A Literature Review of Alcohol Abuse and Dependence

Julie R. Vaughan
University of North Dakota

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A Literature Review of Alcohol Abuse and Dependence

by

Julie R. Vaughan
Bachelor of Science in Physical Therapy
University of North Dakota, 1996

An Independent Study

Submitted to the Graduate Faculty of the
Department of Physical Therapy
School of Medicine
University of North Dakota

in partial fulfillment of the requirements
for the degree of

Master of Physical Therapy

Grand Forks, North Dakota
May
1997
This Independent Study, submitted by Julie R. Vaughan in partial fulfillment of the requirements for the Degree of Master of Physical Therapy from the University of North Dakota, has been read by the Faculty Preceptor, Advisor, and Chairperson of Physical Therapy under whom the work has been done and is hereby approved.

(Peggy Nordby)  
(Faculty Preceptor)

(Peggy Nordby)  
(Graduate School Advisor)

(Thomas Moriarty)  
(Chairperson, Physical Therapy)
PERMISSION

Title A Literature Review of Alcohol Abuse and Dependence

Department Physical Therapy

Degree Master of Physical Therapy

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Signature

Date 13/06/96
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ACKNOWLEDGEMENTS

When the student is ready, the teacher will appear.
- Anonymous

I would like to thank the University of North Dakota School of Medicine Department of Physical Therapy for the opportunity to continue with my education.

Thank you, Clay, for all your encouragement throughout my academic career, and thanks to Elizabeth Head Vaughan for instilling the importance of education.

Thanks to my classmates for showing me how it is done.

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ABSTRACT

Alcohol abuse and/or dependence poses significant risks to a person's health. The negative effects and consequences of alcohol abuse and/or dependence has been well documented in the literature. Many people who are either alcohol abusers or alcohol dependent are admitted to hospitals with neurological deficits, medical complications and traumatic injuries. Often times an etiology related to alcohol abuse is ignored.

This population may be referred to physical therapy for rehabilitation. Functional outcomes and compliance are often unsatisfactory with this population. A better understanding of alcohol abuse and/or dependence could help identify persons at risk and improve functional outcomes.

The purpose of this study is to review the literature regarding alcohol and it's numerous effects on the human body and to increase awareness as to the nature and severity of this disease. This Independent Study will provide a teaching module, which is divided into three chapters. Each chapter will contain the following components: Outline, Objectives, Pre-test, Text and References. This study will provide information regarding alcohol abuse and/or dependence and implications for for physical therapy treatment.
Chapter One

Overview of Alcohol
Chapter One

Outline

Objectives
Pre-test
Introduction
History of Alcohol Use
Prevalence and Problem
Why People Drink Alcohol
Genetic or Environment?
Your Role as a Physical Therapist
References
Discussion Questions
Appendix A - Terms, Definitions and Criteria
Appendix B - Signs and Symptoms
Appendix C - Screening Tests
Appendix D - Resources
Objectives:

By completion of this chapter, the student will be able to:

- differentiate between alcohol abuse and dependence

- recognize common physical and behavioral signs and symptoms associated with alcohol abuse/dependence and withdrawal

- define the prevalence and problem associated with alcohol usage

- differentiate between alcohol absorption and metabolism

- outline blood alcohol levels in the body

- use familiar terminology associated with alcohol abuse/dependence

- review a self-assessment questionnaire concerning alcohol use

- demonstrate an understanding of why people drink alcohol and the role of genetics

- outline available resources
Pre-Test

1. What is the incidence of alcohol abuse or alcohol dependence according to the latest statistics?
   a. 10%
   b. 7.4%
   c. 20%

2. What is the annual socioeconomic cost for the U.S. related to alcohol abuse or alcohol dependence?
   a. $90 billion
   b. $70 billion
   c. $120 billion

3. When alcohol is ingested in the human body, it does not need to go through any chemical transformation.
   a. true  b. false

4. With a blood alcohol level of .4%, a person is considered...
   a. dead
   b. comatose
   c. in a stupor

5. Which of the following may be a sign that a patient has been abusing alcohol?
   a. requiring large amounts of pain medication
   b. delayed wound healing
   c. prolonged recovery time
   d. all of the above

6. Most of the time when a person who abuses alcohol or is alcohol dependent is admitted to the hospital, this problem is quickly recognized.
   a. true  b. false

7. The slower the alcohol is absorbed by the body, the drunker a person will get.
   a. true  b. false

8. Psychological dependence always leads to physiological dependence.
   a. true  b. false

9. For the most part, a patient’s history with alcohol is unimportant when it comes to physical therapy.
   a. true  b. false
CHAPTER 1

Introduction

As physical therapists you will come in contact with a wide variety of patients and face many challenges. Some of your patients may have underlying conditions that you or other health care professionals are not aware of. One of the challenges you may face will be to help identify the person who abuses alcohol or who may be at risk for serious health consequences as a result of their alcohol usage.\(^1\) Accurate history taking and physical assessment and consistent compliance during treatment are some of the obstacles a physical therapist may face when dealing with a person who abuses alcohol or may be alcohol dependent. Consideration of alcohol use as a concern will aid the physical therapist in obtaining accurate information and assist in delivering quality treatment to their patients.

History of Alcohol Use

The earliest mention of alcohol is in the Bible.\(^2\)\(^,\)\(^3\) Excess usage, drunkenness, and the dichotomy between the virtue of strong drink and of abstinence are described in the Old Testament. The Greek tragedies, which are so much a part of history, also speak of alcohol excess. Although the use and abuse of alcohol has been witnessed and documented throughout history, its recognition in modern society as having potentially harmful medical consequences did not occur until around the nineteenth century.\(^2\)

The misuse of alcohol is a universal concern and has been in existence for thousands of years.\(^3\) The chronic use of alcohol threatens the medical, social, psychological, legal and spiritual communities with a multitude of consequences.

By 1980, the American Psychiatric Association (APA), The World Health Organization (WHO), The American Medical Association (AMA), National Council on
Alcoholism (NCA) and the National Institute of Alcohol Abuse and Alcoholism (NIAAA), have defined criteria for alcohol dependence that are interrelated to varying degrees.\textsuperscript{2,4} The various organizations could not agree upon a single description of alcoholism since alcoholism possess multifarious symptoms, produces significant consequences, and results in adverse effects upon individuals and society alike. Two concepts remain apparent: alcoholism is not normal; and alcoholism is a disease.\textsuperscript{4} Normal is defined as “conforming with or constituting an acceptable standard.”\textsuperscript{5} Disease is defined by a “definite process having characteristic traits of signs and symptoms, affecting one or more organ systems and whose etiology is either known or unknown.”\textsuperscript{4}

\textbf{Prevalence and Problem}

According to the latest statistics by the NIAAA, 7.41\% of persons eighteen years or older meet the criteria for alcohol abuse or dependence.\textsuperscript{6} The annual socioeconomic costs for the United States is estimated at $90 billion for alcohol abuse and dependence.\textsuperscript{7} Alcohol is a significant factor in injuries and deaths from fires, drownings, falls and automobile accidents.\textsuperscript{8} Alcohol use can increase the risk of liver, stomach and esophagus cancer. The use of alcohol during pregnancy can result in Fetal Alcohol Syndrome which causes physical deformities and mental retardation.

