

Session 14. Depression & Women

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The Female Preponderance in Depression

Studies around the world report higher lifetime rates of 'major depression' (ie principally non-melancholic depression) in women.

Assumption: primary female preponderance in depression.

Consequence of primary finding: anatomy is destiny?

What if: depression preponderance is secondary?

To what: (i) anxiety, or (ii) a higher-order variable disposing independently to both anxiety and depression.

Is it merely artefactual?

That is, women more likely to seek help, volunteer depressive features when specifically asked, remember (while men forget) or experience 'mood amplification' (ie women focus by ruminating and men 'forget'), or have items weighted to gender-dimorphic depressive and coping strategies (eg crying or chocolate eating).

Yes, but not sufficient to explain the overall gender difference.

Do epidemiological studies inform us about possible determinants?

–[See US National Comorbidity Study or NCS, assessing some 6,000 individuals in the community for lifetime depression. We plotted chance of developing first episode of major depression in this sample].

–Parker and Hadzi-Pavlovic, *Psych Med*, 2004.

Such a bimodal pattern of divarication occurring at menarche and menopause could reflect:

–Sex role changes

–Socialization factors

–Biological factors.

Social influences

Kessler showed that controlling for rape and other sexual trauma in NCS survey halved the gender difference, but broadening variables to include traumatic experiences more likely to be experienced by men, restored the gender differential). So differential trauma rates an unlikely candidate – as for other social influences when carefully examined.

Socialization and sex role influences

–Suggestion that socialization experiences shape self, leading in girls to a greater propensity for more internalizing disorders such as anxiety and depression, or that "Marriage is toxic to women and protective to men". (But difference emerges in puberty, not post-marital years). Gender difference is also only for first episode – not second and recurrent episodes. If gender difference due to social factors (eg poor marriage), would expect gender impact on onset AND recurrence.

Why Might Anxiety be Relevant?

NCS Lifetime rate	Male	Female	Ratio
Major depression	21.3%	12.7%	1.6:1
Anxiety disorders	30.5%	19.2%	1.7:1

We* analysed NCS database to determine the extent to which

(i) Gender, and

(ii) Prior Anxiety Disorder (PAD)

influenced chance of subsequent depression.

For major depression: gender risk = 1.25; PAD risk 1.40

For dysthymia: gender risk = 1.24; PAD 1.49.

*Parker and Hadzi-Pavlovic (2001). *Acta Psychiatrica Scand*; 103:252-256

Could Specific Anxiety Conditions be the Driver?

As against 'all anxiety', what about separate types?

NCS database studied again: 5877 subjects, examining impact of 6 anxiety disorders: simple phobia, social phobia, panic attacks, panic disorder, agoraphobia and generalised anxiety disorder (GAD) on depression.

Examining covariation of anxiety disorders with depression suggested closest links with Panic Disorder and Generalised Anxiety Disorder (other anxiety disorders, such as social phobia), showed much earlier age when female preponderance emerged, and did not covary with depression gender pattern.

Parker and Hadzi-Pavlovic, Psych Med (2004).

Negative Studies.

Studies of university students generally fail to find sex differences in levels of depression – see Jorm 1987.

Study of British civil servants in similar occupational roles and without children.

Study of Anglo-Jewry group in London (Loewenthal et al, 1987).

Teachers' Study (Wilhelm and Parker) – commenced 1977, with 5-year follow-up reviews.

So, in socially homogeneous groups, a female preponderance in 'depression' is not always evident. Thus, anatomy is not necessarily destiny.

Cause and Mechanisms

Evident in all community studies but not necessarily demonstrated in socially homogeneous populations suggests a diathesis stress model (ie female gender may be necessary but not sufficient – requiring salient stressor) → higher rates of anxiety and depression.

Our model proposes 'limbic system hyperactivity'.

**Parker and Brotchie (2004), From diathesis to dimorphism: the biology of gender differences in depression. J Nerv Mental Dis (2004)*

Cyranowski et al (2000) argued that both social and hormonal (esp. oxytocin transmission regulated by fluctuating levels of estrogen and progesterone) mechanisms increase affiliative needs for females at puberty.

