SWK 5805: Psychological Theories of Addiction

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Contents

Module 4: Introduction

These readings introduce concepts essential for understanding many of the psychological theories of addiction, as well as how neurobiology and psychology intersect. This online textbook includes content prepared by the book's author, as well as several readings from the published literature.

Module 4 Reading Objectives

After engaging with these reading materials and learning resources, you should be able to:

- Explain substance use disorders and addiction from multiple psychological theories;
- Identify the ways that neuropsychology and cognition intersect in explaining substance use disorders and the problem of cravings;
- Recognize how cognitive and learning theories are applied in cognitive behavioral therapy (CBT) approaches;
- Explain the origins of our expectancies about substance use and how expectancies relate to decisions about use, misuse, and not using;
- Define several key terms related to substance use.

Ch. 1: Introduction to Psychological Models of Addiction

Over the years, psychological principles have contributed to the development of many theories about substance use disorders and addiction. ***Learning theories*** represent one set of psychological principles that have had a strong influence on our understanding of the causes of addiction, as well as informing some of our intervention strategies. Relevant learning theories include both operant and classical conditioning principles.

The ***classical conditioning*** process helps explain why stimuli in the environment or sensations originating from inside the body often trigger a person's ***craving*** for a substance. Certain areas of the brain may be triggered just by seeing the paraphernalia used to administer a drug, inducing an intense craving for the drug. This is no different, really, from Pavlov's dogs learning to associate food with the ringing of a bell through classical conditioning, and drooling over the previously irrelevant sound. The craving trigger stimulus from the environment might involve any of the five senses: hearing, seeing, touching, smelling, or tasting. Or, craving may be triggered by familiar internal states (like anxiety, depression, loneliness) that were previously alleviated by taking drugs.

Operant conditioning is all about rewards and punishments. A person might use a drug for the first time and enjoy the feelings it creates, which is a ***positive reinforcement*** for the behavior. Similarly, the person might find that the drug decreases a negative feeling like pain, low mood, or anxiety. This, too, would be reinforcing—what we call ***negative reinforcement***. These basic learning theories are taken a step further with an understanding of ***social learning theory***. A person does not necessarily have to experience the rewards and punishments themselves; learning also happens by watching others engage in the behavior and seeing what happens to them.

Through ***observational learning***, we learn to imitate both the precise behaviors and general classes of behavior modeled by others in our social environment. In other words, a person might not imitate a parent who uses alcohol for relaxation from stress (the specific or precise behavior) but imitates the general class of behavior being modeled by using marijuana this way.

This concept leads to another set of psychological principles in addiction: drug or alcohol ***expectancies***. Expectancies are the set of beliefs individuals develop regarding how using these substances might affect them. A person develops expectancies from many sources: other people, television,

movies, music, news, social media, and others, including their own personal prior experiences with the drug.

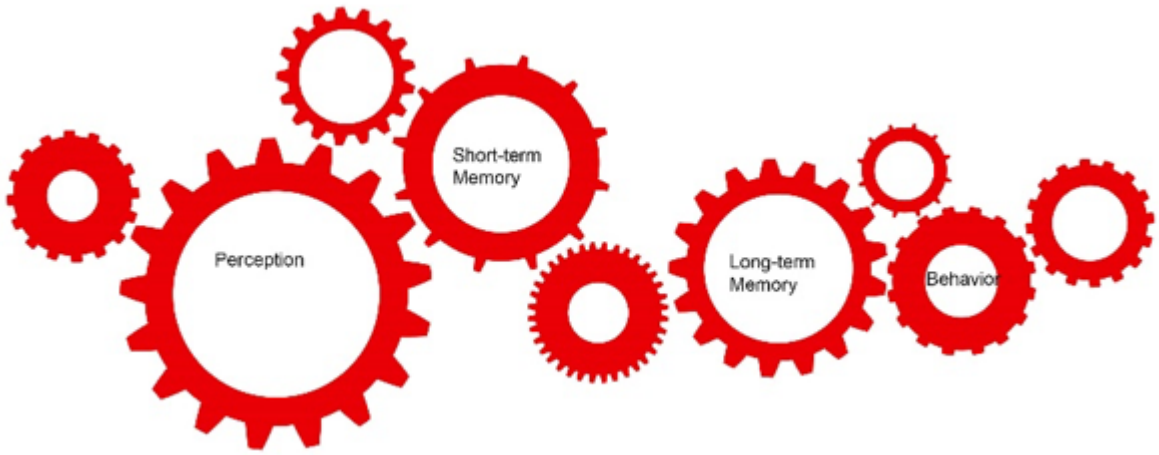
Even young children have been shown to develop both positive and negative expectancies about the outcomes of drinking alcohol (Donovan, Molina, & Kelly, 2009).

