Women’s Mental Health Across the Lifespan

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No conflict of interest

No discussion of non-FDA-approved medications or devices

Case presentation is a composite with no personal identifiers
Sex and gender affect
- The likelihood of developing mental health conditions
- Course, prognosis and treatment response

This overview will highlight key influences on women’s mental health throughout the lifespan, including...

- Genetics and epigenetics
- Gender-linked stresses and traumas
- Reproductive cycle stages

We’ll see how these factors interact to influence mental health and psychopathology
Sex differences – biologically based

Gender differences – culturally based (with or without biological influence)

• Societal gender roles can amplify small sex differences
• These influences can accumulate across a lifetime
• Prevalence is almost doubled in women compared to men\textsuperscript{1}
• Gender divergence begins at mid-puberty and persists until menopause\textsuperscript{1}
• Reflected in prevalence rates for Veterans\textsuperscript{2}

Ella is a 51 year old Army Veteran who comes to you for evaluation and treatment of depressed mood, nightmares, sleep interruptions and panic attacks. She has experienced depressive symptoms on and off since age 12, and PTSD symptoms since being sexually assaulted while deployed at age 24. She’s never sought treatment until now. For the past 4 months, symptoms have been more severe than ever before.
A comprehensive understanding of Ella’s symptoms starts at the beginning....

Ella tells you that her mother had mental health problems for years, but never sought treatment. Her maternal grandmother and maternal aunt each had severe postpartum depression.

www.thesun.co.uk/sol/homepage/woman/health/health/5307192/Study-shows-babies-can-pick-up-depression-in-womb.html
"Orchid" alleles more susceptible

When interacting with stress, "orchid" alleles confer more risk for depression and anxiety in females than in males

"Cactus" alleles more resilient

Ella’s mother told her that her pregnancy with Ella was very stressful, and that she was severely depressed and anxious throughout the pregnancy. Ella was born with low birth weight.
Maternal distress

Physiologic changes, such as cortisol elevation

Affects which fetal genes are expressed and how fetus develops

Low birth weight (biomarker for in utero stress)

Enduring heightened stress responses in offspring

• With milder maternal distress, fetal programming is posited to be adaptive, preparing offspring to be reactive to a stressful world\(^1\)

• Children exposed to severe, prolonged maternal distress in utero are at higher risk for mental health problems, independent of mother’s postpartum symptoms\(^2\)
  – Internalizing (anxiety and depressive disorders)
  – Externalizing (ADHD, conduct disorder, oppositional defiant disorder)
  – Cognitive deficits

Prospective, longitudinal Great Smokey Mountain study of cumulative depression prevalence from 13 – 16 years old

- Girls with normal birth weight 8.4%
- Girls with low birth weight 38.1%
- Effect of birth weight on depression more marked for girls than boys

By age 2, Ella had caught up in her growth and then exceeded normal weight for height. Early developmental milestones were normal.

• Low birth weight babies are posited to have a “thrifty phenotype” (permanent alterations in metabolism)

• This can lead to “catch up” growth
  • Helpful if leading to normal weight and height; this promotes normal development
  • Some children “overshoot”, becoming overweight. Limited data suggest higher risk of obesity and metabolic syndrome later

Ella’s parents often fought, physically and verbally, in front of Ella and her brother. Ella tended to brood about these fights. Her brother usually distracted himself.

Gender influence on coping style

• Rumination (directing attention toward negative feelings and thoughts) more common in girls
• Problem-solving and distraction more common in boys
• Ruminative style confers higher risk of depression

As a child, Ella felt “fat and ugly”. She began showing breast development by age 9, with menarche at age 11. Boys started making sexual advances. Ella went through a period of promiscuity and binge alcohol drinking from age 12 – 18. In retrospect, this is when her depressive symptoms began.
Beginning at about age 13, the prevalence of depression in girls rises to about twice that in boys.

- Ruminative coping style
- Family discord; absent father
- "Catch-up" growth from low birth weight
- Increased leptin
- Increased social pressure; sexual maturation precedes frontal lobe maturation
- Gonadal hormone fluctuations (puberty, menstrual cycle)
- Sexual abuse

Early puberty

GENDER-LINKED INFLUENCES AT PUBERTY
Ella joined the Army at age 21. She performed well, but she endured insults and sexually suggestive comments from male peers.

At age 24, Ella was deployed to Iraq for the first Gulf War. She was raped by two men in her unit. She did not report this. She began having recurrent nightmares and other PTSD symptoms, but continued to perform well.
GENDER-LINKED STRESSES AND TRAUMAS

**Sexual**
- Childhood sexual abuse
- Rape
- Sexual harassment
- Military sexual trauma

**Reproductive**
- Unintended pregnancy
- Perinatal loss
- Reproductive coercion

**Gender**
- Harassment
- Discrimination
- Intimate partner violence
PRE-DEPLOYMENT GENDER DIFFERENCES IN MENTAL HEALTH RISKS

Women > men

- Sexual assault
- Parent with substance use disorder
- Emotional maltreatment
- Depressive symptoms
- Felt less prepared by training
- Felt less unit social support
- Worries about family

Men > women

- Physical assault

DEPLOYMENT GENDER DIFFERENCES IN MENTAL HEALTH RISKS

Women > men
- Sexual harassment
- Sexual assault
- Gender harassment
- Lack of support from peers, supervisors (excluded from unit cohesion, a key influence on resilience)