It is estimated that 20-40\% of people admitted to hospitals are admitted for complications related to their alcohol usage.\textsuperscript{9} It is not uncommon for people to go undiagnosed for alcohol abuse or dependence when being admitted to hospitals.\textsuperscript{10} Admissions to emergency rooms for traumatic injuries are largely related to alcohol use. Two-thirds of the traumatic brain injuries (TBI) are a result of alcohol abuse and/or dependence.\textsuperscript{11} The use of alcohol has been shown to be an antecedent to
many spinal cord injuries (SCI). Thirty-six percent of SCI patients were chronic alcohol users at the time of their injury.\textsuperscript{12}

It is not uncommon for an alcohol dependent person admitted to a hospital for one reason to then develop complications that may be related to their alcohol usage and not necessarily to their original diagnosis.\textsuperscript{8} For example, the patient may exhibit signs of delayed wound healing or prolonged recovery.\textsuperscript{9} The patient may experience withdrawal symptoms or require large amounts of pain medication due to their increased tolerance level. Patients that abuse alcohol or are alcohol dependent are at risk for medical complications and will make repeated visits to hospitals if left untreated.\textsuperscript{8}

**Absorption and Metabolism**

Ethyl alcohol is an organic compound (C\textsubscript{2}H\textsubscript{5}OH) that is miscible in water and fat soluble.\textsuperscript{13} Alcohol is made from the enzymatic reaction of sugar during the fermentation process. Distillation is a process whereby the water from the fermentation process is evaporated and the result is an increased concentration of the alcohol. When alcohol is ingested in the human body, it does not need to go through any chemical transformation. Alcohol is hydrophillic and, therefore, is readily and rapidly absorbed by the mucosa of the stomach and small intestines.\textsuperscript{13,14} Alcohol then rapidly enters the bloodstream whereupon it permeates every cell in the human body. The rate of absorption of alcohol depends on a variety of factors. For example, alcohol absorption is affected by the presence of food in the stomach and certain medications by interfering with stomach enzymes which then induces a higher blood alcohol levels.\textsuperscript{15,16}

The alcohol molecule wreaks its most toxic effect on the nervous system and is considered a neurotoxin.\textsuperscript{13,15} Due to the nature of its fat solubility and affinity for
water, alcohol is not intercepted by the blood brain barrier and, therefore, easily enters the brain. Alcohol interferes with the transport of sodium ions and decreases the frequency of the action potential in the nerve cell. Because alcohol is fat soluble, it penetrates the nerve cell membrane and alters the function of the membrane proteins. Unlike many other drugs, alcohol has no specific receptor sites and therefore, it becomes involved with many biomechanical processes and produces toxic effects. Refer to Table 1 for blood alcohol levels (BAL).

**TABLE 1.1**

**BLOOD ALCOHOL CONSUMPTION COMMON SIGNS AND SYMPTOMS**

<table>
<thead>
<tr>
<th>Blood Alcohol Consumption</th>
<th>No. of Drinks</th>
<th>Signs &amp; Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.02 to 0.05 %</td>
<td>1-3</td>
<td>Impaired sensory function and mentation, muscular incoordination, euphoria and changes in mood and behavior</td>
</tr>
<tr>
<td>0.1 %</td>
<td>4-6</td>
<td>Slurred speech, decreased balance, incoordination, staggering gait, impaired driving, increased reaction time to visual stimuli</td>
</tr>
<tr>
<td>0.200-0.299 %</td>
<td>7-10</td>
<td>Nausea and vomiting, diplopia, extreme clumsiness, inability to remain upright without support</td>
</tr>
<tr>
<td>0.3 - 0.399 %</td>
<td>11-17</td>
<td>Cold, clammy skin, heavy breathing, amnesia, anesthesia</td>
</tr>
<tr>
<td>0.4 - 0.499 %</td>
<td>18-25</td>
<td>Decreased action of respiratory centers of central nervous system, coma</td>
</tr>
<tr>
<td>0.5 %</td>
<td>25-30</td>
<td>Death</td>
</tr>
</tbody>
</table>

*Varies with level of tolerance, ingestion of food, etc.*

*Drink equivalents: one 12 oz. beer = one 4 oz glass wine = one mixed drink with 1.5 oz of distilled liquor (86 proof).*


The average rate of absorption for a 155 lb. man for example, is 10 milliliters (eight grams) per hour. Blood alcohol levels peak within approximately 50 minutes to three hours after heavy consumption ends. Most adults need six hours to metabolize 50 grams (five drinks) of alcohol. Women become intoxicated faster than
men due to body fluid composition. Women tend to have more fat than men and alcohol absorbs ten times faster in body fluids than in fat tissue. The longer alcohol takes to absorb, the longer it stays in the blood stream. A person with a greater fat content will achieve a higher blood alcohol level than a person who has more muscle mass.

**Why People Drink Alcohol**

Typically, when some people first use alcohol, they use it for psychological reasons. People drink to relax or become more social, because they are happy or sad, and to celebrate events such as birth and death. Alcohol is a central nervous system (CNS) depressant. People generally enjoy the inhibitory effects of the CNS. Alcohol use allows the person to reduce stress and anxiety and become more social in situations where they may be unlikely to do so otherwise. Social use of alcohol may lead to psychological dependence on the drug.

Psychological dependence may or may not progress in physiological dependence. Physiological dependence is evident when a person experiences withdrawal symptoms after cessation of alcohol use. The CNS becomes familiar with functioning in an alcohol induced depressed state and when the alcohol is withdrawn, there is a rebound effect resulting in CNS hyperactivity. This hyperactivity may range from anxiety and irritability to tremors, hallucinations, and in some cases, convulsions.

There are any number of reasons why people drink, but no one reason explains the addictive nature of the mind regardless of the potential for disastrous outcomes. It is thought that the addictive properties of the brain are centered in the lower, more primitive brain. Alcohol depresses the higher centers of the brain, thereby diminishing the ability to control the compulsion to drink. The addiction to alcohol is
the fundamental trigger for the ‘drive to drink’ without regard to the adverse consequences.

Genetics or Environment?

There have been several twin and adoption studies published regarding the inheritance or non-inheritance of alcoholism. Koopmans and Boomsa showed that inheritance plays a part in the development of alcoholism, as do environmental and cultural influences. It is known, that certain families have a higher susceptibility to the development of alcoholism, but the degree of genetic influence has not been defined. Research suggests that parental attitudes toward alcohol use influences adolescents’ behavior at a time when alcohol experimentation is most common. As the adolescent becomes older, however, environmental influences decrease and genetic factors increase.

