Gender Differences in Substance Use Disorders: Implications for Women’s Addiction Treatment

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Women and Addiction: before COVID-19 pandemic

Prevalence of substance use disorders is greater in men than women, **but gender gap has been narrowing in both U.S. and internationally:**

2012: In the U.S., women were approximately

- 42% of the users of illicit drugs (17.4 million women)
- 40% of the users of tobacco products (33 million women)
- 50% of alcohol users (85.5 million women)
- 7.6 million women >12 years of age had a substance use disorder

(SAMHSA: Results from NSDUH: Detailed Tables, 2012; Keyes et al, DAD 2008;93:21-9)
Substance Use Disorders

Data from the 2013 and 2019 National Survey on Drug Use and Health
Impact of Covid-19 on Mental Health

Covid-19's Widespread Impact On Mental Health

Share of adults who experienced stress, anxiety or sadness that was difficult to cope with alone during the pandemic

- **United States**: 33%
- **Canada**: 26%
- **United Kingdom**: 26%
- **France**: 24%
- **Australia**: 23%
- **New Zealand**: 23%
- **Sweden**: 18%
- **Netherlands**: 14%
- **Norway**: 10%

n=8,259 (February to June 2020)
Source: The Commonwealth Fund

Statista
Covid-19 and Alcohol Use: Gender differences in the U.S.

- April- June 2020 compared with same period in 2019 in the U.S. -
  Frequency of alcohol use increased:
  - 14% overall; **17% in women**
  - Women had a **41% increase in heavy drinking days**
  - Women had a **39% increase in the Short Inventory of Problems Scale (SIPS)** – (Pollard et al, *JAMA Network Open*, 2020).

- Gender differences in alcohol consumption during the pandemic with self-reported of stress (Rodriguez et al, 2020)

(Sugarman DE, Greenfield SF, *JGIM* 2020)
Exposure to Covid-19 related psychological distress shows that with greater distress, there is gender convergence of heavy drinking (i.e., # of drinks during the heaviest recent occasion) with women surpassing men in the number of typical drinks during the occasion related to psychological distress.
Overview

- Narrowing gender gap in substance use & substance use disorders
  - Alcohol, tobacco, cannabis, opioids
- Telescoping course and health effects
- Risk Factors
- Barriers to Care
- Gender-specific treatment
  - The Women’s Recovery Group
Women born after World War II have lower levels of abstaining from alcohol, and higher levels of alcohol use disorders compared with earlier birth cohorts born prior to World War II; whereas prevalence in men remained relatively constant (Grucza et al, 2008).
Prevalence of Alcohol Use Disorders in Men and Women in U.S.

In the decade between 2001/02 and 2012/13:

- 16% increase in the proportion of women who drink alcohol
- 58% increase in women’s high-risk drinking* (compared with 16% in men)
  (*High Risk Drinking (5+ drinks in men & 4+ drinks in females on one occasion once/week))
- 84% increase in women’s one-year prevalence of an alcohol use disorder (vs 35% in men)

(Grant BF…Hasin DS. JAMA Psychiatry 2017;74:911-923)
ALCOHOL Use AND ALCOHOL USE DISORDER

Women and Alcohol

Alcohol-related Health Risks through the lifespan:

- Liver disease
- Brain health/memory
- Cancer – including breast cancer
- Cardiovascular disease
- Mental health consequences
- Binge drinking/heavy drinking:
  Violence/assault,
  Unintended pregnancy,
  Sexually Transmitted Infections
Alcoholic liver disease (ALD), ages 15-39
National Health and Nutrition Examination Survey

ALD Prevalence in Adolescents and Young Adults:
1988-2012

Increase: 240%, p<0.001

Increase: 90%; p=0.006

Doycheva et al, Digestive Diseases and Sciences, 2017

Hasin DS, CPDD 2018
Alcohol and Cardiovascular Risk

- 599,912 drinkers across 83 studies in 19 countries
- Lowest risk of premature death was in people consuming < 100 grams of alcohol per week (<7 drinks week)
  - 14 grams alcohol is one standard drink (12 oz beer; 5 oz wine; 1.5 oz spirits)
- As consumption increased, risk of death from stroke, coronary artery disease, heart failure, aortic aneurysm increased
- Current recommendation is no more than 7 standard drinks for women and 14 for men within one week (98-196 gr/week)
- New threshold may be <7 standard drinks for both women and men

