**Midterm Review – Health Psychology through class on Tuesday, October 2**

**Introduction & Research Methods (Week of August 27)**

What is health psychology?

* Focus on health psychology
  + Health promotion
  + Prevention and treatment
  + Etiology of disease
  + Improvement of health care system and the formulation of health policy
* Why do we need health psychology?
  + Understand why some people get sick while others don’t when exposed to cold virus
  + Life expectancy is on the rise, but when there is dramatic upheaval in a country, life expectancy drops
  + Cancer patients with social support from friends and family are less likely to die
  + Being in a good mood when you get the flu shot can make it more effective.

Biomedical vs. biopsychosocial model

* What is the biomedical model?
  + Illness has a biological cause
* What is the biopsychosocial model?
  + There is an interplay between biological, psychological, and social aspects

Need for health psychology

* 1. Increase in chronic or lifestyle-related illnesses
  + i.e. heart disease
* 2. Advances in technology and research
* 3. Increased medical acceptance

Leading causes of death in the U.S.

* how does this relate to the need for health psychology?
  + Changed from acute diseases to chronic diseases
    - Health psychology can help prevent chronic diseases

Battling Bad Science

* Ted talk – Ben Goldacre

**Research Methods**

What are the best ways to answer questions that the field wants answered?

Biases/Faulty reasoning

* Hindsight bias – after learning the outcome of an event, many people believe they could have predicted the outcome.

Scientific method

* Markers of good research?
* Objective, well-controlled, and replicated

Research design

* Descriptive – describes people and their thoughts, feelings, and actions
  + What is a descriptive study? – Surveys and observational studies
    - Example?
* Correlational – assesses the relationship between 2 or more variables
  + What is the correlational method?
    - Correlation coefficient – statistical measure of relationship between variables
    - Operational definition – definition of variables within scope of study
    - Reasons to use a correlational design…?
      * Advantages? – good for when you can’t manipulate predictor variable (i.e. age) or it isn’t ethical to manipulate groups (i.e. smoking for 30 years)
      * Disadvantages? – can’t say anything on causes of diseases etc.
    - Correlation DOES NOT EQUAL causation
* Experimental – Manipulate factors that interest us and control those that don’t 🡪 cause and effect
  + What is the experimental method?
    - What is the independent variable? – What gets manipulated
    - What is the dependent variable? – What gets measured
    - Random assignment? – Ensure no predispositions within groups
    - Reasons to use an experimental design…?
    - Advantages? – Can assess cause and effect
    - Disadvantages? – Not a natural situation🡪 people might not act naturally

**Research Methods Continued (Week of September 3)**

* Internal Validity – ensuring nothing besides IV can affect DV🡪 control extraneous vars
* External validity – extent to which results can be generalized to other people/situations
* Longitudinal vs. cross-sectional studies
  + Longitudinal – single group of individuals observed over multiple points in time
  + Cross-sectional – compares groups of people at various ages to determine possible effects of age
  + Advantages?
  + Disadvantages?
* Prospective research – looks forward in time to see how a group of people change and how the relationship between variables change over time
  + Examples?
* Retrospective research – looks backwards in time in an attempt to reconstruct conditions that led to certain situations
  + Examples?

**Health Behaviors**

* Health behaviors – behaviors undertaken to enhance or maintain health
* Health habit – established health behaviors
* Primary prevention – teaching good behaviors early on
  + Alter
  + Prevent – easier to prevent than to alter bad habits
* Factors responsible for practicing and changing health behaviors
  + Demographics
  + Age
  + Values
  + Personal control
  + Social influence
  + Personal goals and values
  + Perceived symptoms
  + Access to health care
  + Knowledge and intelligence

Why are health behaviors hard to change?

* Consequences seem distant – little immediate incentive for practicing good health, children and teens report little concern about future health
* Health information makes us defensive – generate counter arguments, perceive it as less relevant that it actually is, minimize risks and have false sense of security, we are less vulnerable than those with similar health habits
  + Optimism bias – mentality that “it won’t happen to me”
  + Self-justification – justify a behavior and deny negative consequences during cognitive dissonance
    - Cognitive dissonance – state of tension and discomfort that arises from holding 2 different cognitions
      * What is cognitive dissonance?
      * How do we reduce cognitive dissonance? – Change the behavior to match the attitude, or changing/adding attitudes
      * Interpretation of Surgeon General’s report in 1964 by smokers vs. non-smokers?
        + Smokers justify actions by disagreeing with report
        + Non-smokers agree (confirmation bias)
* Instability and independence of health behaviors
  + Health habits controlled by different factors
  + Different factors may control same health behavior for different people
  + Factors controlling health behavior may change over time

How do we encourage people to change their health behaviors?

