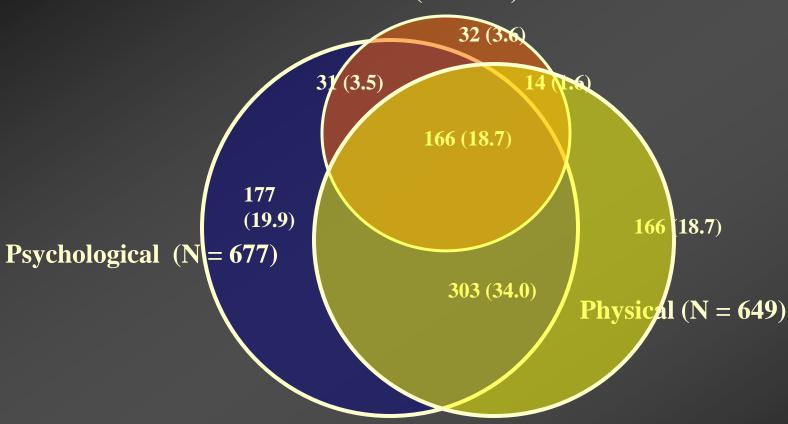


HIV/IPV Connections — Etiology (Maman et. al. '99) >0-3.7%

- Immune system depression with stress
 - 2010 add immune system alteration with stress of IPV, PTSD
- Genital trauma-increased transmission; anal sex
 - More severe forced sex, multiple forced sex
- Increased STD's & untreated STD's
- Impossible to negotiate safe sex if IPV
- Women accused of infidelity if ask for safe sex
- Males have other partners unknown to women (WHO '04)
- Fear of being beaten for being tested; notifying partner of positive status; delay in treatment
- Substance abuse

Overlap between physical, sexual and psychological abuse (N = 889) (Campbell et. al. '02

from Ellsberg '00)
Sexual (N = 243)



Results - ACAAWS 2012

- Of 422 African American and African Caribbean women who experienced physical abuse:
 - 157 (37%) reported an experience of forced sex -by partner majority said forced sex repeated (many times)
 - **41%** were age 18-24
 - 92% were Black/African American or African Caribbean (vs. Black with Hispanic Ethnicity)
 - 50% of the sample single
 - 79% had children under 18
 - 43% reported a monthly income of \$400-\$1200
 - 76% had received some sort of publicly available assistance

Multiple US Samples

- \$35-45% of physically abused women also physically forced into sex
- If asked, majority say multiple many times
- If asked, a substantial proportion (up to ½) of forced sex was anal sex
 - ACAAWS study forced sex associated with Inconsistent Condom use Last 5 Anal Acts 4.52 (1.15, 17.72) (Draughon et al '12)







WHO's landmark study documents the horrifying extent of violence against women by their intinuits partners. It also dearly shows that report also deals with non-partner violence, violence against women demands a public health response, because the impact of such violence goes for beyond the immediate harm caused, affecting all aspects of women's future health.

This pure many outlines the trittal results of the study based on evidence collected from over 24 000 women by carefully trained teams of interviewers, it presents the lindings from IS sites in 10 countries representing diverse cultural settings Bangladesh, Brazil, Ethiopia, Japan, Peru, and the United Republic of Tanzania.

Focusing on the prevalence of violence by intimate partners, and the associations

between such violence and women's physical, mental, sexual and reproductive health, the sexual abuse during childhood and forced first second experience.

Who do women turn to and whom do they tell about the violence in their lives? Although some women leave home and some fight back, the shocking answer in too many cases is nobody

The report culminates in 15 recommendations to strengthen rational commitment and action on violence against women by promoting primary prevention, ham essing education systems, Narabia, Samoa, Serbia and Montenegro, Thailand, principlesing health sector responses, supporting women living with violence, sensitizing criminal justice systems, and undertaking research and enhancing collaboration.

