Syllabus

Motivated Behaviors and Addiction PSYC 426

Units: 4

Fall 2017, Tue-Thu, 10:00-11:50 AM

Location: VKC 203

Course Instructor/ Director: Antoine Bechara

HNB B26

Office Hours: Tue-Thu 12:00-1:00 PM

Also by appointment

Contact Info: bechara@usc.edu

IT Help: NA

Hours of Service: NA Contact Info: NA

Course Description

This course covers the brain mechanisms underlying motivated behaviors and the dysfunctions that lead to addictive behaviors. Addiction will be studied at many levels, from how drugs affect neurons to how drugs affect society. Underlying factors that are common in cases of addiction to different classes of drugs are identified. Psychomotor stimulant (e.g., amphetamine, cocaine) and opiate (e.g., heroin, morphine) drugs figure prominently in an examination of the pharmacological properties of addictive drugs. Much of the course relates the important mood-elevating effects of these drugs to their biological actions. Other factors that may contribute to drug addiction are also examined. The course will also cover addictive behaviors that do not appear to have a pharmacological root, such as pathological gambling and Facebook and other social media addiction. A discussion will be made on whether these types of behaviors, such as excessive use of social media to perhaps eating too much chocolate or other tasty food, would be considered a true addiction or just a bad habit. The course will consist of short lectures, readings that include articles on these topics, presentations and discussions by students of these articles, as well as writing short papers on certain topics of addiction.

More specific course topics include (1) theories of motivation and addiction and their biological substrates, (2) how drug classes such as opiates, stimulants, and nicotine work in the brain to lead to addictive behaviors, (3) how drug craving, drug pleasure, and withdrawal, influence the development of addictive behavior, (4) the role of decision-making in resisting addiction, and viewing addiction as a disease of choice, (5) the role of stress and other homeostatic disturbances that lead to relapse, (6) approaches to treat addiction, (7) the difference between socially inacceptable (e.g., hard drugs) and socially more acceptable addictions (e.g., cigarette smoking, marijuana, alcohol), (8) pathological gambling, (9) technology addiction (Facebook and social media), (10) values as a determinant of drug use, and drug policy. The readings are largely research studies published in scientific journals.

Learning Objectives

The objectives of the course are: (1) to introduce basic concepts about the function of the human neural systems that underlie motivated behaviors and their dysfunctions that lead to addictive behaviors; (2) to enable students to apply these fundamental principles toward understanding the clinical problems underlying addictive behaviors; (3) to give students some training in how to present, discuss, and critique scientific topics about addiction; (4) to give students some training in how to write a short paper about a scientific topic related to addiction; and (4) give students the necessary background for correlation with related courses, for advanced studies in the field of addiction, and for monitoring new developments in the basic and clinical sciences of addiction.

Prerequisite(s): Undergraduates in junior or senior year are allowed to enroll (no

specific pre-requisites). **Co-Requisite (s):** none

Concurrent Enrollment: none

Recommended Preparation: psychology, biology, or neuroscience.

Course Notes

There is a collection of articles and reading assignments that are listed in the syllabus. PDFs of some of these articles may be posted on Blackboard when available, but it is the responsibility of the student to locate and obtain a copy of the assigned articles. Slides used in short lectures, and in student presentations will be posted on Blackboard and accessible to registered students.

Attendance and Student Responsibilities: Students are held responsible for all material covered in class. Students are also responsible for all announcements or schedule changes that are made in class, whether or not they are in attendance. Attendance at examination is mandatory, except for illness. For other serious matters, students must receive permission in advance from the Instructor to be excused from attending an examination at the scheduled time.

Technological Proficiency and Hardware/Software Required NA

Required Readings and Supplementary Materials

There are no required texts for the course, but there is a collection of articles and reading assignments that are listed in the syllabus. PDFs of these articles will be posted on Blackboard when available and as the course progresses, but it is the responsibility of the student to locate and obtain a copy of the assigned articles. Slides used in lectures in class, as well as slides used in student presentations, will be posted on Blackboard and accessible to registered students.