Alcohol and Cancer Risk

- Alcohol is implicated in cancers of mouth, throat, larynx, esophagus, breast, liver and bowel
- American Institute for Cancer Research (AICR) and World Cancer Research Fund evaluated 119 studies of 12 million women around the world (2017):
  - Vigorous exercise reduces breast cancer risk pre- and post-menopausally by 17% and 10% respectively
  - Limiting alcohol to <1 standard drink/day pre- and post-menopausally
  - No clear threshold for alcohol intake but likely less than current limits
Women and Addiction

Compared with men, women:

- Now initiate their use of substances at an earlier age than in previous generations, and at approximately the same age as their male counterparts.

- Have lower levels of abstaining and higher rates of use, misuse, and substance use disorders in recent birth cohorts.

- Advance more rapidly from first use to regular use to first treatment episode.

- Can use smaller quantities of substances for fewer years.

- Average more medical, psychiatric, and social consequences.
Telescoping Course of Alcohol Use Disorders

This phenomenon is called “telescoping”:

- Women who drink progress more rapidly to serious alcohol related physical and social consequences than their male counterparts
- Shorter time between landmarks of illness progression
- This happens at lower doses of alcohol consumed less frequently

(Randall et al, 1999; Piazza et al, 1989; Lewis & Nixon, 2014)
Physiological Basis of Telescoping in Alcohol Use Disorders

Compared with men, women have:

- Less alcohol dehydrogenase (ADH) in gastric mucosa
- Decreased first-pass metabolism; Greater absorption ETOH
- More adipose tissue & lower total body water
- For each ounce alcohol of consumed, ↑ blood alcohol concentration
- Heightened vulnerability to adverse physical consequences (e.g., brain, heart, skeletal muscle, pancreas, liver, breast)
- Similar findings for other substances including opioids, nicotine, stimulants

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1/8 US women (14 million) binge drink 3x/month; Drink an average of 6 drinks per binge; 1/5 high school girls binge drink

33% 18-25 year olds binge drink
Risks for women and girls

- **Injuries**
  Motor vehicle crashes, falls, drowning

- **Violence**
  Homicide, suicide, intimate partner violence, sexual assault

- **Chronic diseases**
  High blood pressure, heart disease, stroke, liver disease

- **Cancer**
  Of the breast, liver, mouth and throat

- **Reproductive health**
  Unintended pregnancy, sexually transmitted diseases such as HIV

- **Alcohol dependence/alcoholism**

- **Learning and memory problems**

- **If pregnant**
  - Miscarriage, stillbirth, premature birth, and low birth weight
  - Fetal alcohol spectrum disorders (FASDs) which include physical, behavioral, and learning disabilities
  - Sudden Infant Death Syndrome (SIDS)
  - Attention-Deficit/Hyperactivity Disorder (ADHD)
Substance Use and Pregnancy:

Among 15-44 year old women:

- **Drug use**: 5% pregnant women (10.8% non-pregnant) (same rates as 2009-2010)

- Varied with age: pregnant women 15-17yo (20.9%), 18-25 yo (8.2%), 26-44 yo (2.2%)

- **Current Alcohol Use** (18-44 year) (1 drink in past 30 days) increased in pregnant women from 9.2% in 2011 to 11.3% in 2018 (1/9 women)

- **Binge Drinking** (4 or more on one occasion) increased in pregnant women from 2.5% (2011) to 4.0% (2018)

- **No safe drinking levels in pregnancy: risks FAS/FASD**

(https://www.cdc.gov/ncbddd/fasd/data.html#:~:text=Using%20medical%20and%20other%20records,areas%20of%20the%20United%20States.&text=The%20most%20recent%20CDC%20study,to%20years%20of%20age.)

NSDUH 2011 (SAMHSA 2012); CDC 2019

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Tobacco

According to the U.S Surgeon General’s Report 2014:

- 42 million Americans smoked cigarettes in 2012
- 20 million women and girls > age 12
- Women’s risk of dying from smoking has more than tripled in 50 years and is now equal to that of men


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Tobacco in the U.S.