–[Gilligan's "In Another Voice"].

Seeman (1997) suggested that estrogen cyclicity may make women more vulnerable to stress hormones (eg not neutralize effects of glucocorticoids), while ovarian steroids modulate the GABA-A benzodiazepine receptor, with on-and-off binding to intranuclear estrogen receptors in the brain increasing greater vulnerability to stress.

Parker and Brotchie, J Nerv Mental Dis (2004)

These and other regulatory hormonal changes may contribute to a diathesis factor (once called 'neuroticism' but which we prefer to call 'limbic system hyperactivation') which would dispose – but not of necessity dictate – women being more prone to autonomic discharges and hence anxiety and depression. The increased anxiety (or 'hypervigilance') would have distinct advantages in hunter tribesman communities.

Although differential sex role advantages may be less necessary or evident in contemporary Western communities → biological underpinnings persist.

Explanation 'normalises' a phenomenon.

Parker and Brotchie, J Nerv Mental Dis (2004)

The Female Preponderance in Depression – Cause and Mechanisms: IV

Limbic system hyperactivity in post-pubertal women → had an ethological advantage in promoting vigilant defence in females in hunter gatherer societies.

Testosterone changes in pubertal boys leading to assertive risk taking → would have had societal benefits in hunter gatherer communities.

Parker and Brotchie, J Nerv Mental Dis (2004)

MANIFESTATIONS & HELP-SEEKING DIFFERENCES.

PSYCHOTIC AND MELANCHOLIC DISORDERS:

–No clear gender differences in key constructs (eg psychomotor disturbance) but content (eg guilt content) may be influenced by gender.

NON-MELANCHOLIC DISORDERS:

–Women more likely to internalise (eg go quiet, go to bedroom, cry) and men more likely to externalise (eg anger, increase alcohol).

–Women more likely to engage in self-consolatory strategies. (eg shop, chocolate). Food craving may be homeostatic (eg stress relieving, reflect a deficiency of serotonin) but the ‘serotonin hypothesis’ (ie ingestion of carbohydrates stimulates release of insulin leading to an increase in brain serotonin) may be a myth.

TREATMENT DIFFERENCES.

Kornstein et al (Am J Psychiat, 2000) reported an analysis of a trial of drug treatments for major depression, that women were more likely to respond to an SSRI than a TCA, while the converse phenomenon held for men. Methodologically a good study – and difference not likely to be due to differing tolerability (ie men tolerating TCA side-effects more easily), but failure to replicate in several recent studies (see Parker et al, Psych Med, 2003).

Clinical observation that women more likely to benefit from CBT (and possibly other psychotherapies). If true, likely to reflect greater affiliative tendencies and capacity to form treatment alliance more readily, while men more defensive and guarded.

Principal Depressive Sub-types: A Structural and Functional Model Linking ‘Stress’ and At-risk

Personality Style – A Spectrum Model.

Our ‘spectrum model’ assumes that:

–certain biological processes shape temperament and personality (T&P),
and

–T&P then shape the phenotypic picture as well as influencing coping repertoires *and* differential responses to differing treatments.

Developed for all at-risk 8 personality styles but here illustrated for 3 only...

Treatment Implications?

Established literature base limited (as research largely restricted to ‘major depression’ and ‘dysthymia’). But....

–‘High trait anxiety’ (comprising internalising ‘anxious worrying’ or externalising ‘irritability’ styles) responds well to SSRI medication (presumably muting ‘emotional dysregulation’).

–‘Self-focussed’ (volatile, non-empathic, hostile) respond poorly to all medications and show poor compliance.

–‘Perfectionists’ show poor response to all treatments (antidepressants and psychotherapies).

Our objective: to develop a disorder-treatment matrix and thus a more rational ‘horses for courses’ treatment model? (ie a better road map).

The Black dog Institute Black is a clinical, research and educational body dedicated to improving understanding, diagnosis and treatment of depression and bipolar disorder. Information & resources are available for both patients & clinicians at the website.

www.backdoginstitute.org.au. (A number of educational courses for general practitioners are listed on the website)

Information on a number of studies currently being undertaken by the institute is also available.