Your Role as a Physical Therapist

Recognition and early detection of possible complications resulting from alcohol abuse/dependence or withdrawal will aid the therapist in providing quality health care as well as avoiding any potential harm to the patient. Supplementing the health history of a patient by integrating questions pertaining to health habits may prove to be beneficial to both therapist and patient. Appendix A provides the reader with terms and definitions pertaining to alcohol and addiction, as well as criteria set by the Diagnostic Statistical Manual of Mental Disorders. Some common physical signs and symptoms as well as withdrawal signs and symptoms can be found in Appendix B. Appendix C provides the reader with screening tests that may be useful for the practicing physical therapist for detection of alcohol abuse or dependence. It is the role of the physical therapist to offer available resources to a patient who may be experiencing problems with alcohol. A list of resources regarding alcoholism may be found in Appendix D.
References


Discussion Questions

1. Your patient states that he is anxious to leave the hospital regardless of his condition. He states he “has things to do”. You notice he has the “shakes” and is diaphoretic. His wife tells you that he drinks too much at home and she wants a divorce. What can you offer this family?

2. Your co-worker continuously calls in sick on Mondays and lately you have smelled alcohol on his breath after lunch. What should you do?

3. In taking a history, you notice that Mary has been on narcotics for six months to deal with her low back pain. She has not been progressing well and she states she is drinking vodka at home to help her pain. What are some alternative techniques you can offer Mary to help her cope effectively with her pain?

4. You witnessed your supervisor at the local bar several times and she was extremely drunk. Lately, she has asked you to cover for her in the morning because she is late. She frequently has “flu-like” symptoms and has been making errors with her paperwork. What should you do?

5. Your outpatient frequently cancels his appointments and when he does show up, he has slurred speech and a staggering gait. His eyes are red and you smell marijuana on his clothes. What are some recommendations you can offer him?

6. You are treating an individual for a severely sprained ankle. Weight bearing restrictions, edema reduction procedures and anti-inflammatory medications are part of his treatment program. He has attended two therapy sessions, in a state of intoxication. What should you do?
Appendix A
Appendix A

Addiction: requires evidence of tolerance and withdrawal.

Alcoholic: severe dependence or addiction with a pattern of behaviors associated with drinking alcohol.

AA: Alcoholics Anonymous. Support group for persons who have a desire to stop drinking.

Alcoholism: a chronic illness with unknown etiology, insidious onset, and recognizable signs and symptoms proportionate to its severity.

Blackouts: sudden loss of consciousness which may be the result of high blood alcohol levels. Sometimes referred to as an amnesia to the events that occurred during intoxication.

Delirium Tremens: hyperactivity of autonomic nervous system, with disorientation, confusion, delusions and visual and auditory hallucinations - caused by cessation of alcohol which typically appear 60-80 after cessation of alcohol.

Disease: must be describable, predictable, progressive, of primary origin, permanent and potentially fatal.

Illness: defined in terms of symptoms, diagnosis and behavior associated with illness.

Intoxication: occurs when high levels of alcohol are consumed and results in slurred speech, ataxic gait, nystagmus, dilation of pupils and impaired judgment.

Recovering Alcoholic: person who returns to normal functioning based on continuous abstinence from alcohol.

Relapse: intake of alcohol by a recovering alcoholic which usually leads to a return of abnormal drinking pattern and associated behaviors.

Social Drinking: consuming alcohol with friends but without acceptance of drunkenness.

Tolerance: the need to increase the dose progressively, in order to produce the same effect that was originally achieved by a smaller dose.

Withdrawal: when cessation or reduction of the drug causes two or more of the following: hand tremor, insomnia, nausea or vomiting, anxiety, pulse rate greater than 100, psychomotor agitation, grand mal seizures, or visual, auditory or tactile hallucinations or illusions.
Criteria for Substance Abuse

A. A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one (or more) of the following, occurring within a 12-month period:
   (1) recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use; substance-related absences, suspensions, or expulsions from school; neglect of children or household)
   (2) recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use)
   (3) recurrent substance-related legal problems (e.g., arrests for substance-related disorderly conduct)
   (4) continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights)

B. The symptoms have never met the criteria for Substance Dependence for this class of substance.

Criteria for Substance Dependence

A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

(1) tolerance, as defined by either of the following:
   (a) a need for markedly increased amounts of the substance to achieve intoxication or desired effect
   (b) markedly diminished effect with continued use of the same amount of substance

(2) withdrawal, as manifested by either of the following:
   (a) the characteristic withdrawal syndrome for the substance (refer to Criteria A and B of the criteria sets for Withdrawal from the specific substances)
   (b) the same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms

(3) the substance is often taken in larger amounts or over a longer period than was intended
(4) there is a persistent desire or unsuccessful efforts to cut down or control substance use

(5) a great deal of time is spent in activities necessary to obtain the substance (e.g., visiting multiple doctors or driving long distances), use the substance, (e.g., chain-smoking), or recover from its effects

(6) important social, occupational, or recreational activities are given up or reduced because of substance use

(7) the substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., current cocaine use despite recognition of cocaine-induced depression, or continued drinking despite recognition that an ulcer was made worse by alcohol consumption)

Specify if:
   With Physiological Dependence: evidence of tolerance or withdrawal (i.e., either Item 1 or 2 is present)
   Without Physiological Dependence: no evidence of tolerance or withdrawal (i.e., neither Item 1 or 2 is present)

Appendix B

Physical Signs and Symptoms of Alcohol Abuse/Dependence and Withdrawal

Withdrawal Signs and Symptoms:
- elevated blood pressure - restlessness
- tachycardia - diaphoresis
- anxiety - sleep disturbances
- agitation - vomiting/nausea
- seizures - tremulousness ("shakes")
- hallucinations - delirium tremens (DT's)

Physical Signs and Symptoms:
- slurring or slowed speech - "shakes"
- untidy appearance - blank stare
- unsteady gait - "blood shot" eyes
- alcohol on breath - flushed face

Personality Changes:
- depressed - irritable
- resentful - suspicious
- defensive - threatens suicide
- anxious - abrupt mood swings
- withdrawn - argumentative
- violent - inappropriate sexual behavior
- inappropriate profanity

Unusual Changes in Lifestyle:
- consistently tardy - consistently sick on Monday
- risk taking - disregard for others
- job changes - problems at home
- difficulty with comprehension - high and low mood swings

Appendix C
Appendix C

Short Michigan Alcoholism Screening Test (SMAST)

1. Do you feel you are a normal drinker? (by normal we mean you drink less than or as much as most other people.) (No)
2. Does your spouse, parent or other near relative every worry or complain about your drinking? (Yes)
3. Do you ever feel guilty about your drinking? (Yes)
4. Are you able to stop drinking when you want to? (No)
5. Do your friends or relatives think you are a normal drinker? (No)
6. Have you ever attended a meeting of Alcoholics Anonymous? (Yes)
7. Has your drinking ever created problems between you and your spouse, parent or other near relatives? (Yes)
8. Have you ever gotten into trouble at work because of drinking? (Yes)
9. Have you ever neglected your obligations, your family, or your work for two or more days in a row because you were drinking? (Yes)
10. Have you ever gone to anyone for help about your drinking? (Yes)
11. Have you ever been in a hospital because of drinking? (Yes)
12. Have you ever been arrested for drunken driving, driving while intoxicated, or driving under the influence of alcoholic beverages? (Yes)
13. Have you ever been arrested, even for a few hours, because of other drunken behavior? (Yes)

For scoring, alcoholism is indicated by responses in parentheses: 5+ points places individuals in an “alcoholic” category; 4 points suggests problem for further evaluation; <3 indicates nonalcoholic.