- Ratio of Adult Men-to-Women users of tobacco was **1.2:1** (34 million total smokers in 2019)
  - Adult men (15.3%) and Adult women (12.7%) (Center for Disease Control:2019; [https://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm#:~:text=In%202019%2C%20nearly%2014%20of%20adults%20in%20the%20U.S%2C%20were,with%20a%20smoking%2Drelated%20disease](https://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm#:~:text=In%202019%2C%20nearly%2014%20of%20adults%20in%20the%20U.S%2C%20were,with%20a%20smoking%2Drelated%20disease))

- Tobacco use in 2012 equal in adolescents (6.3%M & 6.8%F)

- Women: weight and mood related issues risk factors for smoking; fear of post-cessation weight gain may be barrier to quitting

- Timing of quit attempts with menstrual cycle phase may be important for some women with greater success rates in follicular than luteal phase of menstrual cycle (Allen et al, Addict Behav, 2010; Perkins et al, JCCP, 2000)
  - [http://women.smokefree.gov/](http://women.smokefree.gov/) is a helpful site

Vaping in the U.S.
Nicotine Treatment Effectiveness: Sex/Gender

Nicotine Treatment Effectiveness May Vary by Sex/Gender

- FDA approved pharmacotherapies:
  - NRT (transdermal nicotine, gum, lozenge, nasal spray, oral inhaler)
  - Varenicline
  - Bupropion SR

- **Nicotine Replacement Therapy**: transdermal patch 40% more effective Men>Women (Perkins & Scott, 2008)

- **Decreasing nicotine in cigarettes effect on abstinence**: Women>Men (Vogel et al, 2014)
  - Reducing nicotine tends to help women achieve abstinence more than men (who are helped more by the patch)

- **Varenicline**: 46% more efficacious women>men at end of treatment and 34% 6-months post (McKee et al, 2015)
Past Year Marijuana Initiates: Among People Aged 12 or Older; 2002-2020

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Note: Estimates of less than 0.05 million round to 0.0 million when shown to the nearest tenth of a million.

Note: There is no connecting line between 2019 and 2020 to indicate caution should be used when comparing estimates between 2020 and prior years because of methodological changes for 2020. Due to these changes, significance testing between 2020 and prior years was not performed.

Note: The estimate in 2020 is italicized to indicate caution should be used when comparing estimates between 2020 and prior years because of methodological changes for 2020. Due to these changes, significance testing between 2020 and prior years was not performed.

SAMHSA
Substance Abuse and Mental Health Services Administration
Sex Differences in Cannabis Use Disorders (CUD) - Withdrawal

- NESARC subsample n=1603 reporting last 12 months of use
  - Women more likely than men to experience N/V/stomach ache (3.2 vs 1.7%) (Agrawal, 2008)
  - Men more likely to experience goose bumps/pupil dilation
- Convenience sample of non-treatment seekers (n= 104 self report of serious quit attempt) (Copersino, 2010)
  - Women were more likely to report upset stomach
  - Men more likely to report craving for cannabis
- Cannabis withdrawal among treatment seekers (45 women/91 men) used 14 item withdrawal scale (Herman, Weerts & Vandrey, 2015)
  - Women had more severe scores especially mood symptoms and GI symptoms such as nausea and stomach pain
Cannabis use in Pregnancy
Increasing in U.S.

- Increase in self-reported cannabis use in U.S. adult pregnant women 2.4% (2002) to 3.9% (2014) (Brown et al JAMA 2017)
- California 2009-2016 used self-report & toxicology -8 weeks
- Increased pre-natal use from 4.2% in 2009 to 7.1% in 2016 (Young-Wolff et al, JAMA 2017)
- Preliminary data indicates some impairment to fetal growth and development but 79% of 785 pregnant women perceived little to no harm in prenatal use (Volkow et al JAMA 2017; Ko et al Am J Obstet Gynecol 2015)

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Marijuana Use among Women by Pregnancy Status

National Survey on Drug Use and Health 2019

PAST MONTH, 2016-2019 NSDUH, 15-44
Daily or Almost Daily Marijuana Use among Women by Pregnancy Status

PAST YEAR, 2016-2019 NSDUH, 15-44

- Difference between this estimate and the 2019 estimate is statistically significant at the .05 level.
• Women are more likely to be prescribed opioids, more likely to use them for a longer period of time

Epidemiology: Opioid Use among Women

Group Health Cooperative, Campbell, *AJPH*, 2010
Opioids: Prescription opioid overdose deaths increasing in women

Opioid Use

From 1999-2019: 640% increase in women vs. 478% increase in men

Figure 3. National Drug Overdose Deaths Involving Any Opioid, Number Among All Ages, by Gender, 1999-2019

*Among deaths with drug overdose as the underlying cause, the any opioid subcategory was determined by the following ICD-10 multiple cause-of-death codes: natural and semi-synthetic opioids (T40.2), methadone (T40.3), other synthetic opioids (other than methadone) (T40.4), or heroin (T40.1). Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2019 on CDC WONDER Online Database, released 12/2020.