Simply put, alcohol or other drug use is more likely if positive outcomes are expected than if negative outcomes are expected. Results from the 2016 Monitoring the Future study of middle and high school students are informative here. The students were asked to rate the harmfulness of various substance use behaviors in terms of how much they believed a person risks self-harm (physical or other ways) by using specific substances. Figure 1 shows a portion of the results from the 8^{th}, 10^{th}, and 12^{th} graders. As you can see, the students expected less potential harm with an experimental trial of these substances (once or twice) compared to occasional or regular use. They also distinguished between the potential harm of using different types of substances, especially they viewed alcohol and marijuana as being less harmful than the other substances. This estimate of harmfulness represents an expectancy related to using these substances in the described patterns.

Figure 1. Percent reporting “great risk” if a person…

Substance use pattern	8th graders	10th graders	12th graders
Try one or two drinks of an alcoholic beverage	14.7	13.3	9.5
Take one or two drinks nearly every day	30.7	32.2	21.6
Have five or more drinks once or twice each weekend	53.4	54.5	48.4
Try marijuana once or twice	22.8	16.4	12.9
Smoke marijuana occasionally	36.8	24.4	17.1
Smoke marijuana regularly	57.5	44	31.1
Try heroin once or twice without using a needle	59.2	73.3	66.1
Take heroin occasionally without using a needle	70.3	82.2	74.6
Try inhalants once	32	40.7	—
Take inhalants regularly	52.1	59.7	—
Take LSD once or twice	22.6	34.4	31.7
Take LSD regularly	36.8	55.2	58.2
Try cocaine once or twice	44.3	54.6	52.7
Take cocaine occasionally	62.4	70.9	68.6
Try any narcotic other than heroin (codeine, Vicodin, OxyContin, Percocet, etc.) once or twice	—	—	43.6
Take any narcotic other than heroin occasionally	—	—	55.7
Take any narcotic other than heroin regularly	—	—	72.4

Yet another set of psychological theories address human ***information processing***. This area of cognitive psychology explains how substance use can affect the way that a person takes in (perceives) information from the environment, stores the information as a short-term memory, moves information into long-term memory, and later retrieves information in order to influence behavior.



Research suggests that when a person learns something while under the influence of a drug, it is possible that they will not be able to retrieve what they learned later, when the person is in a sober state—there simply will not be enough retrieval cues available to trigger the recall. This information processing framework not only has tremendous implications for how individuals function when taking psychotropic substances, but also how they often have to re-learn many things once they enter into recovery or quit using after a period of regular use.