Description and Assessment of Assignments

The course will include (1) two mid-term tests based on the information presented in short lectures by the instructor. All materials on these tests will be from the class slides and posted on Blackboard; (2) there are two presentations by each student throughout the course. Each presentation will consist of the assigned reading articles for a given class, where the student makes a power point presentation of the articles and lead the

discussion in class; (3) there are assessments of participation in class discussions; (4) there are two short papers on specific topics related to addiction; and (5) one final exam.

- Mid-term tests: These will have short answers format. All test/exam questions will be based on materials presented and discussed in class and not on any outside materials.
- 2. Student presentations and leading class discussion: Each student will be asked to make two presentations during the course and lead the class discussion on a topic from the list of classes provided below. This presentation should include:
 - a) A summary of the key scientific information discussed in the article (e.g., using PowerPoint). The objective is to train the student on how to clearly communicate scientific findings to audiences (i.e., in this case, their classmates).
 - b) During the presentation, the student is expected to show an understanding of the scientific methods used in the article to analyze ideas and obtain and interpret data.
 - c) During the presentation, the student is expected to stimulate class discussion about the significance of the presented findings, and the hypotheses and theories that were tested, as well as their implications for society.

The student will be evaluated based on the overall assessment of the extent to which her or his presentation is clear, concise, organized, and reflects an understanding of both assigned course readings, and perhaps the student's own independent investigation of the literature on the topic. The grade will also reflect the extent to which the student is able to engage the class in a deep and useful discussion, and answer questions posed by other students in a thoughtful and responsive manner.

During the first week of classes, the course instructor will present the reading assignments and lead the discussions. This will provide a learning example for the students on how they should make their presentations and discussions in future classes. During the first week, students will be assigned the dates of their presentations. The order of selecting students will follow the alphabetical order of their last name. However, there is flexibility in that 2 students could swap the date of their presentation after informing the course instructor.

- 3. Participation in class discussion: Evaluation is based on the quality of comments, and engagement in discussions of each class presentation. High quality contributions will reflect both a depth and breadth of knowledge gained from the assigned readings, and they should be clearly stated and effectively communicated, and they also should be insightful and relevant to the issues under discussion. Although the quantity of comments is important, students should refrain from monopolizing discussions and should aim to be succinct.
- 4. Short papers: Each paper will be 4 to 5 pages, and it is written in an APA style. The topic of each paper is intended to stimulate the conceptual thinking of the student instead of regurgitating learned facts. The necessary background information necessary for writing these papers will be covered in class, but it is the

student's task to put this knowledge together. The two topics for these two short papers are:

- a. Mirapex (pramipexole) is a dopamine agonist used in the treatment of Parkinson's disease. However, one of the side effects of this drug is causing addictive behaviors such as pathological gambling. Explain how this drug may cause pathological gambling or other addictive behaviors.
- b. Chantix (varenicline) is a partial nicotine agonist used in the cessation of smoking. Yet on some occasions, the use of this drug could lead to depression and perhaps suicide. Explain the link between nicotine addiction and this depression side effect.

All papers must be double-spaced, typed in Arial 11 point font, with 1" margins. Papers are due by e-mail to bechara@usc.edu by 5:00pm on the dates below. Additional information about papers will be presented in class.

5. A final exam: This will have short answers format. Questions will be based on materials presented and discussed in class and not on any outside materials.

Grading Breakdown

The final grade in the course will be based on the following weights:

Final Grade	100%
Final Exam	20%
Short paper 2	10%
Short paper 1	10%
Participation in class discussion	10%
Class presentation/discussion leadership 2	10%
Class presentation/discussion leadership 1	10%
Mid-term 2	15%
Mid-term 1	15%

Assignment Submission Policy

All papers must be double-spaced, typed in Arial 11 point font, with 1" margins. Papers are due by e-mail to bechara@usc.edu by 5:00pm on the dates below. Additional information about papers will be presented in class.