Source: CDC WONDER
Gender differences in the prevalence of heroin and opioid analgesic misuse in the United States, 2015–2019

R. Kathryn McHugh a,b,*, Minh D. Nguyen a, Elena H. Chartoff a,b, Dawn E. Sugarman a,b, Shelly F. Greenfield a,b

Analyses from annual survey data from the 2015–2019 National Survey on Drug Use and Health

B. Past-Year Opioid Analgesic Use Disorder

Estimated Percent of Population

Age in Years

12-17 18-25 26-34 35-49 50-64 65+

Male Female
Opioid Overdose Deaths 2021

- 101,260 drug overdose deaths in the U.S. in 12 months ending in 2021 (CDC, 2021)
- Synthetic opioids major contributor to these deaths
- Some evidence of gender gap in opioid overdose deaths closing
- Male:female prevalence of OUD and opioid deaths dynamic
Gender differences in Prescription Opioid Dependence

Compared with men, women are more likely to:

- Have chronic pain
- Be prescribed opioids, given higher doses, and use for longer time periods
- Become dependent more rapidly
- Obtain prescription opioids from family and friends in one 2010 study; men more likely to purchase them

( Prescription Painkiller Overdoses, CDC Vital Signs 2013; Back et al, Addict Behav 2010 Weiss AJ et al; Patient characteristics of opioid related inpatient stays and ED visits nationally and by state, 2014)
Gender differences in Prescription Opioid Use Disorders

Prescription Opioid Addiction Treatment Study (POATS) NIDA-funded clinical trial (N=653; 40% women):

- No gender difference in opioid use disorder severity or treatment outcome
- Women had greater functional impairment, psychiatric severity, & more likely to use prescription opioids to cope with negative affect and pain
- Men had more opioid craving and significant alcohol misuse than women (Weiss et al 2011; McHugh et al, 2013)
Epidemiology: Perinatal Opioid Use

- 2.3% of women of reproductive age reported non-medical opioid use in last 30 days (NSDUH 2017)
- 0.8% of pregnant women report non-medical opioid use in last 30 days (NSDUH 2017)
- 0.4% of pregnant women at time of delivery had opioid use disorder or misuse (National Inpatient Sample)

National Survey of Drug Use and Health, Kozhimannil, 2017
National Inpatient Sample, Maeda, 2014
Geographic distribution of neonatal opioid withdrawal syndrome

- Increase in neonatal opioid withdrawal syndrome affecting 5-6 per 1,000 live births in 2015 compared with 1 per 1,000 births in 2000 (Patrick, 2012, Ko, 2016)

- Appalachia/New England with highest rates, in some states >30 per 1,000 births

- West Virginia: 2017 prevalence of intrauterine substance exposure 13.99%; incidence of NOWS = 5.12% (10x national)
MOTHER Study (Maternal Opioid Treatment: Human Experimental Research)

- Methadone or buprenorphine in treatment of pregnant women with opioid use disorders (ACOG, August 2017)
- MOTHER study (2010): 175 pregnant opioid dependent women randomized to buprenorphine versus methadone
- 131 neonates (58 buprenorphine & 73 to methadone)
- Bup exposed infants required 89% less morphine, 43% fewer hospital days, & 58% shorter duration of treatment for the neonatal abstinence syndrome (i.e., neonatal opioid withdrawal syndrome)
- More maternal drop-out in bup versus methadone group (33% vs 18%)
- Drop-out likely due to induction protocol at least in part (Jones et al, N Engl J Med 2010;363:2320-31; and also ACOG, August 2017)
Medication Treatment for Opioid-dependent Expecting Mothers (MOMS) Trial (CTN:0080): A pragmatic randomized trial comparing two buprenorphine BUP formulations (@12 sites – across the U.S.) [Winhusen T, LI]