Men > women
- Combat
- Difficult living and working environments

Shortly after returning to the U.S., Ella married an Army Veteran. They had two children, the first unintended and the second planned. Ella felt depressed for several months after each birth. Her depression was especially severe after the birth of her first child.
• The perinatal period is a high risk time for new onset or recurrence of psychiatric disorders¹
• Between 2003 and 2014²
  • 174,921 infants were born to ADSMs
  • 1,043,812 infants were born to dependent spouses of ADSMs
• Between 2000 and 2010, VA-covered deliveries increased from about 350 per year to more than 2,000 per year²
• Rates of unintended pregnancies (age-adjusted) compared to the general U.S. population
  • 50% higher among active duty women³
  • Comparable among Veterans⁴
  • Among Veterans receiving psychiatric care in a VA WHC, 73% of pregnancies were unintended⁵

Ella reports running her family “military-style”. Her husband cared for the children during Ella’s subsequent deployments.
• Compared to male Veterans, women Veterans are
  – 3 times more likely to be single parents if they have children
  – 5 times more likely to have a partner who is also eligible for deployment
  – More likely to get divorced and remain divorced

• Gender-linked social challenges
  – Parenting transitions; attachment problems
  – Conflicting role expectations (woman/warrior)
  – Others have less understanding of their military identities and traumas upon homecoming

About 6 months ago, Ella retired from the Army. She did this to help take care of her father, who had a stroke, and because she had developed fibromyalgia.

Ella’s oldest child is about to leave home for college. Her youngest child has become rebellious. He was recently arrested for marijuana possession.

Since retirement, Ella spends more time around her husband, and notices they have few interests in common. She has less interest in sex than before, which frustrates her husband.
Ella reports that for about 1.5 years, she has had irregular menstrual cycles and hot flashes. Night sweats often awaken her from sleep.
WHAT IS PERIMENOPAUSE?

• The hormonal transition to menopause (absence of menstrual cycles for at least a year)
• Perimenopause can last for years
• Erratic increases in estrogen levels (NOT “estrogen deficiency”)
• Disturbed ovarian-pituitary-hypothalamic feedback loops
• Hormone levels are more variable, less predictable

COMMON SYMPTOMS DURING PERIMENOPAUSE

- Irregular menstrual cycles
- Heavier and/or lighter menstrual bleeding
- Vasomotor symptoms (hot flashes, night sweats)
- Increased urinary frequency; urinary incontinence
- Mid-sleep awakenings
- Sore, swollen or lumpy breasts
- Vaginal dryness
- Weight gain

• Absolute levels of sex hormones do not correlate with depressive symptoms during perimenopause\(^1\)

• Increased variability of estrogen and other sex hormones around the woman’s baseline levels correlates with developing depressive symptoms during perimenopause\(^2,3\)

• Hormonal variability interacts with stress to influence mood
  – Estrogen variability increases reactivity to stressors
  – The effect of estrogen variability on depression is increased by experiencing major stressors

• Relationship transitions
  – Women more likely to be widowed (15% of women vs 4% of men)
  – After midlife divorce, women less likely than men to find a new partner
• Caregiving transitions
  – Women 3x more likely to help parents with activities of daily living
  – Women may spend equal time caring for elders and children
• Health and aging transitions
  – Women are less likely than men to die in midlife, but more likely than men to experience the onset of chronic illness
  – Concerns about altered body image may be more salient for women
• Being widowed, becoming a caregiver, and having declining health correlate with increased depressive symptoms

More than 10% of active duty personnel were women
More than 70% of women deployed in the Gulf during the air and ground war reported at least one combat exposure
Many were the first woman in their unit to perform their roles
Military culture did not adapt sufficiently to influx of women
Military sexual trauma was brought to public attention

Caps on % of women and rank attainment had been removed
Conscription had ended; roles for women were less restricted

INFLUENCES ON MENTAL HEALTH AT PERIMENOPAUSE AND MIDLIFE

- Hormonal flux
- Hot flashes
- Medical illnesses
- Reduced physical activity
- Sleep disturbance
- Risk of depression more than doubles during perimenopause
- Attitudes toward aging
- Midlife stressors
- Role transitions

(stressors and risk factors for mental health in perimenopause and midlife)
GENDER DIFFERENCES AMONG OLDER ADULTS

• On average, women live longer than men
  – Greater burden of non-fatal disabling conditions, including depression
  – More often live alone
  – Less social support

• Health promotion and disease prevention efforts, including treatment of mental health problems, can reduce disability and improve quality of life
SUMMARY OF INFLUENCES ON ELLA’S MENTAL HEALTH

• Possible genetic vulnerability to depression and anxiety disorders
• In utero, her mother’s distress may have contributed to Ella’s low birth weight and heightened stress responsiveness
• “Catch-up” growth led to overweight and resultant low self esteem
• Overweight and family discord contributed to early puberty
• Biological and social effects of early puberty contributed to depression and anxiety
• Ella’s ruminative coping style influenced how she handled the stresses in her family and peer group, contributing to depression
• Military sexual trauma and gender harassment led to PTSD
• Postpartum hormonal flux conferred additional risk
• Deployments disrupted family; military culture influenced parenting style
• Midlife stressors and role transitions, along with the hormonal flux of perimenopause, intensified her depression and anxiety
KEY INFLUENCES ON WOMEN’S VULNERABILITY AND RESILIENCE

- Genetic influences
- Fetal programming
- Gender-linked stresses and traumas
- Gender-influenced coping style
- Reproductive cycle stages
- Cultural gender roles and their interaction with military culture
• Understanding life-long influences on mental health may reduce self-blame

• Women who learn that they are more physiologically vulnerable to stress may be motivated to actively manage this
  – Maintaining physical activity
  – Maintaining healthy eating patterns and food choices
  – Maintaining social and spiritual support
  – Expanding repertoire of coping strategies

• Pharmacotherapy can be optimized during times of reproductive transition (premenstrual, perinatal, perimenopausal)

• Psychotherapy can target the most relevant influences and concerns