Past clinical literature includes discussions about the "***addictive personality***." This concept presumes the existence of specific personality traits that characterize individuals who develop substance use or addiction disorders. The idea is that people are predisposed to developing addiction based on specific personality traits (in much the same way we might theorize a predisposition based on genetics). While there may be some characteristics commonly observed in the population of individuals with substance use disorders, the evidence does not support there being a universal set of personality traits or a personality type associated with addiction—evidence for the existence of an "addictive personality" type does not really exist (per Szalavitz, 2016 citing an interview with George Koob, director of the National Institute on Alcohol Abuse and Alcoholism). An argument discussed by Szalavitz (2016) is the observation that 18% of persons with an addiction also have "a personality disorder characterized by lying, stealing, lack of conscience, and manipulative antisocial behavior." While this rate of 18% is more than four times the rate seen across the general population, it still means the 82% of people experiencing addiction do not fit that characteristic. This is the case with study after study of personality traits. The population of people experiencing addiction is tremendously diverse and heterogeneous on all fronts: demographics and personality alike. This also means that pretty much anyone, regardless of personality type, could potentially develop an addiction if the right (or wrong) combination of factors come together.

There are psychodynamic, attachment theory, and self-medication perspectives about addiction to consider, as well. These psychological approaches suggest that a person uses drugs to fill a terrific void in their emotional lives or as a means of quieting voices of inner conflict. A person might be using the drugs to find relief from physical or emotional pain.

These are called***self-medication theories***. In this line of thinking, a person uses substances to avoid or blunt their negative or disturbing feelings, as in the Pink Floyd song lyrics: "I have become comfortably numb." The underlying basis for the pain that is being medicated is usually attributed to trauma—adverse childhood experiences (ACES), sexual or violence trauma as an adult, or other experiences associated with post-traumatic stress. We do know that trauma experiences and ***post-traumatic stress disorder (PTSD)*** are commonly reported among women and men with substance use disorders (we will learn more about this in Module 14 when we talk about co-occurring problems). However, it is a gross oversimplification to attribute this association to self-medication efforts. The aftermath of trauma is complex and variable, involving changes in (1) neurological pathways–especially the amygdala that we studied in Module 3, that keeps signally the presence of threat long after the threat is past, (2) changes in biology, and (3) changes in how a person interfaces with the social environment. Furthermore, trauma is often a consequence of substance misuse, not only an antecedent. Regardless, practitioners are now very aware of how important it is to screen and assess for both PTSD and substance use disorders, and to treat both issues together if they co-occur.

An interactive or media element has been excluded from this version of the text. You can view it online here: https://ohiostate.pressbooks.pub/swk3805module5/?p=29

The remaining readings in this module elaborate further about these psychological models and theories.

Ch. 2: More about Psychological Models of Addiction

The next, brief reading provides an overview of five psychological theories related to the ***etiology*** of substance use disorders and addiction. You will be reading a piece by Cavaiola, A.A. (2009) called Psychological models of addiction from G.L. Fisher & N.A. Roget, (Eds.), *Encyclopedia of substance abuse prevention, treatment, & recovery, volume 2*, (pp. 720-723). Thousand Oaks, CA: Sage.

In this chapter you will read about:

- Psychoanalytic models,
- Psychopathology models,
- Personality models,
- Behavioral models, and
- Opponent process models.

Click here for a link to our Carmen course where you can locate the assigned pdf file(s) for this chapter. You will need to be logged into our Carmen course, select Module 5, and proceed to the Coursework area. Under the Readings heading you will find a box with links to the readings for relevant coursebook chapters. Don't forget to return here in your coursebook to complete the remaining chapters and interactive activities.

After reading, please try this self-check activity.

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Ch. 3: Addiction and Cognition

Our next reading is a more advanced article discussing the intersection between the neurobiology and psychology (cognition) aspects of substance use. This is a research review article by Gould, T.J. (2010) called Addiction and cognition from *Addiction Science Clinical Practice*, 5(2), 4-16.