- Two formulations of Bup – shorter acting sublingual (SL) versus longer acting extended release (XR)
- The primary objective of CTN-0080 is to evaluate the impact of treating opioid use disorder in pregnant women with BUP-XR, compared to BUP-SL, on maternal-infant outcomes.
- 12-month follow-up of mothers and infants

Women and Substance Use Disorders

Among the most reproducible research findings:

- **Increased Prevalence in Women** in past 3-4 decades of alcohol and drug use with lower levels of abstaining and higher levels of dependence (Grucza et al, 2008; Compton et al, 2007)

- **Heightened vulnerability** of women to adverse medical and social consequences (Chatham et al., 1999; Gentilello et al., 2000; Henskens et al., 2005)

- **Telescoping:** Women **advance more rapidly** than men from regular use to first treatment episode (Randall et al., 1999; Piazza et al., 1989)

- At treatment entry, with fewer years of use, women have **more medical, psychiatric, and adverse social consequences** than males (Randall et al., 1999; Hernandez-Avila et al., 2004)

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For men and women:

- Genetic factors/biological basis significant for men and women
- Early age of onset/initiation

Particularly significant for women:

- Heavy drinking/drug use by significant other/partner
- History of sexual or physical abuse and/or family violence
- Co-occurring psychiatric disorders (e.g., depression, anxiety)
- Possible sex differences in stress response

(Blum et al, 1998, J of Women’s Health, vol 7, 861)
Lifetime Alcohol Use Disorders

Men

- Anxiety Disorder: 35.8%
- Mood Disorder: 28.1%
- Drug Dependence: 40.6%

Women

- Anxiety Disorder: 60.7%
- Mood Disorder: 53.5%
- Drug Dependence: 47.1%

Kessler et al., 2004
Violence/trauma common in substance use disorders

Women more likely to experience childhood sexual/physical abuse

Strong relationship between abuse history and substance use disorders in women

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What about treatment?

Given these emerging trends and risk factors for developing SUDs

- Are there gender differences in:
  - Barriers to substance use disorder treatment and outcomes?
  - What about gender-specific treatment for women?
Specific Barriers to Treatment Entry For Women

- Less likely to be screened in primary and mental health care
- Lack of treatment services for pregnant women
- Lack of childcare services for parenting women
- Economic barriers (e.g., lack of insurance; other resources)
- Trauma histories
- Social stigma and discrimination
- **Higher risk for certain co-occurring psychiatric disorders such as mood, eating, anxiety, and post-traumatic stress disorder**

(Brady and Ashley, 2005; Pelissier and Jones, 2005; Grella, 1997; Brady and Randall, 1998; Gordon et al, 2008; Killeen et al, 2011) (ADVISE Study Kaiser)
Gender Differences in SUD Treatment Outcomes

Gender in itself **is not** a specific predictor of substance use disorder treatment outcomes

(Greenfield et al, Drug and Alcohol Dependence, 2007)

**Known predictors** of treatment outcomes can **vary** in prevalence, severity, or significance **by gender** (e.g., co-occurring disorders, trauma histories, employment, educational attainment, social support)

These predictors may have a **different level of significance** for men’s and women’s recovery

Especially true for **co-occurring psychiatric disorders** and **histories of trauma** as predictors of outcome
What is Women-Focused/Gender-Responsive Treatment?

- Addresses **gender differences in antecedents and consequences of addiction** and the treatment process
- High prevalence and significance of **co-occurring other psychiatric disorders**
- **Trauma exposure** and associated physical and mental health needs;
- Central role **relationships** with children, intimate partners, and others play in women’s addiction and recovery
- More likely to **provide adjunctive services** (childcare, job training, prenatal care) especially relevant to women’s outcomes

(Greenfield SF & Grella CE, Psychiatric Services 2009;60:880-882; Ashley & Brady; Orwin et al, 2001)
Evidence of improved treatment outcome in women-focused programs that provide adjunctive services and address psychosocial needs (potential barriers) that are more common to some subpopulations of women with SUDs:

- Childcare needs
- Financial concerns
- Support for pregnant women
- Job training
- Life skills training
- Transportation
- Peer support
- Special programming to minority women (e.g., Latinas, Native American women)
- Mental Health care
- Programming for women with trauma

(Grella et al., 1999; Volpicelli et al., 2000; Hien et al., 2004)
Most women receive treatment in mixed-gender substance use treatment programs