Additional Policies

NA

Course Schedule: A Weekly Breakdown

Topics/Daily Activities	Readings and Homework	Deliverable/ Due Dates
Introduction Substance Dependence	See 1 below	
Theories of motivation and addiction (1): Negative reinforcement	See 2a below	Presentations of assigned readings by students (3 assigned students per class)
Positive reinforcement	See 2b (i) below	
Theories of motivation and addiction (2): Positive reinforcement (cont'd) Incentive sensitization	See 2b (ii) below (cont'd) See 2c below	Presentations of assigned readings by students (3 assigned students per class)
Addiction to drug classes (1): Opiates Stimulants	See 3-opiates below See 3-stimulants below	Presentations of assigned readings by students (3 assigned students per class)
Addiction to drug classes (2): Stimulants (cont'd) Nicotine	-See 3-stimulants below -See 3-Nicotine below	Presentations of assigned readings by students (3 assigned students per class)
Addiction to drug classes (3): Alcohol Cannabis	See 3-alcohol below See 3-cannabis below	Presentations of assigned readings by students (3 assigned students per class)
-Mid term test 1 -Catch up and guidance for the short paper on Mirapex	Writing the short paper	Deliver short paper before 10/18/17.
Role of decision-making in resisting addiction	See 4 below	Presentations of assigned readings by students (3 assigned students per class)
Role of insula in addiction	See 5 below	
-Stress and relapse -Modern and behavioral addictions: Gambling	See 6 below See 7-gambling below	Presentations of assigned readings by students (3 assigned students per class)
	Introduction Substance Dependence The Brain and Addiction Theories of motivation and addiction (1): Negative reinforcement Positive reinforcement Theories of motivation and addiction (2): Positive reinforcement (cont'd) Incentive sensitization Addiction to drug classes (1): Opiates Stimulants Addiction to drug classes (2): Stimulants (cont'd) Nicotine Addiction to drug classes (3): Alcohol Cannabis -Mid term test 1 -Catch up and guidance for the short paper on Mirapex Role of decision-making in resisting addiction Role of insula in addiction -Stress and relapse -Modern and behavioral	Introduction Substance Dependence The Brain and Addiction Theories of motivation and addiction (1): Negative reinforcement Positive reinforcement Theories of motivation and addiction (2): Positive reinforcement (cont'd) Incentive sensitization Addiction to drug classes (1): Opiates Stimulants Addiction to drug classes (2): Stimulants Addiction to drug classes (3): Alcohol Cannabis -Mid term test 1 -Catch up and guidance for the short paper on Mirapex Role of decision-making in resisting addiction Role of insula in addiction -Stress and relapse -Modern and behavioral -Mind term test 1 -Catch up and guidance for the short paper on Mirapex Role of insula in addiction -Stress and relapse -Modern and behavioral -See 1 below See 2a below See 2b (ii) below (cont'd) See 2b (iii) below (cont'd) See 3-opiates below See 3-opiates below See 3-stimulants below -See 3-stimulants below -See 3-Nicotine below Writing the short paper See 4 below See 5 below See 6 below See 7-gambling below