Cage Screening Test for Alcoholism

1. Have you ever felt you out to Cut down on your drinking?
2. Have people Annoyed you by criticizing your drinking?
3. Have you ever felt bad or Guilty about your drinking?
4. Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover?

For scoring, one affirmative answer warrants further evaluation. Two affirmative answers suggest an alcohol abuse problem.

Appendix D
Appendix D

Alcoholics Anonymous World Services (AA)
PO Box 459
Grand Central Station
New York, NY 10163
(212) 686-1100

AA is an organization composed of individuals recovering from alcoholism. AA maintains that individuals can solve their common problems by sharing their experience, strength and hope with each other. The only requirement for membership is a desire to stop drinking. AA is located in over 100 hundred countries and every state in the United States.

Al-Anon Family Group Headquarters (ADPA)
Rockcreek Church Road and Webster Street
Washington, DC 20011
(202) 882-1334 or (800) 356-9996

Al-Anon aids to facilitate the promotion of legislation, exchange of information and maintains continuing education programs to aid families of those suffering from alcoholism. Al-Anon is usually available where AA is available.

Alcoholism Center for Women (ACW)
1147 South Alvarado Street
Los Angeles, CA 90006
(213) 381-7805

This center deals with women who are affected by alcoholism. Particular concern is the women who is at high risk. The center offers a variety of counseling services and community presentations.

Alcohol Research Information Service (ARIS)
1106 East Oakland
Lansing, MI 48906
(517) 485-9900

This organization collects information regarding alcohol and alcoholic products. It provides pamphlets for schools and compiles statistics.
American Council on Alcoholism (ACA)
White Marsh Business Center
5024 Campbell Boulevard
Suite H
Baltimore, MD 21236
(410) 931-9393
This organization emphasizes education, prevention, early diagnosis and rehabilitation of alcoholism. It seeks to provide public awareness.

American Council on Alcohol Problems (ACAP)
3426 Bridgeland Drive
Bridgeton, MO 63044
(314) 739-5944
This agency employs research, educational and legislative approaches for the prevention of alcoholism. It seeks long-range solutions to alcohol-related problems.

Drug and Alcohol Nursing Association
720 Light Street
Baltimore, MD 21230
(301) 752-3318
This association includes health professionals in the prevention, and treatment of alcohol addictions. It has up-to-date information in the field of addiction.

National Council on Alcoholism and Drug Dependence (NCADD)
12 West 21st Street
New York, NY 10010
(212) 206-6770 or (800) 475-HOPE
This association works toward the prevention and control of alcoholism through public and professional education.
Chapter Two

Medical Complications
Chapter Two

Outline

Objectives
Pre-test
Introduction
Consequences
Liver
Gastrointestinal Tract
Malnutrition
Skin
Nervous System
Seizures
Agitation
Cognition
Medications
Cardiovascular
Immune System
Summary
References
Appendix E - Vitamin B deficiency complications
Objectives:

By completion of this chapter, the student will be able to:

- demonstrate an understanding of the multiple medical consequences resulting from alcohol abuse/dependence

- outline the various liver changes that occur with alcohol consumption

- demonstrate an understanding that alcohol consumption in excess causes inflammations such as: hepatitis, pancreatitis, and gastritis

- describe the clinical presentations with regards to the gastrointestinal system and alcohol consumption

- differentiate between various clinical presentations concerning alcohol’s effect on the central nervous system and vitamin deficiency

- outline the stages of alcohol withdrawal

- describe the cognitive disturbances that take place when alcohol is a factor

- recognize that various medications are contraindicated with alcohol consumption

- demonstrate an understanding of the various complications concerning the cardiovascular system and recognize clinical signs and symptoms of “alcoholic heart disease”

- gain a better understanding of the immune system complications resulting from alcohol abuse/dependence
Pre-Test

1. Heavy alcohol consumption can disrupt the intake of important vitamins.
   a. true   b. false

2. Signs and symptoms of liver involvement may include:
   a. right upper quadrant pain
   b. nausea
   c. jaundice
   d. all of the above

3. Pain radiating to the back may indicate pancreatitis.
   a. true   b. false

4. The central nervous system is one of primary target organs that is most affected by alcohol.
   a. true   b. false

5. Alcohol withdrawal can occur anywhere from...
   a. 6-8 hours
   b. 24 hours
   c. 48 hours
   d. 3-5 days
   e. all of the above

6. If a person is experiencing alcohol induced agitation, this will probably not interfere with physical therapy.
   a. true   b. false

7. If a person is taking over-the-counter medications and consuming alcohol, this probably will not have a negative effect on the person.
   a. true   b. false

8. Drinking alcohol excessively decreases the low density lipoproteins, which decreases the risk for arteriosclerosis.
   a. true   b. false

9. Clinical signs and symptoms of alcoholic heart disease may include...
   a. rapid pulse
   b. jugular vein distention
   c. peripheral edema
   d. all of the above
   e. none of the above

10. The term "holiday heart" refers to:_________________________
CHAPTER 2
Introduction

Alcohol abuse is a major health concern and has a direct impact on the field of physical therapy.\textsuperscript{1} The alcohol dependent person may not be able to fully cooperate with physical therapy. Some of the complications arising from alcohol abuse or dependency for the patient and physical therapist may include; impaired tissue healing, the inability to cope with pain stress, prolonged recovery, lowered seizure threshold, interactions with certain medications, alcohol-induced cognitive and behavioral changes and damage to organ systems.\textsuperscript{1,2} Alcohol intoxication is known to be a significant factor in traumatic injuries, such as falls, motor vehicle accidents, assaults and burns.\textsuperscript{3} Multiple medical consequences exist with regard to the misuse of alcohol.\textsuperscript{2} Past research suggests that alcohol can actually worsen the effects of traumatic brain injury (TBI) as well as prolong recovery.\textsuperscript{4} As physical therapists, it is important to be aware of possible underlying medical complications as a result of alcohol abuse or dependence.

Consequences

The effect of alcohol on overall health is either: indirect, which is attributed to neglect and poor diet; or direct, which is attributed to the toxicity of alcohol.\textsuperscript{5} Many organ systems are damaged by the consumption of alcohol which increases the risk of multiple diseases as a result of alcohol ingestion. A brief overview of some of the medical consequences of various organ systems as a result of addiction to alcohol follows.

Liver

Alcohol is catabolized by the liver and changes the chemical environment which is responsible for the processing of various chemicals in the blood.\textsuperscript{6} As a result
of heavy alcohol consumption, the liver does not clear dead red blood cells. This results in a build up of bilirubin which then manifests itself as a jaundice appearance. The blood which moves from the gastrointestinal tract, is not purged of bacteria and thus, infections are more likely to occur. The liver stores and processes vitamins such as vitamin A, C, D and B-12. Heavy alcohol consumption disrupts the intake and storage of these important vitamins. Alcohol also inhibits liver production of certain proteins, blood clotting factors and substances which aid in the production of white blood cells.