Recognized the need for treatment that would be gender-responsive for women with substance use disorders

Research to develop an evidence-based group treatment designed for women with substance use disorders who are heterogeneous with respect to their substance disorder, co-occurring other psychiatric disorders, trauma histories, and life stage

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WRG was developed and tested in NIH/NIDA funded Stage I and Stage II trials using mixed methods (2002-2014)

- 90 minute 12-session relapse prevention, cognitive-behaviorally focused group therapy

- Designed for women heterogeneous with respect to their substance use, co-occurring psychiatric disorders, trauma histories, and life stage

- Women-focused content & all-women group composition

- Structured sessions with check-in, topic presentation, open discussion, take home messages, assignment of a skill practice and check-out

- 14 topics that can be flexibly chosen for 12 sessions

(Greenfield et al, 2007;2013,2014)
Hypothesis Regarding Mechanism of Action

All women group composition

- Increase open discussion of triggers & relapse prevention
- Increase group cohesiveness & affiliation
- Increase comfort and support

Women-focused group content

- Education about antecedents of substance use that differentially affects women
- Education about consequences of substance use that differentially affects women

Enhanced outcomes for women in WRG

(R01DA 015434 from NIDA; Greenfield SF, et al, DAD 2007)
WRG Therapy Development: Structure of Sessions

90-minute structured relapse prevention group therapy session:

- Brief check-in
- Review of skill practice and last week’s topic
- Presentation of session topic
- Discussion by participants
- Review session’s “take home message” and upcoming week’s skill practice
- Check-out
Women’s Recovery Group

Four Levels of Participation (Patient to Titrate to Comfort):
- Attendance
- Reflective Listening
- Speaking
- Doing Skills Practice Between Session

WRG Theme: Recovery Means Taking Care of Yourself

Central Recovery Rule: Recovery = Relapse Prevention + Repair Work
14 Session Topics

1. The Effect of Drugs and Alcohol on Women’s Health
2. What are the Obstacles to Seeking Treatment and Getting into Recovery
3. Managing Mood, Anxiety, and Eating Problems Without Using Substances
4. Violence and Abuse: Getting Help
5. Women and their Partners: The Effect on the Recovery Process
6. Women as Caretakers: Can you take care of yourself while taking care of others?
7. Women’s Use of Substances Through the Life Cycle
8. Substance Use and Women’s Reproductive Health
9. The Issue of Disclosure: To Tell or Not to Tell
10. How to Manage Triggers and High Risk Situations
11. Using Self-Help Groups to Help Yourself
12. Can I Have Fun and Not Use Drugs or Alcohol?
13. Coping with Stress
14. Achieving Balance in Your Life

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Stage II Trial: WRG

▪ 156 Participants (N=100 women; 56 men)
▪ Two sites: McLean Hospital and SSTAR Recovery, Fall River MA
▪ Women randomized to WRG or to standard mixed-gender Group Drug Counseling (GDC)
▪ Continuous open enrollment, rolling group format, over 24 months in two outpatient programs in the community
▪ Would the outcomes of the WRG implemented in community practice be at least equivalent to outcomes of the effective mixed-gender treatment, GDC?
Stage II Trial: Substance Use Disorder Diagnoses

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<td>82.7%</td>
<td>93.8%</td>
</tr>
<tr>
<td>Opioid</td>
<td>17%</td>
<td>13.5%</td>
<td>20.8%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>15%</td>
<td>15.4%</td>
<td>14.6%</td>
</tr>
<tr>
<td>Sedatives</td>
<td>9%</td>
<td>9.6%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Cannabis</td>
<td>9%</td>
<td>5.8%</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

Columns do not total 100% as individuals met criteria for more than one substance dependence diagnosis; There were no significant differences between WRG and GDC (Greenfield et al, *Drug Alcohol Depend.* 2014 Sep 1;142:245-53)
## Stage II Trial: Co-occurring Axis I and Axis II Disorders

Shelly F. Greenfield, M.D., M.P.H., Women’s Recovery Group Study, NIDA R01DA015434

