

# **SUBSTANCE USE AND FEMALE REPRODUCTIVE HEALTH: A LIFE CYCLE APPROACH**

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# THANKS

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# Women and reproductive consequences of drug abuse

- Biological effects
- Psychosexual
- Reproduction
- Social precedents and antecedents

# BIOLOGICAL DIFFERENCES..

- TELESCOPING - shorter latency from initiation use to SUD
- Greater co-occurring anxiety and depression
- Use to manage negative affect

McHugh et al, 2014

# Initiation

- Elder males : friend, family member or spouse
- Occupation: sex work, bartending
- Curiosity and alleviation of stress or physical pains
- Cultural beliefs: Older women advise alcohol after childbirth

Nebhinani et al,2013

Murthy et al,2005

# Adolescent Female Substance Use

- About 1:5 female students - physically and/or sexually abused by a dating partner, associated with
  - *Increased risk of substance use*
  - *Specific pattern of substance use (heavy smoking, binge drinking, driving after drinking, cocaine use)*
  - *Unhealthy weight control behaviors (eg, use of laxatives and/or vomiting)*
  - *Sexual risk behaviors (eg, first intercourse before age 15 years)*
  - *Pregnancy*
  - *Suicidality*

*(Female 9-12th-grade students, participated in 1997 and 1999 Massachusetts Youth Risk Behavior Surveys (n = 1977 and 2186, respectively))*

*Silverman et al, 2001*

# Adolescent Female Substance Use

- Substance-using adolescents initiate sexual intercourse at younger ages

Kowaleski-Jones and Mott, 1998

- More frequent sexual intercourse

Poulin and Graham, 2001

- More sexual partners

Howard and Wang, 2004

- Less consistent in use of contraception

# Fertility Issues in Substance Abusing Partners

## ■ Marijuana

- *Disrupts HPG axis, decreased LH*
- *Significantly lower plasma testosterone (reduction dose dependent, oligospermia)*
- *Adverse impact on male fertility;*

## ■ Opioids, methamphetamines, cocaine, anabolic-androgenic steroids (AAS) :

- *adverse impact on male fertility;*

## ■ Prescription narcotics:

- *Suppress HP axis through opioid-induced inhibition of GNRH pulse patterns,*
- *Suppress LH release and*
- *Decreases testosterone levels and spermatogenesis*

Fronczak et al, 2012

## ■ Cocaine using men:

- *5-year or more history*
- *Low sperm motility twice as likely*

Bracken et al, 1990



# ILLICIT DRUGS AND MARITAL SATISFACTION

- Community sample of newly married couples (n=634)
- Illicit drug use and changes in marital satisfaction over first 4 years of marriage
  - *Congruence in use patterns rather than discrepancy*
  - *H & W with discrepant drug use: lower marital satisfaction (H > W)*
  - *Many continued use (H 21%, W 16%)*
  - *But past year illicit drug use declined*

Homish, Leonard & Cornelius 2008

# Alcohol

- Less condom use, other high-risk sexual behaviors, risk of infections
- Many female sex workers use alcohol and substances before sexual activity

Gupta et al, 2009

- Heavy alcohol consumption: increased risk of menstrual disturbances, infertility and breast cancer.

Lal Deb & Kedia et al 2015

# Tobacco

- Smoking
  - *Decreased fertility,*
  - *Early menopause*
  - *More symptomatic menstruation*
- Oral contraceptives and smoking together:
  - *Increased risk of stroke and myocardial infarction*
- Strong association between smoking
  - *Cervical cancer,*
  - *? Breast cancer*

Poole & Dell, 2005

- Women who smoke: menstrual disruptions, delayed conception and increased risk for infertility and fetal loss

Hull et al., 2000

## CONSEQUENCES OF DRUG USE ON SEXUAL RELATIONS (Iran)

- Cross-sectional, 236 girls and young women aged 16–25 years, 2012
- 3 groups: SU vulnerable (incarcerated) SU non-vulnerable (no incarceration), control group
- Extramarital sexual relations :
  - 43.8% *SU vulnerable women (41.7% /36 unsafe)*
  - 55.8% *SU non-vulnerable women (18.6% /43 unsafe)*
  - 1.4% *in the control group (1-safe)*
- Poverty, drug dependency, divorce, and alcohol consumption make women prone to other high risk behaviours

Khajedaluae et al 2015

# Intimate Partner Violence (IPV)

- Past-year prevalence rates of physical and sexual IPV: 25% - 57% (SU treatment facilities)

El-Bassel et al., 2003

- High rates of IPV may be playing a major role in
  - Heterosexual HIV transmission
  - Unprotected sex
  - Higher rates of STD
  - Multiple partners
  - Trading sex for money or drugs
  - Sex with injecting drug users
  - Having sex with HIV-positive partners

Devries et al, 2011

# Mechanisms Linking IPV - HIV Risks Among Drug-involved Women

- Sexual coercion- lack of condom use
- Unstable relationships
- Increased extradyadic dependence for housing, finance, drugs, social
- Crack cocaine using women: low social status gives partners greater entitlement to abuse

El Bassel et al, 2011

# Sexually transmitted infections

- Increased risk of STDs, TB, irregular menstrual cycles, amenorrhea, MTP  
RAS, Ray et al, 2004
- STIs (chlamydia, gonorrhea, syphilis, and HIV/AIDS) : leading cause of female and male infertility  
Pellati et al., 2008
- Partners of substance-using women also more likely to drink, smoke, or use illicit drugs  
Agrawal et al., 2006

