved linkages between primary care, community-based treatment, and specialized treatment services; (5) a treatment system that provides better continuity of care; (6) the need for adequate financing for a spectrum of treatment modalities and sites to match the diversity of the population; and (7) the elimination of organizational, personal, and regulatory barriers to the diagnosis and treatment of alcohol problems.

In response to the IOM report, several groups have developed guidelines for the development of model treatment systems to meet the diverse needs of patients with substance-related disorders. In 1993, the American Society of Addiction Medicine developed core benefit requirements for addiction treatment. These include: (1) the need for and level of treatment must be a clinical judgment based on established criteria (e.g., the American Society of Addiction Medicine Patient Placement Criteria) [49], with quality of care ensured by appropriate review; (2) the concept that treatment for substance-related disorders should be included in any basic health benefit; (3) the concept

that coverage should include a continuum of primary care and specialty services; (4) that ongoing treatment evaluation, case management, and outcome studies should be an integral part of the ongoing evaluation of services; (5) that eligibility should be based on competent diagnosis using objective criteria (DSM-IV, ICD-9/10) [26]; (6) that coverage should be nondiscriminatory on the same basis as other medical care; and (7) that caps or limits on treatment should be applied on the same basis as is other medical care. The need for a comprehensive treatment benefit package was also affirmed at a researcher's recent consensus conference [48].

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## 1.6 WHY PHYSICIANS ARE UNPREPARED TO TREAT DRUG- AND ALCOHOL-RELATED DISORDERS

Physician education and training in addictions has long been ignored, although it has recently begun to increase selectively in medical schools, psychiatry residency programs, and continuing medical education. A study that examined changes in alcohol and drug education in United States' medical schools between 1976 and 1992 [50] found positive changes in education about drug and alcohol addictions. The number of teaching units in addictions in medical schools had doubled. More opportunities existed for required and elective experiences in addiction treatment, and more teaching activities were based in alcohol treatment and drug treatment settings. Faculty members who were teaching in this area had increased, and medical school graduates reported greater satisfaction with the medical school curriculum in substance misuse and addiction education. The number of fellowship positions in addictions had increased, and more primary care physicians were participating in advanced training. However, although promising, these results also showed that only eight medical schools had mandatory courses in substance misuse and addiction treatment. In addition, with the exception of the departments of family medicine and psychiatry, less than one third of the departments in the specialties had even a single identified faculty member teaching in this area [51]. Medical educators do not spend

anywhere near the same amount of time teaching in the area of addictions as they do in other areas of chronic disease, such as hypertension or cardiac disease, although these diseases are no more common than are the addictive disorders.

Clearly, given the poor rates of diagnosis and treatment of substance misuse and addiction by physicians, significant changes must continue to be made in our medical educational and training system to combat this problem. As has been previously mentioned, training in addictions has begun to increase, but whether these new measures have been wholly successful is unclear.

### 1.6.1 Recommendations for improving education training

A 1996 survey concerning alcohol- and drug-related disorders showed that little change had occurred in the way of increasing curriculum coverage in this area at that time. Family medicine residency directors, internal medicine residency directors, and medical school curriculum deans from randomly selected medical programs were invited to participate in this survey. The overwhelming majority of the responding curriculum deans (96%) reported that an integrated curriculum in

drug and alcohol disorders would be at least somewhat helpful.

Although programs have not seen many changes in terms of the amount of the curriculum dedicated to Substance Use Disorder education, a spotlight has been placed on the program and action plans to improve medical education in this area. In both 2004 and 2006, the Office of National Drug Control Policy had a leadership conference on Medical Education in Substance Abuse. The 2004 conference had representatives from more than 60 different federal agencies, medical groups, and certification boards in attendance to discuss ways to increase physician's motivation and ability to prevent, diagnose, and treat various substance addiction disorders [52]. The 2006 Conference's main purpose was to provide a framework to improve the education and practice of addiction medicine. During this conference, attendees divided into work groups to address improvements needed in various areas, including both undergraduate, graduate, and continuing medical education in the area.

The implementation of national conferences and Web-based educational programs has shown that the importance of addiction medicine education in the medical school curriculum has been recognized. Unfortunately, no supplemental conference or Web-based program can take the place of direct core curriculum integration on this topic. Due to the great percentage of the patient population affected by substance addiction disorders, it is imperative that medical educators make implementation of substance use education a part of their core curriculum as quickly as possible. In the following is some additional information on research studies on integration of addictive disorder information into medical school education.