<table>
<thead>
<tr>
<th>Disorder</th>
<th>All women (n=100)</th>
<th>WRG women (n=52)</th>
<th>GDC women (n=48)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depressive Disorder</td>
<td>61%</td>
<td>57.7%</td>
<td>64.6%</td>
</tr>
<tr>
<td>Generalized Anxiety Disorder</td>
<td>22%</td>
<td>21.2%</td>
<td>22.9%</td>
</tr>
<tr>
<td>Post-traumatic Stress</td>
<td>20%</td>
<td>17.3%</td>
<td>22.9%</td>
</tr>
<tr>
<td>Any Axis I</td>
<td>75%</td>
<td>71.2%</td>
<td>79.2%</td>
</tr>
<tr>
<td>Any Axis II*</td>
<td>17%</td>
<td>17.3%</td>
<td>16.7%</td>
</tr>
</tbody>
</table>

* 76.5% of the Axis II disorder diagnoses were for Avoidant Personality Disorder (Greenfield et al, *Drug Alcohol Depend.* 2014 Sep 1;142:245-53)
Time Plot of Mean Days of Any Substance Use (Greenfield et al, DAD 2014)

- Shelly F. Greenfield, M.D., M.P.H., Women’s Recovery Group Study, NIDA R01DA015434
WRG Therapy Development Stage II trial

Conclusions

- Effective group therapy for women heterogeneous with respect to their substance dependence, co-occurring psychiatric disorders, trauma history, & life stage

- 90 minute, 12-session, manual-based relapse prevention group therapy with structured sessions and women-focused content

- Can be delivered in community treatment in a “rolling” group format as a gender-responsive component of mixed-gender treatment

Examined women’s experiences in both the Women’s Recovery Group (WRG) and a mixed-gender Group Drug Counseling (GDC)

Semi-structured interviews with the PI were completed by twenty-eight women enrolled in the Stage I trial were transcribed, coded, and analyzed for themes

Women in WRG focused on gender-relevant topics supporting their recovery

Compared to GDC, women in WRG more frequently endorsed feeling safe, embracing all aspects of one’s self, having their needs met, feeling intimacy, empathy, and honesty

(Greenfield, Cummings et al., 2013)
Measured group affiliation in WRG vs GDC as potential mechanism of action of the WRG

Taped and coded all group therapy sessions for specific verbal affiliative statements; analyzed these affiliative statements

There were 60% more affiliative statements made in the WRG compared with GDC (Sugarman et al, 2016)

There was greater group affiliation among members in the WRG compared to the mixed-gender control group and more exposure to greater affiliation in the WRG, predicted better outcomes at 6 months (Valeri et al 2018)
“A lot of the information that was presented to me I was very unaware of. In particular, women's health and what alcohol does to a woman's body...The education end of it was huge for me. Really huge, to the point that I was sharing it with my family and...friends.”

(Greenfield, Cummings et al., 2013)
“I think that the fact that it's all female and the fact that it's run by a female are essential because nobody ever talks about the issues being related to being female and being a caretaker or being a single mother or being a career person in a man's world.”

(Greenfield, Cummings et al., 2013)
The Women’s Recovery Group

(Greenfield, 2016)

- Developed in Stage I and Stage II behavioral therapy development trials funded by NIH/NIDA
- New single gender group treatment for women with SUDs
- Manual-based relapse prevention group therapy with structured sessions and women-focused content
- The WRG is an empirically supported, effective gender-responsive component of care that can be disseminated into routine clinical practice
- Disseminated into practice in the U.S.
- New Adaptations: Veterans; Young Adults
Using Technology to Deliver Gender-Responsive Care for Women With Substance Use Disorders

(Dawn Sugarman, PhD)

- **Aim:** To develop sustainable strategies for integrating gender-responsive components of care for women with SUDs

- Created a gender-specific, web-based intervention for women with SUDs – 30-minute psychoeducational intervention
  - demonstrated that delivery of this intervention in mixed-gender SUD treatment was feasible with high satisfaction (Sugarman DE et al, *Journal of Women’s Health* 2020)

- Adapting this intervention for young adult women with substance use problems receiving care for a co-occurring psychiatric disorder (trial in process)
Guiding Principles for Evaluation of Women with SUDs:

- Always ask about alcohol, drug, and tobacco use
- Complete (or refer for) a full medical evaluation including reproductive health assessment
- Assess for:
  - the full range of co-occurring psychiatric disorders (e.g., mood, anxiety, eating, and post-traumatic stress disorders)
  - potential motivators and rewards for substance use disorder treatment and recovery
  - potential obstacles for recovery including partner alcohol and drug use, co-occurring psychiatric disorders, shame and stigma, family, legal, and employment obstacles
  - safety risk including intimate partner and domestic violence
  - past history of trauma
  - risky behaviors for HIV and other sexually transmitted disease
Treatment of Women with SUDs