Week 10			Presentations of assigned
10/24/16	Sexual Addiction	See 7-sexual below	readings by students (3
10/26/16	Eating Addiction	See 7-eating below	assigned students per class)
Week 11 10/31/16	Impulse Control Disorders	See 7-impulse below	Presentations of assigned readings by students (3 assigned students per class)
11/2/16	Internet Addiction (Dr. Ofir Turel)	See 7-internet below	accigned etadente per clase)
Week 12			
11/7/16	Difference between	See 7a-Opioids	Presentations of assigned
11/9/16	socially acceptable and socially inacceptable addictions.	Epidemic below See 7b-Opioids Epidemic below	readings by students (3 assigned students per class)
Week 13			
11/14/16	-Guidance for the short paper on Chantix	Writing the short paper	Deliver short paper before 11/29/17.
11/16/16	-Mid term test 2		
Week 14			Presentations of assigned
11/21/16	Values as a determinant of drug use, and drug policy	See 8 below	readings by students (3 assigned students per class)
11/23/16	Thanksgiving		
Week 15			Presentations of assigned
11/28/16	Types of treatments	See 9 below	readings by students (3
11/30/16	Catch up and reviews		assigned students per class)
FINAL			Date: For the date and time
Date			of the final for this class,
			consult the USC Schedule of Classes at www.usc.edu/soc.
			Classes at www.usc.edu/soc.

Readings and Homework:

1. Introduction: Defining addiction, an overview of the topic, and course mechanics: "Addiction" identifies a self-destructive pattern of drug use. The popular understanding is that addiction is a compulsive, involuntary behavior. However, self-destructive behavior is not necessarily compulsive. Whether addictive drug use is voluntary or involuntary is an empirical question that can be scientifically tested. To answer it properly requires an objective definition of compulsivity and a sufficiently rich account of the determinants of drug use.

American Psychiatric Association (1994). Substance Dependence. In Diagnostic and statistical manual of mental disorders, (4th ed.) pp. 176-179. Washington, DC: Author.

Neurons, drugs, psychopharmacology: Drugs achieve their effects by changing the way the brain normally functions. To understand these changes, we will cover how drugs reach their sites of action, receptor dynamics, psychopharmacology, and brain plasticity.

Lesley Dickson. (2013). The Brain and Addiction. Chapter 2: Behavioral Addiction; An-Pyng Sun, Larry Ashley, Lesley Dickson (eds); Central Recovery Press.

- 2. There are three major features of addictive behavior that need to be explained by any adequate theory of drug addiction: The first is drug craving, which is simply an intense 'wanting' of drugs. The second is: why drug craving often persists or can be reinstated, long after the discontinuation of drug use. The third is that: as craving for drugs increases the pleasure derived from drugs often decreases. Why is this? We will cover the various theories, and their biological models:
- a. Negative reinforcement views of addiction (escape from distress):
- Koob, G. F.; Bloom, F. E.: Cellular and molecular mechanisms of drug dependence. Science 242:715–723; 1988.
- Wikler, A.: Dynamics of drug dependence: Implications of a conditioning theory for research and treatment. Arch. Gen. Psychiatr. 28:611–616; 1973.
- Nader, K.; Bechara, A.; van der Kooy, D.: Neurobiological constraints on behavioral models of motivation. In: Spence, J. T., ed. Annual review of psychology, vol. 48. Palo Alto, California: Annual Reviews; 1997:85–114.
- <u>b. (i) A positive reinforcement view of addiction (pleasure-seeking):</u> Wise, R. A.; Bozarth, M. A.: A psychomotor stimulant theory of addiction. Psychol. Rev. 94:469–492; 1987.
- Wise, R. A.: The neurobiology of craving: Implications for the understanding and treatment of addiction. J. Abnormal Psychol. 97:118–132; 1988.
- (ii) Wise RA: Brain reward circuitry: insights from unsensed incentives. Neuron 36:229-240; 2002.
- c. The incentive-sensitization view of addiction:

Robinson, T. E.; Berridge, K. C.: The neural basis of drug craving: An incentive-sensitization theory of addiction. Brain Res. Rev. 18:247–291; 1993.

3. Addictions to drug classes:

<u>Opiates:</u> History, psychopharmacology, tolerance, and withdrawal. Heroin and morphine have been used in different forms, by different groups of people, for millennia. What makes using opiates so compelling that people continue to use it despite the dangers that are associated with its use?