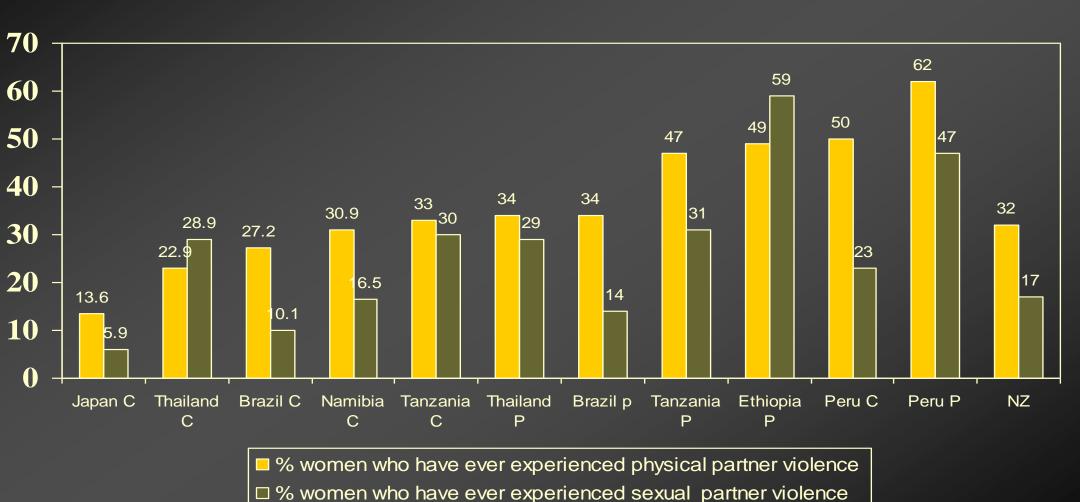
Summary report

WHO Multi-country Study on Women's Health and Domestic Violence against Women

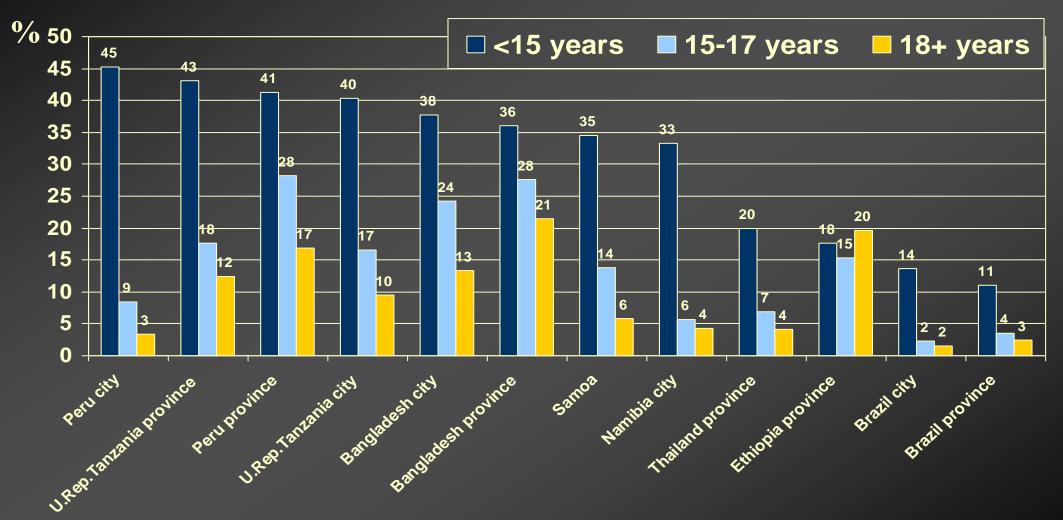
Initial results on prevalence, health outcomes and women's responses



Women Experiencing Physical & Sexual Partner Violence



The younger a woman's age of first sex, the risk of a forced first sexual experience is higher



Note: Japan city, Serbia and Montenegro city and Thailand city are not represented due to low percentages reporting first sex before age 15 yrs.

Forced First Sex/Sexual Initiation

- Forced first sex (sexual initiation) as a result of IPV ("dating violence")
- First sexual violence in an ongoing violent relationship?
- In US anal sex not considered "sexual intercourse" (or "real sex") by msny adolescents therefore "safe sex" practices not necessary & can remain "abstinent" even if anal sex
 - Abusive young men exploit these myths

Globally - women dying in 3:1 ratios from AIDS & majority of new cases - young women especially

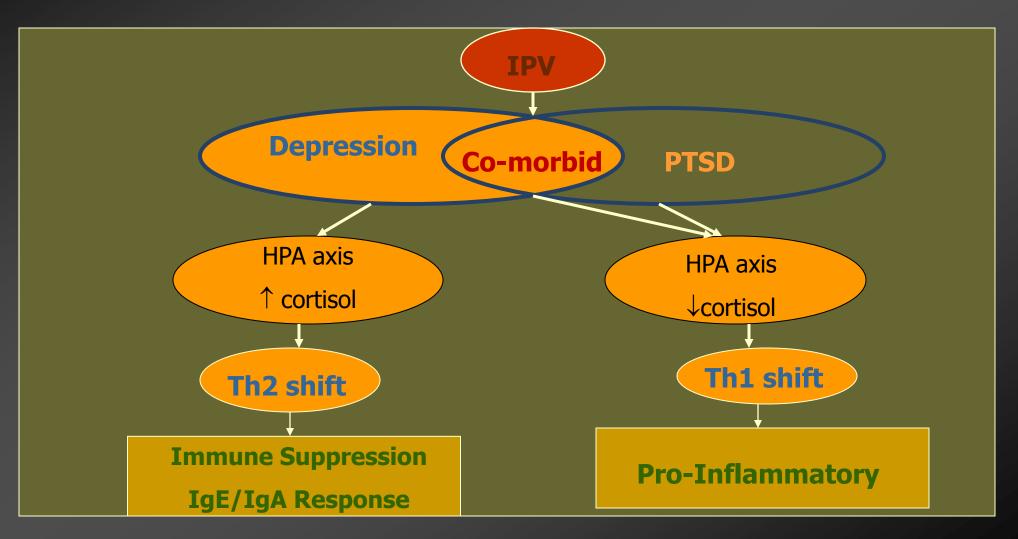
In the US:

- 48,000 new HIV infections '09 women majority of new cases (Prejean et al., 2011)
- African American women 66% of new dx among women in 09 (CDC, 2011).
- African American also women disproportionately affected by IPV (CDC 2011)
- 87% of new dx among women -heterosexual contact (CDC, 2011).