* Informational/Educational Appeals
  + Assumes people will change habits if they have good information
* Fear Appeals
  + Fear alone is not sufficient enough to inspire change in behaviors

**Health Behaviors continued (Week of September 10**

* Fear Appeals
  + Research on effectiveness of fear appeals
    - In addition to fear, what should fear appeals promote? – scientific info
    - Meta-analysis on fear appeals
      * What is effective? – if its too over the top, people think its ridiculous, if its too scary, people will shut down
* Message Framing
  + gain frame vs. loss frame – benefits of taking action vs. costs of inaction
    - gain frame effective for prevention behaviors (i.e. sunscreen)
    - loss frame effective for detection behaviors (i.e. HIV testing)

Change people’s attitude about particular health behavior

* Health Belief Model – Factors influencing health behaviors are perceived health threat and perceived threat reduction
  + - * What is it?
        + Main critique? – Self-efficacy
        + Evidence? – More likely to engage in healthy behavior if they feel more susceptible to various health problems that stem from failure to do so
* Theory of Planned Behavior
  + - * What is it? – Attitudes towards action, subjective norms, and perceived behavioral control all impact behavioral intention with determines if someone will adopt a health behavior
* Self-Determination Theory
  + - * What is it? – People are actively motivated to pursue goals

How do we get people to change their health behaviors?

* Changing HOW people think about health behaviors/goals
  + Implementation Intentions – what is it? – Integrates conscious processing with automatic behavioral enactment (if x then y)
    - Study examples? Obese women asked to attend diet/exercise/stress group meetings or create implementation intentions on diet/exercise. Implementation intentions lost on average 9.3 lbs. over 2 months, while group meetings lost 4.6 lbs. over 2 months
  + Self-Affirmation – what is it? – When people reflect on personal values, they are less likely to be distressed when given information that contradicts/threatens their sense of self
    - How do you affirm the self? – explain important personal value, elaborate on act of kindness
    - Study examples? – IV: self affirm or not, then shown new “plain” packaging for cigarettes, DV: measures of self efficacy, intentions, perceived behavioral control, personal vulnerability to smoking related diseases. Results: self affirmed participants reported higher levels of control, self-efficacy, and intentions to quit/cut back
  + Cognitive-Behavioral Therapy (CBT) – what is it? –
    - Self-monitoring
    - Cognitive restructuring – self talk (encouraging vs. demeaning)
    - Behavior modification
      * Classical conditioning – pairing unconditioned reflex with new stimulus results in conditioned reflex/response
      * Operant conditioning – pairing voluntary behavior with systematic consequences (reinforcement/punishment)
    - Stimulus control – rid environment of discriminative stimuli, and create new discriminative stimuli (coming home and changing to work out instead of sitting down)
    - Contingency contracting – reinforcements/punishments contingent on participants behavior (donating to cause you hate if you don’t follow through on goals)

**Health Promoting Behaviors (Week of September 17)**

What are good health behaviors?

* Examples – exercise, healthy eating, good sleep, safe sex, going to doctor, good hygiene

How much do health habits impact your mortality?

* Study results (Breslow & Breslow, 1993)? – The more good health behaviors you participate in, the longer you live

