

Health Profession as a Risk Factor for Psychoactive Substance Use

*An Essay Submitted for Partial Fulfillment of
Master Degree in Neuropsychiatry*

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I ndex

· <i>Acknowledgement</i>	
· <i>Index</i>	<i>I</i>
· <i>List of abbreviations</i>	<i>II</i>
· <i>List of tables and figures</i>	<i>IV</i>
· <i>Introduction</i>	<i>1</i>
· <i>Chapter 1</i>	
Clinical approach to psychoactive substance use.....	6
· <i>Chapter 2</i>	
Vulnerability of health professionals to psychoactive substance use.....	43
· <i>Chapter 3</i>	
Management of substance abuse in medical professionals.....	74
· <i>Chapter 4</i>	
Plan for future management and primary prevention.....	94
· <i>Discussion</i>	118
· <i>Recommendations</i>	137
· <i>Summary</i>	140
· <i>References</i>	147
· <i>Arabic summary</i>	1

List of abbreviations

AC	Anterior Commissure
ADHD	Attention deficit hyperactivity disorder
AMA	American Medical association
AMG	Amygdala
AMPH	D-amphetamine
ANA	American Nurses association
APA	American Psychiatric association
APDIM	Association of Program Directors in Internal Medicine
ARC	Arcuate Nucleus
AUD	Alcohol use disorder
BLA	Basolateral Amygdala
BNST	Bed Nucleus of Stria Terminalis
BOS	Board for Osteopathic Specialists
CAQ	Certificate of Added Qualifications
CB	Cannabinoids
CNS	Central Nervous System
C-P	Caudate Putamen
DMT	dorsomedial thalamus
DS	Dorsal Striatum
FC	Frontal Cortex
GABA	Gamma-Aminobutyric acid
GATS	Global Adult Tobacco Survey
GHB	Gamma -hydroxy- butyrate
GHPSS	Global Health Professions Student Survey
GP	Globus Pallidus

List of abbreviations

GPs	General practitioners
GWAS	Genome Wide Associated Study
H2	Mean
HPs	Healthcare professionals
IC	inferior colliculus
LH	lateral hypothalamus
MBH	Mental and behavioral health
MDMA	Methylene -dioxy-metamphetamine
METH	Methamphetamine
MFB	Medial Forebrain bundle
N.Acc	Nucleus Accumbens
NCAS	National Clinical Assessment Service
NHS	National Health Service
OT	Olfactory Tract
PFC	Prefrontal cortex
PHC	Primary Health Care
PHPs	Physician Health Programs
PHS	Physician Health Services
PMR	Proportional mortality ratio
SUDs	Substance use disorder
UK	United Kingdom
U.S	United States
VTa	Ventral Tegmental area
VP	Ventral Pallidum
WHO	World Health Organization

List of abbreviations

List of tables

Table	Page No.
Table (1): Different drugs and their receptors	16
Table (2): Classification of benzodiazepines	24
Table (3): Barbiturates currently employed and therapeutic applications	28
Table (4): A brief table shows symptoms , toxicity and withdrawal symptoms of the mostly abused drugs	40
Table (5): Medications used in treatment of substance use disorders:-	79
Table (6): Prevalence of most common problems in physicians	120
Table (7): Reported rates of substance abuse in medical students	122
Table (8): Relative Risk Comparison of Selected Specialties	125
Table (9): Incidence of Psychiatric Co-morbidity associated with substance use in a sample of 73 physicians	126
Table (10): Incidence of substance abuse in different related medical professions	128
Table (11): Substance preferences according to different specialties	129
Table (12): Comparison between Addiction in General Population and in Medical Professions	134

List of figures

Figure	Page No.
Figure (1): Neurochemical neurocircuits in drug reward	14
Figure (2): Reward motivation of addiction	18
Figure (3): Emergency room visits involving non-medical use of prescription drugs	26
Figure (4): Addictive agents of a twin study	45
Figure (5): Percentage of 448 physician respondents likely to report physician colleagues	77
Figure (6) Illustration of primary health care	98
Figure (7) Illustration of methods of education	99
Figure (8) Illustration of methods of dealing with stress	108
Figure (9) Illustration of methods of improving quality of life	114

I ntroduction

In the first half of twentieth century, medical doctors slowly and painstakingly acquired a special position in society as providers of health care services. Through a series of strategic efforts , the result was a profession that had gained autonomy , monopoly , and expertise over the practice of medicine. Physicians have the moral responsibility to care for their patients not only by direct care and percept , but also by the example of their lives and personal conduct. The misuse of alcohol and drugs by a member of the medical profession is an occupational, social and personal problem that demands action to ensure detection, treatment and rehabilitation(*Talbott et al,2005*).

Health, stress and impairment of physicians have attracted increased attention in health care systems during the past years. Burnout rates in physicians in European and Anglo-American countries are estimated to be between 20 and 45 % (*Schumacher, 2005*). In a survey among U.S. internal medicine residents, the prevalence of psychosocial problems was as high as 76 %.(*Shanafelt, 2002*). Physicians as compared to the general population or other academic professions are also at elevated risk for problems such as alcohol and substance abuse, marital disturbances or suicide (*Voltmer et al., 2008*).