Wise, R. A.; Bozarth, M. A.: Action of drugs of abuse on brain reward systems: An update with specific attention to opiates. Pharmacol. Biochem. Behav. 17:239–243; 1982.

Melzack, R. (1990). The tragedy of needless pain. Scientific American, 262, 27-33.

TJ De Vries, TS Shippenberg: Neural systems underlying opiate addiction. The Journal of Neuroscience, 22(9): 3321-3325; 2002

Heyman, G.M., 2015. Opiate Use and Abuse, History of. In: James D. Wright (editor-inchief), International Encyclopedia of the Social & Behavioral Sciences, 2nd edition, Vol 17. Oxford: Elsevier. pp. 236–242

<u>Stimulants:</u> Why is cocaine so addictive? How does it differ from other addictive drugs? We will try to understand why addiction to stimulants can be so difficult to break.

Barry J. Everitt and Marina E. Wolf: Psychomotor Stimulant Addiction: A Neural Systems Perspective. The Journal of Neuroscience, 22(9): 3312-3320; 2002.

Nora D. Volkow and Joanna S. Fowler. Addiction, a Disease of Compulsion and Drive: Involvement of the Orbitofrontal Cortex. Cerebral cortex, Volume 10 (3), pp. 318-325; 2000.

Karen D. Ersche, P. Simon Jones, Guy B. Williams, Abigail J Turton, Trevor W. Robbins, Edward T. Bullmore: Abnormal Brain Structure Implicated in Stimulant Drug Addiction. Science, 335 (6068), pp. 601-604; 2012.

<u>Nicotine:</u> Despite a concerted effort to dissuade people from smoking, millions of Americans continue to smoke cigarettes, and new users begin smoking every day. Why is nicotine sometimes considered the prototypical drug of abuse? Why is it so hard to stop smoking?

Westman, E., et al. (1996). Dissociating the nicotine and airway sensory effects of smoking. Pharmacology Biochemistry and Behavior, 53, 309-315.

Naqvi, N.H, Bechara, A., 2005. The airway sensory impact of nicotine contributes to the conditioned reinforcing effects of individual puffs from cigarettes. Pharmacol Biochem Behavior, 81, 821-829.

Naqvi, N.H., Bechara, A. 2007. Damage to the insula disrupts addiction to cigarette smoking. Science. 315, 531-534.

<u>Alcohol:</u> Introduction to alcohol and alcoholism. Selected topics will include the history of alcohol use, alcohol pharmacology and psychology, and genetic influences related to alcohol abuse.

Ciudad-Roberts, Andres; Camarasa, Jorge; Ciudad, Carlos J.; et al. Alcohol enhances the psychostimulant and conditioning effects of mephedrone in adolescent mice; postulation of unique roles of D-3 receptors and BDNF in place preference acquisition. BRITISH JOURNAL OF PHARMACOLOGY Volume: 172 Issue: 20 Pages: 4970-4984 Published: OCT 2015.

Ozburn, Angela R.; Janowsky, Aaron J.; Crabbe, John C. Commonalities and Distinctions Among Mechanisms of Addiction to Alcohol and Other Drugs. ALCOHOLISM-CLINICAL AND EXPERIMENTAL RESEARCH Volume: 39 Issue: 10 Pages: 1863-1877 Published: OCT 2015.

Luczak, S. E. et al. (2001). Binge drinking in Chinese, Korean, and White college students: Genetic and ethnic group differences. Psychology of Addictive Behavior, 15, 306-309.

Vaillant, G. E., & Milofsky, E. S. (1982). The etiology of alcoholism. American Psychologist, 37, 494-503.

The article below does not talk directly about alcohol, but it brings up an important topic in science, which is the role of epigenetics in addiction:

Watters, E. (2006). DNA is not destiny: The new science of epigenetics. Discover Magazine, November.

<u>Cannabis:</u> Is marijuana addictive? Is it harmful? Topics include marijuana myths versus facts, an objective consideration of reasons to support and/or not support legalization of marijuana for medical or recreational use.