Exercise

* Physical benefits of exercise?
  + Examples? – Weight control, lowers risk for many diseases, stronger bones/muscles, lower resting heart rate/blood pressure (good for heart), better sleep, better immune system, stronger/healthier brain
* Psychology benefits of exercise? – improves mood, general well-being, self-efficacy
  + Sundgot-Borgen et al (2002)
    - Participants – 64 female with bulimia
    - Methodology? – Random assignment to exercise, CBT, or nutritional counseling
    - Results? – Exercise more effective than CBT at reducing drive for thinness and body dissatisfaction, and showed greater improvement than CBT in terms of binge eating and vomiting
  + Babyak et al (2000)
    - Participants – adults with depression
    - Methodology? – Randomly assigned to exercise, medication, and combination.
    - Results? – 4 months: all groups showed significant decrease in depression 10 months: Exercise showed lower rates of depression (30%) than medication (52%) and combination (55%)
* Cognitive benefits of exercise? – Improved executive functioning (planning), greater top-down control, and improved attention and processing speed
  + Erickson et al (2011).
    - Participants – 120 older adults
    - Methodology? – Randomly assigned to moderate-intensity aerobic exercise 3 days a week or stretching and toning
    - Results? – Aerobic exercise increased hippocampal volume by 2% (which normally decreases by 2%)
  + Cognitive benefits of exercise in children/adolescents (Booth et al., 2013)
    - Results? – More active at 11 led to better scores on standardized English and math tests at age 13-16; physically active girls performed better on standardized science tests
* Exercise interventions – incorporate self control, promote personal values, initiating vs. maintaining exercise, family based interventions, relapse prevention techniques
* How much exercise should you get?
  + CDC recommendation – 150 min moderate exercise/week OR 75 min vigorous exercise/week AND muscle strengthening activities 2 days/week
* High Intensity Interval Training (HIIT) – Alternate b/t short periods intense anaerobic exercise and less intense aerobic recovery exercise
  + Evidence?
  + Trapp et al. (2008) – 45 inactive women
    - Methodology? – Randomly assigned to 20 min HIIT 3 days/week, 40 min steady exercise 3 days/week, or control
    - Results? – Only HIIT had significant reduction in total body mass
* Developing a healthy diet
  + What is a good diet? – High fiber diets also rich in fruits and vegetables
  + Extraordinary science of junk food
    - Reactions?
  + Gearhardt et al., (2011). Can food be addictive? Public health and policy implications
    - Findings? – Obese individuals show same neurochemical deficiencies as cocaine or alcohol abusers
  + Is food addictive?
    - Evidence?
  + Moran et al., 2016 – how does perception of food as addictive factor influence support for policies?
    - Methodology?
    - Results? – Believing food is addictive makes you more likely to be for policies helping the obesity epidemic
  + How do SES factors in?
    - Evidence? – Healthier foods are more expensive 🡪 junk food 2000 calorie diet is about $3 a day, healthy food 2000 calorie diet is about $30
  + Junk Food ADs directed at childhood
    - Connell, Brucks, and Nielson (2017) – exposure to cereal ADs
      * Methodology? – Exposed to cereal ads, measured perceived healthfulness of product, affective feelings toward product, and earliest memories of product.
      * Results? – Childhood exposure can lead to more resilient bias towards good health of a product
  + Prevalence of food ADs – TV food ads make up 50% of all ad time in children’s shows, ads are almost always for unhealthy foods (34% candy/snacks, 28% cereal, 10% fast-food)
* Stress and eating
  + IV – memorize 2-digit or 7-digit number
  + DV – food choice – cake or fruit
  + Results? – 7 digit: likely pick cake over fruit (less cognitive functioning available) 2 digit: easier task, reason more for fruit
* Healthy eating – what works? – Incorporate more fruits and veggies, limit starches, use portion control, and get regular exercise
* Long-term vs. short-term effects of dieting? – 1/3-2/3 of dieters regain more weight than they lost on their diets
* Social norms and eating behavior
  + IV – social norm or health based message
  + DV – eating behavior
  + Results? – Social norm message resulted in more veggies being selected and eaten than exposure to health message
* Interventions to modify diet
  + Education + self-monitoring
  + CBT
  + Improving social support
  + Adopting strong implementation intentions
  + Family interventions
  + Social engineering

**Health Compromising Behaviors (week of September 24)**

What are some health compromising behaviors? – Smoking, bad diet, drug use, no exerise

Characteristics of health compromising behaviors

* + Habitual and addictive
  + Window of vulnerability in adolescence
  + Influenced by peer pressure
  + Pleasurable and helps to cope with stress
  + Develop gradually
  + Have similar factors
  + Common among low SES

Obesity

* Prevalence – 1990: all states below 15% 2010: all states above 20%
* BMI vs. waist circumference – waist better than BMI🡪 BMI doesn’t account for athletic/muscular builds
* Consequences of obesity
  + Physical health problems – major cause of disability, lowers drive for exercise, difficulty in performing basic tasks, poor cognitive functioning, associated with early mortality
* Why have obesity rates increased?
  + Dietary behaviors – increased consumption of sugar sweetened beverages, low consumption of fruits and veggies, increased number of meals eaten away from home
  + Food environment – increased number of fast food chains, lack of affordable healthful foods, less healthy food ads towards children
  + Lack of physical activity – 35.5% adults don’t get recommended physical activity, 81.6% high school students not participating in 60 minutes activity, only 30.3% high school students have daily PE
  + Community design – lack of infrastructure promoting activity, limited access to safe places to play and be active
  + Social networks and obesity – chances of becoming obese increase if you have a close family member or friend that is obese
* Psychological and social stress associated with obesity
  + Depression
  + Bullying, social isolation, rejection
  + Study evidence? – Compared overweight to non-overweight students: more psychological distress, higher levels of emotional distress, engaged in more unhealthy behaviors, and rated school performance and future education plans lower
* Obesity in childhood
  + Obesity and the school environment
    - BMI data from Alabama
* Diet as a risk factor for obesity
  + Yo-yo dieting – successive cycles of dieting and weight gain (lower metabolism)
  + Set point theory – each individual has an ideal biological weight, which cannot be greatly modified
  + why dieting doesn’t work (TED TALK) – you have to continue to eat minimal amounts of food for potentially years to train your brain to think you don’t need to hold on to the weight