Heavy drinking contributes to hepatitis, which is inflammation of the liver. Although research suggests a predisposition may be necessary for hepatitis, heavy drinking also contributes to this condition. Heavy alcohol consumption causes cirrhosis of the liver. Scar tissue in the liver (cirrhosis) makes it difficult for the blood to circulate. As a result of the scar tissue, vital liver functions are not performed properly.

Signs and symptoms of liver involvement may include nausea, vomiting, and right upper quadrant pain and tenderness. Patients may present with a jaundice appearance and ascites. It has been noted that the development of Dupuytrens contracture may occur as a result of liver disease.

**Gastrointestinal Tract**

Heavy drinking increases the risk for gastritis and gastrointestinal bleeding. The stomach enzymes do not operate efficiently, and transportation of nutrients is impaired. Despite the fact that an adequate diet is consumed by many heavy drinkers, malabsorption of calcium, thiamine, folic acid and vitamins A and B12 is likely to occur. Enhanced intestinal motility is often seen with heavy drinkers which contributes to diarrhea. Complaints of epigastric pain, nausea and vomiting may be indicative of gastritis. Alcohol consumption can also produce pancreatitis. Subjective complaints
of a steady, dull epigastric pain that may radiate to the back may indicate pancreatitis.

**Malnutrition**

Heavy alcohol consumption results in malnutrition.\(^6\) Whether or not this has to do with financial resources, the fact that some people choose to drink on any empty stomach, or that high blood alcohol levels depress the appetite has not been clearly defined. Suffice it to say that once malnutrition occurs, the person is at a higher risk for damage to many of the major organ systems.

**Skin**

Heavy drinkers usually exhibit facial edema, skin redness, bloodshot eyes and hypertrophy of the nose with a reddish appearance.\(^6\) High levels of bilirubin produce pruritis and finger nail production is altered by inefficient processing of proteins. The skin may also assume a dark or grayish hue due to the changes in the altered iron storage and changes in liver function.

**Nervous System**

The central nervous system (CNS) is one of the primary target organs that is most affected by alcohol.\(^8\) The adverse consequences of alcohol on brain function have been widely studied, both epidemiologically and clinically. Alcohol use, whether in excess or moderation, can have major effects on both the CNS and peripheral nervous system (PNS).\(^9\) Alcoholism is the second leading cause of organic brain syndrome.\(^6\) It is preceded by Alzheimer’s disease. Alcohol rapidly crosses the blood-brain barrier which causes blood alcohol and brain concentrations to equilibrate.\(^10\) Consumption of alcohol has been associated with nerve cell death. Dietary deficiency commonly seen with chronic alcohol use, causes demyelination and atrophy of the axons and dendrites. With abstinence from alcohol, however, the last two conditions are reversible. Thiamine deficiency causes deterioration of the caudate and thalamic
areas of the brain. The reader is referred to Appendix E for list of nervous system disorders that can result from vitamin B complex deficiency.

Patients found to have positive blood alcohol levels (BAL) at the time of their injury are at a greater risk for developing mass lesions associated with TBI.\textsuperscript{11} Chronic alcohol use is associated with brain atrophy, which damages the bridging vessels. Consequently, these vessels are more susceptible to tearing as a result of the diminished blood supply and a prolonged prothromin time often exacerbates any bleeding that occurs. It should be noted, however, that there are relatively few studies concerning the effects of social drinking, and the level of consumption at which health begins to deteriorate due to alcohol ingestion.\textsuperscript{6,12} Table 2.1 provides the reader with an easy reference to the stages of withdrawal.

\begin{table}
\centering
\caption{Stages of Alcohol Withdrawal}
\begin{tabular}{|c|c|c|}
\hline
\textbf{Stage} & \textbf{Onset} & \textbf{Signs and Symptoms} \\
\hline
1 & 6-8 hours & anxiety, nausea, insomnia, tremors \\
& & diaphoresis, restlessness, vomiting \\
\hline
2 & 24 hours or may be delayed 6-8 days & persistent stage 1, hallucinations, disordered perception \\
\hline
3 & 7-48 hours & seizures \\
\hline
4 & 3-5 days & delirium tremens, fever, tachycardia, hypertension, global confusion, increase agitation, combativeness \\
\hline
\end{tabular}
\end{table}

Adapted from: Kortyna R. The effects of alcohol on the nervous system. Physician Assistant. 1985;78-86.

**Seizures**

Grand mal seizures are known to occur at any stage of alcohol withdrawal including when alcohol is still in the system.\textsuperscript{6} It is not exactly clear what causes the seizures, but research suggests that it may be attributed to an accumulation of sodium
in the CNS, changes such as respiratory alkalosis, or hypoglycemia. Alcohol withdrawal is not a specific condition but a term used for a wide spectrum of signs and symptoms following the cessation of alcohol.13

**Agitation**

Patients who were intoxicated prior to their traumatic injury were found to have a longer duration of agitation.4 A longer duration of agitation interferes with the patient’s ability to benefit from physical therapy, occupational therapy and speech therapy. Agitation is usually treated with medication, which slows cognitive functioning. This may result in decreased concentration and compliance, which may interfere with physical therapy treatments.

**Cognition**

Cognitive disturbances related to alcohol usage are associated with morphological brain injury which show cortical and subcortical pathology.8 Most alcoholics are cognitively impaired during intoxication and for several weeks following detoxification. It is estimated that 50-70% of detoxified alcoholics display cognitive deficits.6 Some typical findings include: delayed reaction time, impaired short-term memory, delayed psychomotor speed, poor tactile recognition and slower response to visual and auditory stimuli. Patients who were intoxicated prior to their injury and hospitalized, demonstrated a lowered global cognitive status at the time of discharge.4 Sparadeo and Gill4 reported that persons with a positive blood alcohol level scored lower on the Rancho Los Amigos Scale as compared to persons who were not intoxicated. This study, however, did not predict the outcome of long-term recovery but did imply that persons intoxicated at the time of their injury have a more complicated acute recovery and poorer outcomes. With continuous abstinence from alcohol, it has been noted that cognitive functioning will improve.6
Medications

Alcohol intoxication adversely affects many medications. Acute alcohol intoxication can slow down hepatic metabolism of certain medications which can cause an increase in the drug level. Chronic alcohol intoxication, however, can increase hepatic metabolism, thereby adversely accelerating drug clearance. Some people may have adverse reactions to medications while intoxicated that require admission to hospitals. In the absence of knowledge by some health professionals regarding alcohol abuse and or dependence, certain signs and symptoms of alcohol-drug interactions may be wrongly interpreted. For example, a patient may be experiencing tremulousness as a result of alcohol-drug interaction and this could be wrongly interpreted as Parkinson's disease. Medications such as antidepressants, anxiolytics, neuroleptics, benzodiazepines and anticonvulsants and several over-the-counter medications are contraindicated with alcohol ingestion.