The article begins with a brief review of some of the content you learned in prior modules about addiction and the neurobiology involved (p. 4-5). The content new to you, beginning on page 5, discusses cognitive effects of ***acute drug administration***. This content examines evidence related to how starting to use a drug might affect the formation of drug-stimulus associations (learning theory). This information has great relevance to what you are learning about cravings and the power of these learned associations to trigger relapse in a person attempting to quit using substances. The new content continues with a discussion of cognitive deficits associated with ***chronic drug use*** (p. 7). The author describes some of the cognitive impairments that come about from using certain types of drugs over a prolonged period (consider the relevance to information processing theory). The author also discusses some of the cognitive effects we might expect to see during abstinence and early recovery from a substance use disorder. Pay attention to the box on page 8 of the article called Learning in the Mind and Brain—the bullet point about how newly learned material becomes established in long term memory relates directly to information processing, too. Next (on p. 9), the author addresses how drugs affect brain development—an extension of some of the content you read about in Module 3 concerning prenatal and adolescent exposure. Finally, the relationship between drugs of abuse and mental illness is examined (p. 10). This topic we will discuss in more detail in our final course module (Module 14).

In this (information dense) chapter you will read about:

- how the biology of substance use relates to cognition and cognitive processes;
- how learned associations form that might relate to craving triggers;
- some of the cognitive deficits associated with chronic use of certain substances;
- some effects of substance exposure on the developing brain/mind; and,
- how substance use might interface with mental disorders.

Click here for a link to our Carmen course where you can locate the assigned pdf file(s) for this chapter. You will need to be logged into our Carmen course, select Module 5, and proceed to the

Coursework area. Under the Readings heading you will find a box with links to the readings for relevant coursebook chapters. Don't forget to return here in your coursebook to complete the remaining chapters and interactive activities.

After reading, please try this self-check activity–there are 4 questions to click on and aswer.

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Ch. 4: Implications of Cognition and Learning Theories for Intervention

This chapter demonstrates something we discussed early in the course: the ways that theory can inform practice. The authors of the piece that you are reading here discuss an intervention approach with a considerable degree of evidence supporting its use in addressing substance use disorders—***cognitive behavioral therapy (CBT)***. CBT is a type of behavioral intervention based on the assumption that substance use is a learned behavior and that learned behaviors are changeable through learning. CBT might help a person anticipate and avoid events that could trigger an overwhelming desire for using drugs again (cravings) and introduces new skills for managing these challenging situations. CBT is a carefully constructed intervention strategy that helps people learn to think differently about their problems and situations, and to arm themselves with new tools and skills for changing how they behave in response to situations that previously might have ended up in drug use (Barry & Petry, 2009). The assigned reading here is Granillo, M.T., Perron, B.E., Jarman, C., & Gutowski, S.M. (2013). Cognitive behavioral therapy with substance use disorders: Theory, evidence, and practice. In M.G. Vaughn & B.E. Perron, (Eds.), *Social work practice in the addictions*, pp. 101-110 (out of 110-117). NY: Springer. Feel free to read the entire piece if you like; but **only pages 101-110 are required** reading.

In this chapter you will read about:

- Behavioral theory and the underlying learning principles of classical and operant conditioning;
- Cognitive theory and common cognitive errors/distortions;
- Social cognitive theory;
- How CBT integrates these theories and works in combination with other intervention strategies.

Click here for a link to our Carmen course where you can locate the assigned pdf file(s) for this chapter. You will need to be logged into our Carmen course, select Module 5, and proceed to the Coursework area. Under the Readings heading you will find a box with links to the readings for

relevant coursebook chapters. Don't forget to return here in your coursebook to complete the remaining chapters and interactive activities.

How do the principles and practices in CBT (cognitive behavioral therapy) for a substance use disorder relate to the various psychological theories we have studied in this module? This includes the learning theories, social learning theory, information processing, and the others.

Ch. 5: Expectancies Theory

This reading addresses how what we expect to happen as a result drinking alcohol or taking drugs (***expectancies***) affects the decisions and choices we make about using, misusing, or not using those substances. While this piece is specifically about college drinking, the principles apply to anyone faced with making choices about using any substance (or, for that matter, engaging in many different types of behaviors). Feel free to read the entire piece, but **the required material begins on page 108** of Reich, R.R. & Goldman, M.S. (2012). Drinking in college students and their age peers: The role of anticipatory processes (chapter 5). In H.R. White & D.L. Rabiner, (Eds), *College drinking and drug use*, (pp. 105-120). NY: Guilford Press.