Kandel, D. B., & Chen, K. (2000). Types of marijuana users by longitudinal course. Journal of Studies on Alcohol. 61(3), 367-378.

Fried, P. A. et al. (2005). Neurocognitive consequences of marihuana—a comparison with pre-drug performance. Neurotoxicology and Tetratology, 27, 231-239.

Meier, M. et al. (2012). Persistent marijuana users show cognitive decline from childhood to midlife. PNAS, August 27.

Gruber, A. J., Pope, H. G., Hudson, J. I., & Yurgelun-Todd, D. (2003). Attributes of long-term heavy cannabis users: A case-control study. Psychological Medicine, 33(8), 1415-1422.

Lyons, M. J. et al. (2004). Neuropsychological consequences of regular marijuana use: A twin study. Psychological Medicine, 34, 1239-1250.

Pope, H. (2002). Cannabis, cognition, and residual confounding. Journal of the American Medical Association, 287, 1172-1174.

4. Recent views of addiction:

The importance of decision-making and prefrontal cortex in addiction.

GF Koob and ND Volkow. Neurocircuitry of addiction. Neuropsychopharmacology, 35, 217–238; 2010.

Bechara A (2005) Decision making, impulse control and loss of willpower to resist drugs: a neurocognitive perspective. Nature Neuroscience 8:1458-1463.

5. The role of the insular cortex in craving and addiction:

Naqvi NH, Bechara A (2010) The insula and drug addiction: an interoceptive view of pleasure, urges, and decision-making. Brain Structure & Function 214:435-450.

Naqvi NH, Bechara A (2009) The hidden island of addiction: the insula. Trends in Neurosciences 32:56-67.

Noel X, Brevers D, Bechara A (2013) A neurocognitive approach to understanding the neurobiology of addiction. Current opinion in neurobiology 23:632-638.

6. Stress and relapse to drugs:

Rajita Sinha. The role of stress in addiction relapse. Current Psychiatry Reports, Vol 9 (5), pp 388-395; 2007.

Nick E. Goeders. Stress and Cocaine Addiction. Journal of Pharmacology and Experimental Therapeutics, vol 301 (3), pp. 785-789; 2002.

S A Brown, P W Vik, T L Patterson, I Grant, M A Schuckit. Stress, vulnerability and adult alcohol relapse. Journal of Studies on Alcohol, 56(5), pp. 538–545; 1995.

7. Modern and behavioral addictions:

Gambling Addiction:

Constance Holden. Behavioral' Addictions: Do They Exist? Science, vol. 294 (5544), pp. 980-982; 2001.

Potenza, M. N. (2006). Should addictive disorders include non-substance- related conditions? Addiction. Supplement 101, 142-151.

Marc N Potenza (2008). The neurobiology of pathological gambling and drug addiction: an overview and new findings. Philosophical Transections of The Royal Society B (Biological Sciences), vol 363, p. 3181-3189.

Clark L, Studer B, Bruss J, Tranel D, Bechara A (2014) Damage to insula abolishes cognitive distortions during simulated gambling. Proceedings of the National Academy of Sciences of the United States of America 111:6098-6103.

Sexual Addiction:

Martin Plant and Moira Plant (2003). Sex addiction: A comparison with dependence on psychoactive drugs. Journal of Substance Use, vol 8, number 4, p. 262.

Cynthia Power (2005). Food and Sex Addiction: Helping the clinician recognize and treat the interaction. Sexual Addiction and compulsivity, vol 12, p. 220.

Richard Blankenship and Mark Laaser (2004). Sexual Addiction and ADHD: Is there a connection? Sexual Addiction and Compulsivity, vol 11, p. 9.

Jon E Grant, and Marvin A Steinberg (2005). Compulsive sexual behavior and pathological gambling. Sexual Addiction and Compulsivity, vol 12, p. 235-244.