Cardiovascular

Research has shown that drinking alcohol in moderation decreases the low density lipoproteins (LDLs) and increases the high density lipoproteins (HDLs). It has been proven that HDLs decrease the risk for arteriosclerosis and LDLs increase the risk of arteriosclerosis. However, for persons who drink in excess, alcohol poses potentially harmful effects on the cardiovascular system. Acute and chronic alcohol ingestion has shown to decrease myocardial contractility. Chronic alcohol consumption has been shown to cause cardiomyopathy. Cardiomyopathy progresses to a decline in cardiac function and congestive heart failure. The amount of alcohol consumption required to develop cardiomyopathy has not been clearly defined, but research suggests that pathological changes occur after five ounces of alcohol daily (a six-pack of beer or one pint of whiskey) for a period greater than five years. Once alcoholic myopathy develops, the prognosis is poor unless the patient abstains from
alcohol and is treated with medication. A decrease in cardiomegaly and improvement in cardiac function will usually occur after digitalis therapy and prolonged cessation of alcohol. Patients with alcoholic heart disease may present with clinical signs and symptoms such as: rapid pulse, jugular vein distention, elevated diastolic blood pressure, bibasilar crackles, peripheral edema, dyspnea and palpitations. Alcohol can cause vasodilation and produce a “flushed appearance”, which causes rapid heat loss. Subjectively, the patient feels warmer, but actually, the core body temperature can decrease to dangerous levels. Ettinger, et al reported a relationship between new onset cardiac arrhythmias and heavy drinking that occurs around Christmas and New Years and named the term “holiday heart.”

**Immune System**

The coughing reflex and the white blood cell’s ability to phagocytize the coughed up material are compromised in the person who is a heavy alcohol drinker. The compromised immune system results in an increased susceptibility to bronchitis, pneumonia, lung abscesses and tuberculosis (TB). Gurney, Rivara, et al found that intoxicated patients are 40% more likely to be treated for pneumonia, require intubation, have a higher risk of aspiration and nosocomial infections than non-intoxicated patients. The need for intubation, however, may be a result of the necessity to use paralyzing agents due to combativeness of the intoxicated patient. This precaution may be used prevent further injury to the patient as well as emergency room staff members.

**Summary**

Recognition and detection of the patient who may be experiencing secondary complications as a result of alcohol abuse/dependence or withdrawal is critical for providing quality health care. Physical therapists need to be aware of the many
complications and presentations that an alcoholic dependent person may display while in the hospital for an entirely different diagnosis. Chapter two provides the reader with a variety of clinical presentations and possible complications as a result of alcohol abuse or dependence. It is the responsibility of the physical therapist to alert the attending physician to any suspicions of alcohol abuse/dependence or withdrawal.
References


Appendix E
Appendix E

Wernicke's Encephalopathy

1. caused by thiamine (vitamin B₁) deficiency
2. acute onset triad of ocular abnormalities, ataxia and global confusion
   a. ocular
      1. bilateral lateral gaze nystagmus is most common
      2. bilateral paralysis of lateral rectus muscle
      3. sluggish pupillary responses, anisocoria, ptosis, retinal hemorrhage, and papilledema
   b. ataxia
      1. wide-base stance and gait
      2. inability to walk
      3. trunkal ataxia
   c. global confusion
      1. cognitive impairment
      2. inattention
      3. memory deficit

Korsakoff's Syndrome

1. residual damage of Wernicke's encephalopathy
2. retrograde and anterograde amnesia
3. confabulation
4. apathy and indifference
5. alert with adequate reasoning abilities
6. cerebellar ataxia

Cerebellar Deterioration

1. intentional tremor
2. wide-based gait
3. dysarthria
4. nystagmus
Peripheral Neuropathy

1. deficiency in B complex vitamins
2. lower extremity involvement, but may also include upper extremity
3. gradual, insidious onset of:
   a. pain - dull ache; tightness in muscles; cramps
   b. paresthesias - glove-stocking distribution
4. severe cases may include motor involvement
   a. loss of Achille’s deep tendon reflex
   b. atrophy and weakness of lower extremity muscles - symmetrically
5. may include:  postural hypotension; excessive sweating on soles of feet and volar surface of hands

Chapter Three

Physical Disability and Psychological Aspects
Chapter Three

Outline

Objectives
Pre-test
Annie's Dance
Introduction
Disease Concept
Theories
Dependency
Psychological Dependency
Defense Mechanisms
Emotional
Self-Image
Physical Disability
Dual Disability
Treatment of Chemical Dependency/Alcoholism
References
Objectives:

By completion of this chapter, the student will be able to:

- demonstrate an understanding that physical therapists can play an important role in recognizing people with alcohol-related problems

- define the disease concept of alcoholism

- describe the different theories pertaining to addiction

- demonstrate an understanding of the concept of dependency

- define psychological dependency and how it affects a person

- recognize common defense mechanisms

- gain knowledge regarding the emotional state caused by the use of alcohol and other substances

- demonstrate an understanding of self-image and how it affects the addicted person

- outline the role of the physical therapist pertaining to the person with a dual disability

- recognize that alcohol or other substances may be a contributing factor to the physical disability and the challenge facing the physical therapist

- gain knowledge regarding the treatment process of recovery for the chemically dependent/alcoholic patient
Pre-Test

1. Alcoholism is primarily a personality disorder and not a disease.
   a. true   b. false

2. Most alcoholics are “skid row” bums.
   a. true   b. false

3. Which theory suggests that alcoholism is a learned behavior.
   a. Freud's theory
   b. dynamic theory
   c. learning theory

4. Psychological dependency affects which portion of a person.
   a. spiritual
   b. social
   c. volitional
   d. emotional
   e. all of the above

5. Defense mechanisms involve all of the following but...
   a. denial
   b. rationalization
   c. physiological
   d. justification

6. Some people use alcohol to express...
   a. anger
   b. fear
   c. anxiety
   d. all of the above

7. Generally, people who are chemically dependent have high self images of themselves.
   a. true   b. false

8. It is important for physical therapists to recognize clinical signs and symptoms chemical dependency.
   a. true   b. false

9. When questioning a patient about past history of alcohol or drug use, one should ask the question in a shameful manner so as to elicit an honest response.
   a. true   b. false
A Personal Story

Annie's Dance

Dark cold winter night
mom brought sister home wrapped tight.
Earliest memories at age four
.Acorns tasted good beside gold colored home.
Cows in small barn with horns colored with shoe polish.
Incest by brother age nine during
warm summer and autumn nights.
Hide in closets - forts - and hayloft.
Away from home much of the time.
Mom and sister rolling on the floor
Blood -- Hair brush or wooden spoon broke over
my head. Away from home. Ride horse -
hide. Make believe Snowfire would take me away.
Dad not home much of the time. Farming?
No structure, no limits, no safety, no love.
Fifth grade. Dad went to Seminary to learn God's way.
Did he care? No limits, no safety, no care.
Sister - many boyfriends. Oldest brother gone.
Don't remember much.
Boyfriends in every grade.
Vaginal touch fifth grade.
Moved to cities tow years.
Began my drinking at age twelve.
Two sets of friends - good and bad.
Locked out of home when drunk in seventh grade.
Slept under the stairs and in the apartment halls.
Lucky I was never raped. Sexual behaviors increased.
Moved to Fergus end of seventh grade
Trampoline.
Boyfriend John.
Got my period - no talk from mom.
"Born to be Wild" was my song.
Hated being "preacher's kid."
Moved to small Minnesota town.
Met Cindy and Sharon. Love them to this day.
Continued to drink and screw around.
Intercourse at age fourteen.
Sex with Kevin and many more.
Cheerleader four years.
Buckle-end belt - black and blue
bruises felt.
Do not Cry! Do not Cry!
Harden my Heart.
Survive!!
Chris - first love
Love him I did - still do.
Unable to be monogamous. He met another - became father.