### **1.6.2 Research studies on medical education in the area of addictive medicine**

Increases in technology and online learning have greatly contributed to additional medical student exposure in this area. Distance learning by the way of online courses has been added to many university

options and is increasingly shaping parts of medical school education as well. Noted as a traditionally neglected field, addiction education was tested in this format at the New York University Medical School. An interactive Web module was designed to improve students' competence in the area of alcohol addiction screening and intervention techniques. This online module was offered as an alternative choice to attending a lecture on the same topic. Traditionally, first year medical students at New York University were given three chronological sessions on this topic, a lecture, a small group seminar, and then an OSCE case. The lecture and Web module shared the same format outlines. However, researchers hypothesized that the online module would be more effective than a traditional lecture in teaching medical students how to effectively interview and screen their patients for suspected alcohol addiction. Students were assigned to the lecture or module group based upon class schedule. One to three weeks after participating in one of these sessions, both groups of students participated in seminars in which the methods of alcohol screening and interventions were reviewed. Three to five weeks following the module or lecture exposure, students were rated on their performance in dealing with an OSCE Alcohol Case. The case presented to each student was that of an adult woman with hazardous drinking tendencies in need of cutting down on her alcohol consumption or stopping all together. Student performance was assessed using the AUDIT-C, CAGE, and six brief intervention components. Those who completed the Web-based module performed better on average than their lecture-based counterparts on both performance and intervention ratings on this standardized OSCE Case [53].

Computerized learning in this area has not been limited to undergraduate medical education. A study investigating the effectiveness of a CD-ROM and Web-based training program to provide formal tobacco intervention training in pediatric residency programs was started in 2004. A study conducted prior to this at the New Jersey Medical School confirmed that formal training in addressing tobacco increased resident tobacco intervention activities [54].

More recently, a study at the University of Florida showed that an innovative addictions curriculum improved ratings on a psychiatry clerkship. The addictions curriculum included a two-week required clinical addictions experience incorporated into the six-week psychiatry clerkship. Students were all supervised by board certified addictionologists. In addition, students had eight hours of didactic lectures on addictions and completed five addiction online modules. Results indicated that overall course ratings improved, as

did student ratings of their preparedness for dealing with psychiatric problems in the primary care setting [55].

Also out of the University of Florida College of Medicine was a study that showed that the addition of video clips to psychiatry lectures enhanced long-term retention and improved attitudes about learning. These results have a potential application to a number of other areas and indicate that video can be a valuable resource for maintaining attention and interest in the lecture format [56].

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## 1.7 SUMMARY

With increasing pressure on general physicians by managed care organizations and the public to treat and advocate for drug and alcohol addicted patients, it is more necessary than ever that physicians have the knowledge and skills to appropriately address this segment of the population.

Specifically, physicians need a better understanding of the prevalence of alcohol and drug dependence in a variety of populations, along with increased awareness of the economic impact of addictive illnesses on our society. Routine screening questions should be incorporated into patient encounters, and physicians should be able to identify environments that may pose a risk for the development of addiction. Physicians need training and practice in referring patients to treatment teams, monitoring patients in recovery and providing interventions that will eliminate or reduce substance misuse before it becomes addiction.

The treatment outcomes in abstinence-based programs, particularly those combined with referral to AA, have been encouraging, demonstrating that addiction is a treatable illness and not a character defect. In addition, several studies provide evidence that addiction treatment is cost-beneficial, resulting in reduced medical costs, lowered absenteeism, and increased productivity.

Despite these encouraging results, there is still room for improvement. Treatment is not always effective, and it is not sufficiently available to everyone who needs it. Addicted individuals are both

stigmatized and marginalized, and many are too ill to advocate for themselves.

Widespread recognition in the medical community of addiction as a treatable illness will contribute to a greater understanding of addictive disorders and reduce the stigma attached to the diagnosis and treatment of addiction. For this to occur, better training for physicians in the recognition and management of addictive disorders, starting at the medical school level, is necessary. The approval of addiction medicine as a clinical specialty by the American Medical Association has helped also to advance the legitimacy of addiction as a treatable illness, and provides a focal point for the synthesis and integration of clinical, teaching, and research activities central to addiction medicine. The combination of knowledge, skills, and attitudes outlined will go a long way toward increasing physicians' abilities to assist their patients with recovery from addiction.

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