Eating Addiction:

Sherry S Stewart, Catrina G Brown, Kristina Devoulyte, Jennifer Theakston, and Sarah E. Larsen (2006). Why do women with alcohol problems binge eat? Exploring connections between binge eating and heavy drinking in women receiving treatment for alcohol problems. Journal of Health Psychology, vol 11, number 3, p. 409-425.

Davis, C, Carter, JC (2009). Compulsive overeating as an addiction disorder. A review of theory and evidence. **Appetite**, vol 53, number 1, p. 1-8.

Avena, NM, Rada, P, Hoebel, BG (2008). Evidence for sugar addiction: Behavioral and neurochemical effects of intermittent, excessive sugar intake. NEUROSCIENCE AND BIOBEHAVIORAL REVIEWS, vol 32, no. 1, p. 20-39.

Impulse Control Disorders:

Heatherton, TF, Wagner, DD (2011). Cognitive neuroscience of self-regulation failure. TRENDS IN COGNITIVE SCIENCES, vol 15, no. 3, p. 132-139.

Fineberg, N. A., Potenza, M. N., Chamberlain, S. R., Berlin, H. A., Bechara, A., Sahakian, B. J., Robbins, T. W., Bullmore, E. T., and Hollander, E., (2010). Probing compulsive and impulsive behaivors, from animal models to endophenotypes: A narrative review. Neuropsychopharmacology; 35(3): 591-604.

Jon E Grant, Liana R.N. Schreiber, Brian L Odlaug, and (2011). Impulse control disorders: updated review of clinical characteristics and pharmacological management. Frontiers in Psychiatry (Addictive Disorders), February 2011, vol 2, Article 1, p. 1-11.

Internet Addiction:

Chou, C, Condron, L, Belland, JC (2005). A review of the research on Internet addiction. EDUCATIONAL PSYCHOLOGY REVIEW, vol 17, no. 4, p. 363-388.

Janet Morahan-Martin and Phyllis Scumacher (2000). Incidence and correlates of pathological internet use among college students. Computers in Human Behavior, vol 16, no. 1, p. 13-29.

Turel O, He QH, Xue G, Xiao L, Bechara A (2014) EXAMINATION OF NEURAL SYSTEMS SUB-SERVING FACEBOOK "ADDICTION". Psychological Reports 115:675-695.

Perceived safety of taking drugs: The opioids epidemic:

- a. American Carnage by Christopher Caldwell | Articles | First Things (April 2017): https://www.firstthings.com/article/2017/04/american-carnage
- b. Kolodny, A, Courtwright, DT, Hwang, CS, Kreiner, P, Eadie, JL, Clark, TW, Alexander, GC (2015). The Prescription Opioid and Heroin Crisis: A Public Health Approach to an Epidemic of Addiction. ANNUAL REVIEW OF PUBLIC HEALTH, VOL 36, p. 559-574.
- 8. Pros and cons of current drug policy and should "values" play a role in the effort to reduce harmful drug use?

Satel, S. (2007). In praise of stigma. In J. Henningfield, et al. (Eds.), Addiction Treatment: Science and Policy for the Twenty-first Century. John Hopkins University Press, pgs 147-151.

Wilson, J. Q. (1990). Against the legalization of drugs. Commentary, 89, 21-28.

Reyna, VF, Farley, F (2006). Risk and rationality in adolescent decision making - Implications for theory, practice, and public policy. PSYCHOLOGICAL SCIENCE, vol 7, no. 1, p. 1-44.

9. Principles of Drug Addiction Treatment: A Research-Based Guide (Third Edition). NIDA: https://www.drugabuse.gov/publications/principles-drug-addiction-treatment-research-based-guide-third-edition/drug-addiction-treatment-in-united-states/types-treatment-programs

Statement on Academic Conduct and Support Systems

Academic Conduct

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Section 11, Behavior Violating University Standardshttps://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct/.

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Support Systems

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