The pathways toward development of substance abuse and dependence problems in healthcare professionals (HPs) vary by group. For example, though professionally discouraged, self-diagnosing physicians have

I ntroduction

reported prescribing controlled substances for themselves. Due to drug access, a significant number of pharmacists tend to self-medicate and have the opportunity to titrate their drug use, a practice that can perpetuate the fallacy that pharmacological knowledge of drug action is an effective strategy to prevent addiction. In addition to drug access and a social environment promoting drug use people who choose nursing as a profession may report a higher rate of family history of alcoholism and drug abuse than other HP groups. Finally, perhaps more so than any other group of HPs, the greatest threat in dentistry may be alcohol consumption not controlled substance use. Given the increasingly stressful environment due to manpower shortages in the healthcare system in general, substance induced impairment among some healthcare professions is anticipated to grow(*Kenna et al. ,2008*).

Compared to the general public, physicians are more likely to use prescribed medications, but the primary problem remains alcohol (50.3%) (*McLellan et al., 2008*). Anesthesiologists are the exception to this, in that the most common drug of abuse among this group is highly potent injected opioids, such as fentanyl/ sufentanil, which are at least 100 times more powerful than heroin (*Kintz.et al., 2005*).In a study of 16 state physician health programs that examined 904 consecutive physicians placed under monitoring, five medical specialties comprised greater than half of the physicians: family medicine (20%), internal medicine (13.1%), anesthesiology (10.9%), emergency medicine (7.1%) and psychiatry (6.9%) Anesthesiologists comprise 5.2%of physicians nationwide;

I ntroduction

therefore, they are remarkably over-represented in physician health programs. All HPs need specialty treatment, but anesthesiologists, nurse anesthetists and other operating room personnel require special attention due to the dangers associated with diversion and use of the most powerful substances known (*McLellan et al., 2008*).

Substance abuse disorders among physicians are a major health and societal concern. Up to 14% of all physicians become chemically dependent at some point in their careers. Anesthesiology appears to be the specialty with the largest percentage of impaired physicians. Despite constituting _4%of the United States physician population, anesthesiologists represent up to 13% of physicians treated for chemical dependency. Anesthesiology residents endure substantial risk, as the largest morbidity and mortality from substance abuse in physicians occurs within the first 5 years after medical school (*Collins et al., 2005*).

Physicians with substance use disorders receive care that is qualitatively different from and reputedly more effective than that offered to the general population, yet there has been no national study of this distinctive approach. To learn more about the national system of Physician Health Programs (PHPs) that manage the care of addicted physicians, they surveyed all 49 state PHP medical directors (86% responded) to characterize their treatment, support, and monitoring regimens. Under authority from state licensing boards, state laws, and contractual agreements, they promote early detection, assessment, evaluation, and referral to abstinence-oriented usually residential treatment for 60 to 90

Introduction

days. Physicians then receive randomly scheduled urine monitoring, with status reports issued to employers, insurers, and state licensing boards for usually 5 or more years. Outcomes are very positive, with 71% still licensed and employed at the 5-year point(*Du Pont et al.,2009*).

Rationale :

Health professionals are from the most vulnerable careers to psychoactive substance use, as they are subjected to stressful conditions in addition to easy availability of self prescribed medications, which refutes that health professionals are immune against psychoactive substance use. Detection of substance use disorders in a physician is relatively harder than its detection in other patients, so the treatment of those physicians needs a highly specialized clinical practice.

I ntroduction

Aims of the work:-

- Review the definition of psychoactive substance use, and classification of types of psychoactive substances mostly used among health professionals.
- Review the most recent studies on risk assessment of substance use among health professionals.
- Display the most recent studies among health professionals using psychoactive substance.
- Recommend a program for early detection of substance use before job application.
- Highlight the recommended guidelines applied by health institutes for treatment and prevention of psychoactive substance use among health professionals.

The concepts of addiction and substance abuse are not new, but historically, the medical community has been reluctant to accept and publicly acknowledge addiction, particularly of its own members. As a result, there have been relatively few reports in the medical literature. Most of the literature on substance abuse consisted of anecdotal reports. Historically, addicted physicians either went unnoticed or were treated punitively. As early as 1869, Paget reported on a group of medical students and mentions physicians impaired by “*habits of intemperance.*” (*Baldisseri,2007*).

***Addiction ; definition of a terms:**

The term dependence refers to certain physiological and psychological phenomena induced by repeated taking of a substance; the criteria for diagnosing dependence are similar in DSM-V (*American Psychiatric Association,2013*) and ICD-10 (*Gelder et al.,2006*) , and include:

- ✓ a strong desire to take the substance.
- ✓ Progressive neglect of alternative sources of satisfaction.
- ✓ The development of tolerance.
- ✓ A physical withdrawal state.