In this chapter (pp. 108-117) you will read about:

- Risk taking and sensation seeking within a developmental context;
- The role of expectancies and expected outcomes in choices related to drinking; and,
- How expectancies form through social learning and interactions with the social environment.

Click here for a link to our Carmen course where you can locate the assigned pdf file(s) for this chapter. You will need to be logged into our Carmen course, select Module 5, and proceed to the Coursework area. Under the Readings heading you will find a box with links to the readings for relevant coursebook chapters. Don't forget to return here in your coursebook to complete the remaining chapters and interactive activities.

Ch. 6: Summary

In Module 4, you learned about some basic principles of psychology as they relate to understanding what happens with substance use, substance misuse, substance use disorders, and addiction. We explored a number of learning principles (operant and classical conditioning, social learning theory elements), and how they relate to the development, maintenance, and recovery from substance use or addiction disorders. In addition, you were introduced to expectancies theory, as well as psychoanalytic, psychopathology, and personality theories of addiction. We also examined the interface between neurobiology and cognition as it relates to substance use and misuse. You are now ready to review some of the key terms related to the psychological basis of substance use disorders introduced in this book.

Key Terms

acute drug administration: refers to a specific administration or dose of a drug (immediate, short-term, one-time)

chronic drug use: refers to repetitive use of a drug over time (longer term, multiple times).

classical conditioning: learning principle related to pairing of stimuli; a previously neutral stimulus (e.g., bell) becomes paired with a naturally potent stimulus (e.g., food) such that it takes on the power to elicit the same response (e.g., Pavolov's dogs salivating for a bell when it has become paired with food).

cognitive behavioral therapy (CBT): a category of intervention approaches that include elements of both cognitive and behavioral theory designed to change thoughts (cognitions) and behaviors that are harming or causing distress to an individual.

craving: intensely compelling physical and/or emotional desire to experience again the effects of a substance (or other behavior) previously used (experienced);

etiology: the origins and causal factors of phenomena like substance use disorders or addiction.

expectancies: cognitions about the likely consequences or outcomes of a behavior/action; our expectations about the likely positive or negative results of using alcohol or another substance form out of observational learning and interactions with the social environment, and have strong influences on our decisions to use, misuse, or not use those substances.

information processing: the way that individuals take in, organizes, stores, and retrieves information.

learning theories: describe the mechanism by which new behaviors are acquired, maintained, and extinguished through interaction/experiences with the environment.

negative reinforcement: operant conditioning consequence that increases probability of repeating the behavior through consequence involving the removal of an experience perceived by the individual as unpleasant (negative).

observational learning: a social learning theory concept describing the mechanism by which behavior modelled by an individual becomes imitated, thus learned, by another individual.

operant conditioning: learning process by which consequences of a behavior shape the pattern of future behavior; reinforcement increases probability of future expression, punishment decreases the probability of repeating the behavior in the future.

positive reinforcement: operant conditioning consequence that increases probability of repeating the behavior through delivery of a consequence experienced by the individual as satisfying, pleasurable (positive).

punishment: operant conditioning consequence that decreases probability of repeating the behavior through delivery of a consequence experienced by the individual as unpleasant or removal of an experience perceived by the individual as satisfying.

self-medication theories: explain a person's use of substances as resulting from an effort or desire to improve mood, affective, emotional state or reduce physical/emotional pain/discomfort.

social learning theory: an elaboration on learning theory that includes a component where

individuals can learn (imitate) others' behavior and the consequences of those behaviors without first directly exhibiting the behavior or experiencing the consequences themselves.

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