# Pregnancy – Special Vulnerability

- Highest risk period for developing SU: reproductive years (18–44), especially ages 18–29
- Most frequently used substances in pregnancy : tobacco, alcohol, cannabis and other illicit substances

Forray, 2016

- Effect of substance use in pregnancy:
  - DIRECT – effect of the drug
  - INDIRECT - behaviors attributable to mother's addiction

Behnke et al,2013



# Pregnancy

## **Pregnancy: Direct Effects**

- Short term: Growth retardation, teratogenicity, neonatal withdrawal, neonatal abstinence, neuro-behaviour
- Long term: Childhood growth, behaviour, language development, academics

## **Pregnancy: Indirect Effects**

- Poor nutrition
- Decreased access/compliance with health care
- Increased exposure to violence
- Increased risk of mental illness and infection

Behnke et al,2013

# Alcohol and Pregnancy Outcomes : increased risk

- Women > 5 drinks/week in 1st trimester –5 fold increase- 1st- trimester **spontaneous abortion**

Kesmodel et al. 2002

- Women with any alcohol use: 40% increase for **stillbirth**

Aliyu et al, 2008

- Prenatal alcohol exposure: **placental dysfunction**, decreased pla-cental size, impaired blood flow and nutrient transport, endocrine changes

Burd et al. 2007

- Prenatal alcohol exposure: **preterm birth**

Kesmodel et al. 2000; O'Leary et al. 2009

# Baby: Short Term Effects

- Fetal Growth – Decreased by prenatal tobacco, alcohol, opiate, methamphetamine, cocaine exposure
- Congenital Anomalies – evidence for nicotine, alcohol. Less evidence for methamphetamine and cocaine. Almost none for cannabis and opiates
  - *Therapeutic opioid use in pregnancy statistically significantly associated with cono-ventricular septal defects, atrioventricular septal defects, hypoplastic left heart syndrome, spina bifida or gastroschisis*

Broussard et al, 2011

- Withdrawal – well defined for opiates (NAS)
- Neuro-behavioural symptoms peri-partum – defined for all substances, irritability and lability of state, decreased behavioral and autonomic regulation, poor alertness

# Child: Long Term Effects

- **Growth:**

- Nicotine – obesity,*

- Methamphetamine – decreased early childhood growth*

- **Behaviour –**

- Nicotine: Impulsivity, attention, externalising.*

- Alcohol: inattention, substance use, criminal behaviour*

- **Cognitive/Executive -**

- Nicotine; learning and memory,*

- Alcohol; IQ, attention,*

- Marijuana; problem-solving,*

- Cocaine; visuo-motor, attention, working memory*

- **Language - Nicotine and Alcohol**

- **Academic Development –**

- Nicotine; arithmetic and spelling,*

- Alcohol and Marijuana; spelling and reading*

Behnke 2013

# SU: Psychiatric Co-morbidities

- Treatment-seeking women substance users comorbid for
  - Depressive disorders 12%
  - Adjustment disorder 5%
  - Somatoform disorder 3%
  - Anxiety disorder 2%
  - Schizophrenia 2%
  - Obsessive compulsive disorder 1%
  - Bipolar affective disorder 1%

Nebhinani et al, 2013

- RAS respondents: psychological problems like insomnia, depression, anxiety, suicidal attempts and guilt feelings

RAS, Ray 2004

# Families & Social Networks of Women with SU

- Few people who can/do help
- Socially/economically stressed
- Loss: Distanced or severed relationships
- Family members who are incarcerated, active drug users, have mental health problems, past/ current abuser(s)

Amaro, 2015

# Stigma - Ramifications

- In pregnancy - stigma associated with maternal substance use prevents women from accessing treatment

Poole, 2005

- Intense stigma encourages victimization of drug using women

Lal et al, 2015

- National survey: 31% SU women across sites single, 32% separated or divorced
- Rates of suicide attempts significantly higher in drug-dependent women
- Women: more problems in family and social domains.
  - *Men: substance use affects occupation.*

Ray et al, 2004

# Other complications

- Social: interpersonal difficulties, homelessness, unemployment, poverty

Crome et al, 2007

- National Survey: harsher treatment from family, increased risk for physical and verbal abuse

- Similar for women seeking treatment for de-addiction Ray et al, 2004

- Compared with light drinkers or abstainers, heavy or problem drinkers report more partner conflict and relationship dissatisfaction

Whisman, 2007



# Legal..

- Mothers accessing treatment report high levels of current custody problems (35%) and loss of custody in the past (35%) (Vancouver, Canada)
- **Child-centered policy** - limits rights of mother, rather than enhance mother's health, safety and capacity to parent

Poole, 2005

# 'Gaps in Knowledge'

**'Lack of research-based information on all aspects of women's substance use and related problems,**

- Pattern and prevalence,*
- Physiological and psychosocial effects and consequences,*
- Characteristics of women with substance use problems,*
- Treatment experiences.*
- Drug abuse among women...studied more systematically*
- Both qualitative and quantitative methods of research*
- Multi-centered studies.'*

**More responsive treatment facilities and modalities**

Lal, Deb & Kedia 2015

***THANKS***