Drunk most of the time. Trying to lessen the feelings and deaden the shame.
Dad tells me about sex at age sixteen.
Joke!! Way too late.
Where was he when I was nine?
Mom where was she?
Consumed with her martyrdom.

Drunk most of the time.
Graduation, don't remember much, too many beers.

God where were you??
I was used and abused by others and myself. No self care. Who would I have learned from?
Started nursing school
Worked and studied in a bar.
Alcohol the priority, my lover.
Asked to leave school.
Lost, didn't know what to do.
Joined the Army.
How many men had I slept with? Lost count.
Couldn't tell you their names. Wanted Love! Love! Love! Just to be Loved!
I needed to believe I was lovable.
I didn't believe I was worthy.
Drank, used and screwed.
I hurt! So lonely. So Sad.
Do Not Cry.
Harden my heart. No tears.
Survive!!

Mother at age nineteen.
I didn't know how.
Married at age twenty to a tall-handsome man.
He would be a father to my son and attempt to settle me down. Be my father. Love me. Care for me.
He did not know that Alcohol was more important than him. So sad.
I loved him - still do - always will.
Two more children, marriage maintained.
Drank - no communication - Drank.
Stole money from children.
Drank - drank - drunk - drunk!
Shakes in the morning. Couldn't remember last night.
Drank to dull the feelings and lessen the shame.
No self care. No sense of spirituality. What God would care?
I hurt! I didn't care.
Tired of the pain, the lies, life the way it was.

Fear of change. Needed something different.
Needed to stop the need for and the love for alcohol.
Needed to care about me.
Fear of facing myself, the pain, and the pain.
Which was worse? Drinking to dull the feelings and lessen the same or
Facing myself and the pain I had endured.

I am in Recovery. Have been over a decade.
Life is hard.
Spiritually, emotionally, and physically I care for myself
As best I can.
Life is wonderful. Life is hard.
Cry, cry, cry, soften my heart.
Survive! Live!
With friends and a Higher Power.
CHAPTER 3

Introduction

There is a valuable role to be played by healthcare professionals in the care of people with alcohol-related problems. Improving the education and clinical training with respect to these patients will undoubtedly improve recognition of and responses to patients with alcohol-related problems. Physical therapists spend a great deal of time with people in acute care, long-term rehabilitation, as well as outpatient and home health care environments. Lack of accurate information and knowledge with regard to alcohol abuse or dependence will perpetuate negative views of patients with alcohol-related problems. Riley concluded that healthcare professionals do not have positive attitudes towards patients presenting with alcohol-related problems. It is essential to update healthcare professionals’ knowledge with regard to alcohol abuse/dependence so they can develop the necessary skills to confront and intervene effectively. It has been shown that the patient’s own negative self-image and drinking behavior may be reinforced by the negative attitude of the healthcare professional.

Disease Concept

There is continued debate as to whether alcoholism is a disease. Confounding this concept is the conflicting research that suggests: 1) there are biological factors associated with a predisposition towards alcoholism; and 2) alcoholism is a personality disorder. What cannot be disputed, however, is the prevalence of alcohol-related accidents, medical complications and financial losses that the misuse of alcohol imposes on the individual, on the medical community and on society. Wallace provided clear scientific evidence to support the genetic theory argument. Perception of alcoholism as a disease can have a positive effect on the alcohol dependent patient. Placing the loss of control and inability to abstain from alcohol in
the context of a disease normalizes and legitimizes the reasons for abnormal drinking patterns. The disease concept also provides hope that recovery from alcoholism is possible and probable with appropriate recognition, intervention and treatment.

Most people, including the medical community, believe that chemical dependence is a weakness rather than a disease. The fear of accusing the patient of "bad behavior" prevents the patient from receiving a proper diagnosis of addiction. The myth that most alcoholics are "skid row bums" prevents the healthcare professional from recognizing early stages of the disease of alcoholism. Only 3% of chemically dependent persons fit this "bum" stereotype, the remaining 97% are employed and for all appearance seem to be functioning normally in society.

Theories

The literature suggests that there are a multitude of theories as to the etiology of alcoholism. Some of the theories as to the causes of alcoholism include: genetic neurophysiological, psychological, sociological, pharmacological, cultural, political and economical. This section will deal primarily with the psychological theory as to explain the inner experience of the alcoholic and how the disease of alcoholism manifests itself psychologically.

Freud's theory suggests that masturbation is the 'primary addiction' and that other addictions in life are a substitute and replacement for it. Freud's theory highlights the narcissistic nature of addiction. With masturbation, one's love object is oneself and with alcoholism the love object is the alcohol. Freud's theory mentions the loss of self-esteem one experiences when giving up the addiction. The loss of self-esteem requires more of the addictive substance in order to raise the lowered self-esteem.

The learning theory suggests that alcoholism is a learned behavior. The
person drinks to avoid anxiety, stress and adverse situations. The alcohol is used to feel good, reduce anxiety, increase self-esteem and reduce guilt. Learning theorists believe that a behavior that is intermittently reinforced is resistant to extinction. Over time, drinking no longer produces positive pleasure, yet the drinking continues. Learning to drink occurs as a part of growing up in a certain culture. Youthful drinking occurs as a result of family, peer, media and social influences which shape the beliefs, expectancies and behavior of alcohol usage.

The dynamic theories suggests that persons who drink have a need for power. The power is egotistical in nature, not social. The dynamic theory suggests, also, that alcoholics are people who have not established healthy patterns of interdependence. This theory is called the dependency conflict theory. It states that alcoholics suffer from conflict over how to meet their dependency needs and they turn to alcohol in an attempt to meet this unconscious conflict.

**Dependency**

A person who has a strong need for acceptance and approval from others is pathologically dependent on others. This person has a strong desire to manipulate approval and acceptance from others such that they become sick in their futile efforts to control others. Just as the abnormally dependent person has the need to seek approval and acceptance from others and the rewarding experience it offers, the alcoholic, too, gradually becomes subjected to the power and rewarding experience he/she receives from the alcohol. Psychological dependence can thus be defined as an irrational need to rely on the alcohol (drug) in expectation of achieving a rewarding psychophysical experience such as changes in feelings, mood and mind.

**Psychological Dependency**

Psychological dependency affects the ‘whole person’ in a variety of ways. The spiritual powers such as the personal values and the values of others are marred. The
mental powers such as intellect, imagination and memory are impaired. The volitional powers including the freedom to choose and the responsibility to control behavior are affected. The emotional powers including the pursuit and avoidance responses that arise from psychosensory and suprasensory affect are impaired, as well. The social powers and the ability for person-to-person relationships as well as community relations and overall communications are damaged.