Thursday, September 27

* Mindful eating – what is it? – Measures awareness while eating, minimizing distractions while eating
  + Mindful eating questionnaire
  + Usefulness?
  + Evidence? – 121 Australian men (52.8% healthy weight) completed measures of mindfulness and serving sizes consumed. Participants with higher levels of mindfulness had smaller portion estimates than those with lower mindfulness
* Ways to treat obesity
  + Sustainable diet changes (e.g., increasing fruits/vegetables, decreasing processed food intake, etc)
  + Bariatric Surgery
  + CBT
    - *Self-monitoring*
    - *Stimulus control*
    - *Controlled eating*
* Obesity and the microbiome
  + Study 1: genetically identical mice
  + IV? – Bacteria from obese woman or her lean twin. Mice fed same food in same amounts
  + DV? - Weight
  + Results? – Gut bacteria from obese woman caused heavier/more body fat for the mouse
  + Study 2: bacteria that procedures appetite suppressing compound
  + IV? – Mice get appetite suppressing compound or not
  + DV? - Weight
  + Results? – Mice with appetite bacteria gained 15% less weight
* Learning to crave healthy foods (Deckersbach et al., 2014)
  + IV? – Control group (no diet change) or eating program called iDiet
  + DV? – Reactions to foods (low calorie vs. high calorie)
  + Results? – iDiet increased sensitivity to low calorie foods, indicating increased enjoyment of low calorie foods
* Does obesity have social consequences beyond the individual?
  + Medical costs? - $150 billion per year
  + Productivity costs? – $6.38 billion per year
* Role of the government vs. personal responsibility?
  + Public opinion polls (PEW) – calorie counts, limiting soda size (soda tax), taxes on unhealthy foods (more support for calorie counts, less support for soda tax and taxes on unhealthy foods)
* Preventive measures for obesity
  + Training parents on sensible meal-planning and eating habits
  + Changing lifestyles at a young age
  + School-based interventions
  + Social engineering

**Health Compromising Behaviors (week of October 1)**

Alcohol

* What is heavy drinking? – 8 drinks a week for women, 15 drinks per week for men
* What is binge drinking? – 4 or more drinks one sitting for women, 5 or more for men
* Effects of high risk drinking? – Premature aging, alcohol dependence, aggression, depression, lower immunity, liver damage, nerve damage, gastrointestinal issues, complications during pregnancy, inflamed pancreas, ulcers
* Alcoholism and problem drinking – high BP, stroke, cirrhosis, cancer, sleep disorders, brain atrophy, economic loss, social problems
* Causes of alcoholism and problem drinking
  + Genetics
  + Socio demographic factors
  + Stress
  + Low social support
  + Unemployment
  + Depression
* College and alcohol consumption
  + Norms and drinking
    - Overestimation of peer drinking (Neighbors et al., 2010)
    - 3752 participants, assessed alcohol consumption, perceived norms, identification, and closeness with various groups. Students overestimate drinking habits of peers by double the actual amount
* Preventing binge drinking in adolescents
  + IV? – Intervention vs. control
  + DV? – Alcohol use
  + Results? – In both 1 and 2 year follow ups, intervention had significant effects on binge drinking
* Treatment and relapse – as much as 60% of people treated with CBT may return to alcohol abuse
  + Differences among SES – High: 68% success, Low: 18% success
    - Why?

Smoking

* Prevalence and consequences
  + Health risks? – Lung cancer, 4x increase in developing breast cancer, increased risk in chronic bronchitis, emphysema, lower birth weight in offspring, erectile dysfunction, secondhand smoke
* History of smoking in the US – 1964: first surgeon general report, 1973: AZ first state to restrict smoking in public, 1988: nicotine addictive, 1990: Congress bans smoking on domestic flights, 2009: largest federal tobacco excise tax, 2014: smoking reduced from 42% to 18%
* What factors helped reduce smoking in the US?
  + Better education, recognition that tobacco can cause cancer, legal restrictions on public smoking, legal restrictions on marketing, and higher taxes on cigarettes
  + Also see Cummings and Proctor (2014) reading
* Who smokes? – Men, people aged 25-44, native Americans/mixed race, people in the Midwest, and people with only a GED are the groups with highest smoking rates
* Ways to reduce smoking
  + Change attitudes toward smoking
  + CBT
  + Nicotine replacement therapy
  + Social support and stress management
  + Relapse prevention
* Social engineering and smoking – California first state to ban smoking
  + Smoking bans – 81.5% of US lives under ban on smoking in workplace &/or restaurants, Doctors in Britain want to ban selling cigarettes to anyone born after 2000
  + CVS and smoking – No longer selling cigarettes, expected to lose $2 billion in sales, but how much is that really affecting their profits? How many customers did they gain from ending cigarette sales?
* E-cigarettes
  + Usage? – Most commonly used among young people
  + FDA response? – Their PSAs make use of fear tactics, but isn’t the most convincing55