Guiding Principles for Evaluation of Women with SUDs:

- Use women-focused and gender-responsive approaches:
  - Integrate conceptual and empirical evidence about gender differences in antecedents and consequences of addiction and the treatment process
  - Include treatment for co-occurring other psychiatric disorders; trauma exposure and associated physical and mental health needs;
  - Address the central role relationships with children, intimate partners, and others play in women’s addiction and recovery
  - Provide appropriate and necessary adjunctive services

Shelly F. Greenfield, M.D., M.P.H
Guiding Principles for Evaluation of Women with SUDs:

- Assess for the following (Consider research questions – frequency/prevalence of these practices?):
  - Substance history: alcohol, drug, and tobacco use
  - Complete (or refer for) a full medical evaluation including reproductive health assessment
  - The full range of co-occurring psychiatric disorders (e.g., mood, anxiety, eating, and post-traumatic stress disorders)
  - Potential motivators and rewards for substance use disorder treatment and recovery
  - Potential obstacles for recovery including partner alcohol and drug use, co-occurring psychiatric disorders, shame and stigma, family, legal, and employment obstacles
  - Safety risk including intimate partner and domestic violence
  - Past history of trauma
  - Risky behaviors for HIV and other sexually transmitted disease
Conclusions

- Narrowing gender gap in prevalence of substance use disorders
- Women born in the last 5 decades have lower rates of abstinence and higher rates of substance use
- Women have a telescoping course of addiction
- Treatment outcomes can be enhanced by programs that provide services and other programming specific to women’s needs (e.g., co-occurring disorders, trauma, childcare)
- A number of gender-responsive, evidence-based therapies exist
- The WRG is a manual-based single-gender women’s recovery group with women-focused content may enhance treatment outcomes that can be integrated into community-based SUD treatment programs

Shelly F. Greenfield, M.D., M.P.H.
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THANK YOU!

McLean Hospital


References


References

- Lindblad R, Hu L, et al. Mortality Rates Among Substance Use Disorder Participants in Clinical Trials: Pooled Analysis of Twenty-Two Clinical Trials Within the National Drug Abuse Treatment Clinical Trials Network☆☆☆☆ JSAT 2016;70:73-80. DOI: http://dx.doi.org/10.1016/j.jsat.2016.08.010
References


- Helping Yourself Heal [http://www.kap.samhsa.gov/products/brochures/pdfs/helpinghealwomen_08r.pdf] This brochure, accompanying the publication Substance Abuse Treatment for Persons With Child Abuse and Neglect Issues, #36 in the Treatment Improvement Protocol (TIP) series, was produced and updated by JBS International, Inc.

- NIDA Clinical Trials Network (CTN) dissemination library provides access to journal articles, webinars, and more [http://ctndisseminationlibrary.org/]


References


- [https://researchnews.kaiser.org/?p=2271](https://researchnews.kaiser.org/?p=2271) ADVISE Alcohol Drinking as a Vital Sign


References

- Principles of Drug Addiction Treatment: A Research Based Guid (3rd edition):
- ACOG committee opinion on opioid use and OUD in pregnancy
- Guidance for supporting women in co-ed settings:
- A collaborative approach to the treatment of pregnant women with OUDs:
- The Clinical Guidance for Treating Pregnant and Parenting Women with Opioid Use Disorder and Their Infants: https://store.samhsa.gov/product/SMA18-5054
References

- **Addressing the needs of women and girls: Developing core competencies for mental health and substance abuse service professionals** - U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (HHS, SAMHSA)
  [http://store.samhsa.gov/shin/content/SMA11-4657/SMA11-4657.pdf](http://store.samhsa.gov/shin/content/SMA11-4657/SMA11-4657.pdf)


- Providers Clinical Support System: PCSS-MAT [https://pcssnow.org/](https://pcssnow.org/)

References


References

- 2019 CDC https://www.cdc.gov/ncbddd/fasd/data.html#:~:text=Using%20medical%20and%20other%20records,areas%20of%20the%20United%20States.&text=The%20most%20recent%20CDC%20study,to%20years%20of%20age.