**Defense Mechanisms**

The addictive person utilizes defense mechanisms that allow the person to continue with the addiction. The person's self-esteem is adversely affected as a result of impairments associated with addiction. Denial is a defense mechanism that is strongly used by the alcohol dependent person. Denial is thought to be the "fatal aspect" of the disease of addiction. Denial is a refusal to acknowledge what is obvious to other people. An example of denial is insistence of not being drunk, meanwhile demonstrating staggering of gait and slurring of speech. Rationalization is another defense mechanism commonly used by the alcohol dependent person. Rationalization refers to justifying attitudes or behaviors that might otherwise be unacceptable by incorrect application of reasons. An example of rationalization is the person who gets fired from a job as a result of drinking and justifies this by stating the boss is an idiot. Intellectualization is another defense mechanism utilized by the addicted person. This is referred to as an excess of thinking to avoid anxiety caused by unacceptable impulses or behavior. An example of intellectualization is an avoidance of guilty feelings by philosophically arguing that the drunk driving laws should be eliminated.

**Emotional**

Certain emotional states may be caused by the physiological effects of alcohol on the CNS, or may be exacerbated by the chronic use of alcohol, such as depression
after losing a job, or losing a family. The use of alcohol may exaggerate or distort emotions. The use of alcohol inhibits the person from naturally feeling and expressing emotion. Many people use the alcohol in order to express their emotions such as anger. If a person uses alcohol to escape anxiety or fear, then that person is not dealing with these emotions in a healthy way.

**Self-Image**

Self-image is the picture we have of ourselves as a result of comparing our behaviors and conduct with the standards we have developed for self-measurement. These standards are our value standards. We strive to live up to our standards or ideals and to act in ways to improve ourselves to achieve our life goals. A person with high self-image has a feeling of personal security, a sense of self-identity and an awareness of personal integrity. A common problem with alcoholics and the chemically dependent person is low self-image. Low self-image may result from downgrading received in infancy and childhood or it may result from violating one's value system in adulthood. As the addiction cycle progresses, and the consistent violation of one's value system continues with the alcoholic. What remains of self-worth gradually erodes as the person loses control over his/her life. A person with low self-worth may be intelligent, attractive and successful and still feel unworthy of accomplishments achieved.

**Physical Disability**

The inappropriate use of alcohol can contribute to the onset of disability and adversely affect rehabilitation outcomes including functional ability and maintenance of independent living. The process of learning new information may be impaired if a person with a physical disability is under the influence of alcohol and other drugs. Physical therapists may feel unqualified to address alcohol-related issues, just as the addiction counselors may feel unqualified to deal with physical disability issues. It is
important to enhance the exchange between the various specialties so that the person
with a “dual-disability” (addiction and physical disability) can benefit from
simultaneous rehabilitation activities which provide the necessary information and
skills to make the transition from hospital to home more successful.

Persons with physical disabilities often require medication to control pain
syndromes, muscle spasms and sleep problems. The person who was intoxicated at
the time of injury may be at a higher risk for abuse of medications such as narcotic
analgesics and sedative-hypnotics. One of the best indicators of addiction is a past
history of addiction. Questions concerning past drug and alcohol use, and any family
history of such abuse should be routinely asked. The questions posed should be
asked in a matter of fact, non-judgemental fashion. Substance abuse as a secondary
complication should be recognized by the physical therapist in order to enhance
rehabilitation outcomes and minimize morbidity. Impaired muscle coordination and
judgment as a result of alcohol use while taking sedatives, hypnotics, antianxiety
drugs and antidepressants are increased. Substance misuse has been implicated in
falls from wheelchairs and gastrointestinal bleeding. The person who abuses
medications may be contraindicated from the use of diazepam for the treatment of
spasticity. The individual who abuses both alcohol and drugs is at a higher risk for
development of pressure sores and often lacks the follow-through for bladder
catheterization procedures resulting in an increased risk for infection. These are but a
few of the complications a person with a dual-disability faces.

Dual-Disability

For many people with physical disabilities, chemical dependency may impose a
greater limitation than the physical impairment. The physical disability is often a
symptom of the disease of chemical dependency. A great deal of time, money and
energy are spent on the physical rehabilitation and the issue of chemical dependency
goes unaddressed. Failure to address the chemical dependency will often result in failure of the physical rehabilitation. The person with a dual-disability will often face many feelings of frustration, anger, inadequacy, as well as physical exhaustion. Persons with combined disabilities are often viewed as hopeless, fragile, pitiful and sick. They are viewed as incapable of taking responsibility for their lives and may require mood-altering chemicals to function, often exacerbating instead of alleviating the problem of rehabilitation. The use of alcohol and mood-altering chemicals will inhibit the person with a disability from the natural grieving process that must be experienced in order to accept the disability. Chemically dependent persons with disabilities need to be educated on alternative methods of coping with chronic pain, sleep disorders, spasticity and stress. Physical therapists can assist the patient in relaxation exercises, biofeedback techniques, exercise therapy, stretching, the use of hot and cold packs, whirlpool and massage as alternative methods of coping with the physical disability. The patient will then take an active role in the rehabilitation process and gain self-esteem, self-respect and self-responsibility. The patient will experience better overall health as a result of active participation as opposed to passive ingestion of chemicals.

**Treatment of Chemical Dependence/Alcoholism**

The first step in the treatment process of chemical dependency/alcoholism is to get the addict to admit they have a problem and agree to treatment. Once the person willingly agrees to treatment, there are generally three options- inpatient treatment, outpatient treatment and support groups such as Alcoholics Anonymous (AA).

The aim of treatment is to 1) learn information concerning alcohol and other drugs, 2) accept the disease of addiction, 3) understand what it means to be addicted, 4) learn how to identify feelings and deal with them in a rational manner, 5) assume responsibility for inappropriate behavior, 6) learn to cope with stress in a more...
appropriate manner, 7) eliminate maladaptive behavior patterns and substitute more adaptive behavior patterns, 8) become more physically active, 9) become familiar with support groups, and 10) learn risk factors for relapse and prevention of relapse.³

Some patients may require a period of detoxification, which is usually handled in a controlled environment supervised by a physician.³ Most patients require some type of psychosocial assessment. The Minnesota Multiphasic Personality Inventory (MMPI) is the most commonly used assessment tool. Once the patient is in a controlled treatment facility, the process of rehabilitation typically includes a daily schedule of group therapy, individual therapy, recreational therapy, relaxation therapy, spirituality lectures, coping skills lectures, peer assessment, and free time. Usually, there is a “family-day”, whereupon the family members can learn more about the disease of addiction and confront the family member with their grievances about past behaviors. The inpatient program takes approximately 28 days to complete. The outpatient program allows the person to go home at night, but he/she must return each day for a full day program. Once the patient is discharged, there is generally a period of “after-care”. The patient now has learned the “tools for living” and is required to follow a program of abstinence and regular attendance at AA meetings or other support groups aimed at recovery from addiction.
References