IMMUNE SYSTEM EFFECTS

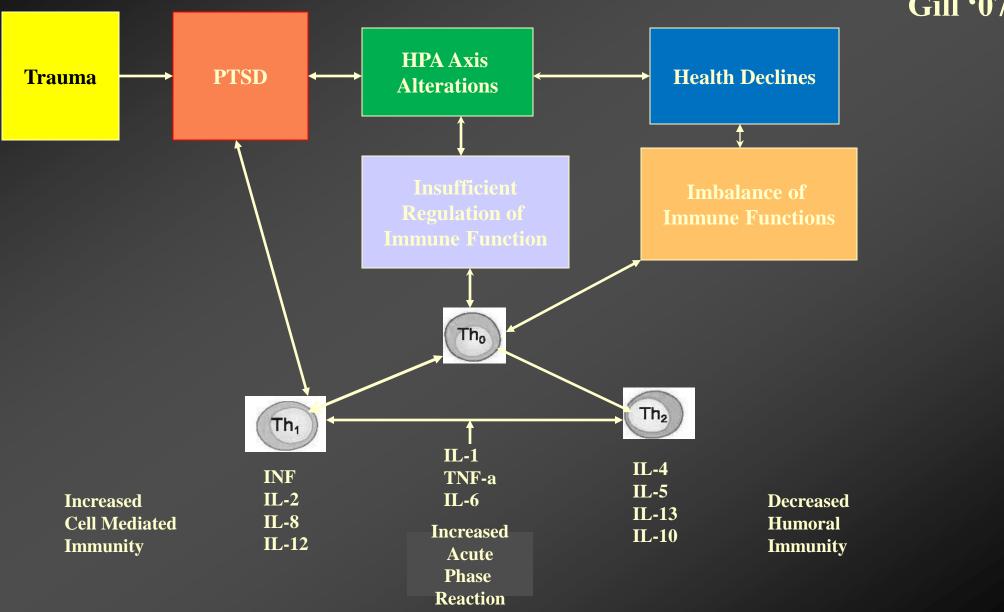
- # HPA axis hypothalmic pituitary adrenal gland interactions
- Stress of abuse, multiplied by poverty, other stressors – but even separate from other stressors -activates HPA & produces corticosteroids & catecholamines
- Suppresses Th1 cell cytokine (fights bacteria & viruses) production
- Depression has same effects on immune system
- May results in lowered immunity to HIV

Bio-Psycho-Immunologic Response to Trauma (A. Woods '04)



PTSD Immune System Alteration

Gill '07



Physiological Effects of IPV on Immune System Not totally clea

- *PTSD & co-morbidity differential effects?
- Inflammation markers C-reactive protein (CRP) and interleukin-6 (IL-6) increase w/IPV Newton '11; Granger, S. Woods '11
- Multiple physical injuries e.g. strangulation, TBI, immune system effects
- Stress/PTSD/depression leads to decreased CD4 counts Ickovics, '01; Leserman '03
- *CSA/CAN stress response & immune system early alterations more profound? Compounded with adult IPV? (both independent effects S. Woods)

More Questions than Answers

- STI interactions repeated, multiple, untreated, affecting immune system –inflammation significantly increased acquisition of HIV
- Menstrual cycle, young age issues
- Friability of urinary & vaginal tissue increased by inflammation?
- Interactions with chronic pain
- How to measure, when to measure —
- How much of sex differences in HIV (transmission, progression) related to ongoing SV (IPV)
- How to fully capture complexity of female humans

Physiological Model For IPV-HIV Acquisition/Progression

Altered Stress Response (HPA) **CSA PRO** Inflam- Through CD4 matory Mulitple Bio-HIV/AIDS decrease **IPV Injuries** gical Response **Acquisition/** Co-Through **Infections Progression** (CRP) other STI's Anal Sex*

*Intimate Partner Sexual Assault – severity, repetition, if anal

Moving Forward

- Exciting New Collaborative interdisciplinary research teams of basic sciences, physiology, epidemiologists, behavioral and clinical scientists
- Official and increasing recognition of full complexity of interfaces by UN, US State Dept, USAID, WHO, CDC, DHHS, NIH