



Depression in Women with Multiple Sclerosis (MS)

A.Dessa Sadovnick

Professor, Medical Genetics & Neurology

University of British Columbia, Vancouver, Canada

&

Director, Western Pacific Regional Research & Training

Centre

email: dessa.sadovnick@ubc.ca

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Disclosures

No conflicts with
data in this talk.

Learning Objectives

- To identify the magnitude of depression + anxiety within the MS population
- To identify any gender-specific issues
- To be certain that screening tools are validated for the MS population
- To encourage clinical assessment for behavioral disorders be part of MS assessments

General Population *

Females:

- 2X more likely to have depression
- 2X more likely to have anxiety**
- More likely to be diagnosed & treated compared to males
- Often have anxiety + depression comorbidly
- Potential contributors: genetic, biological, hormonal, environmental, cultural factors ***

*WHO (2001)

**<http://www.adaa.org>

***Altemus M, et al., *Front Neuroendocrinol* 2014; 35: 320–330.

Depression

Most common mental disorder
Major determinant of “Quality of Life”

- lack pleasure in daily activities
- significant weight loss or gain
- insomnia or excessive sleeping
- lack of energy
- inability to concentrate
- feelings of worthlessness or guilt
- suicidal ideation

Anxiety

- Feelings of tension, worried thoughts & physical changes
- Recurring intrusive thoughts or concerns
- Avoiding certain situations out of worry
- Physical symptoms (e.g. sweating, trembling, dizziness, rapid heart beat)

<http://apa.org> (Oct 1, 2015)

Behavioral Disorders



Multiple Sclerosis



Cognition



F/M



**Adult vs
Ped.**



**Depression;
Anxiety**



F/M



**Adult vs
Ped.**

MULTIPLE SCLEROSIS

One body.... so many symptoms

Internuclear Ophthalmoplegia

Ocular Dysmetria

Optic Neuritis

Diplopia

Nystagmus

Afferent Pupillary Defect

Paraesthesia

Anaesthesia

Neuralgia

L'Hermitte's Syndrome

Proprioceptive Dysfunction

Trigeminal Neuralgia



Constipation

Incontinence

Bladder Spasticity

Dysfunctional Reflexes

Restless Leg Syndrome

Spasticity

Dysarthria

Atrophy

Spasm

Hypotonia

Myoclonus

Footdrop

Paresis

Pain

Vitamin D and B12 Deficiency

Degenerative Spine Disease

Ataxia

Intention Tremor

Dysmetria

Vestibular Ataxia

Vertigo

Speech Ataxia

Dystonia

Dysdiadochokinesia

Aphasia

Depression

Dementia

Mood Swings

Cognitive Dysfunction

Anxiety

Bipolar Disorder

Fatigue

Uhthoff's Syndrome

Gastroesophageal Reflux

MS – Males + Females

- Sex ratio approaching 3F:1M
- Lifetime risk of depression @50%
- Lifetime risk of anxiety @36%
- Depression/Anxiety have deleterious effect on quality of life, but often under-diagnosed & treated in MS
- Self-report rating scales important for use in MS clinical settings

Data from Canadian MS clinics reveal that:

1. depression is frequently missed
 2. even when detected, is often inadequately managed
- Limited data on gender + MS + depression
 - Even less available on gender + MS + Anxiety

***Mohr DC et al. Multiple Sclerosis 2006; 12: 204/208.**

WHY ARE WE CONCERNED ABOUT DEPRESSION + ANXIETY IN MS?

- Rates of depression and generalized anxiety are high
- Both groups of symptoms have been linked to suicidal intent (MS suicide rate increased)
- Identifying evidence of emotional distress is an important part of any MS clinical assessment

Depression Treatment in MS

No sex specific differences known to date re effectiveness, compliance, or type of treatment

Cognitive Behavioral Therapy (CBT)

- treatment of choice (time consuming, needs expertise)

Antidepressants

- “Modest effect”
- Side effects a concern if MS also present

AAN evidence-based guidelines, Minden et al., Neurol 2014
Koch et al., Cochrane Libr 2011

Hospital Anxiety & Depression Scale (HADS): Validated in MS

- 14 item scale that generates ordinal data
- 7/14 items relate to anxiety
- 7/14 items relate to depression
- Each item is scored from 0-3
- Validation important - e.g. fatigue, insomnia, anorexia & impaired concentration are 4 common symptoms that may be attributed to depression, MS, or both.
- MS cut-off 8/21 or above on depression questions
- MS cut-off 8/21 or above on anxiety questions

HADS Depression Questions

- I still enjoy the things I used to enjoy
- I can laugh and see the funny side of things
- I feel cheerful
- I feel as if I am slowed down
- I have lost interest in my appearance
- I look forward with enjoyment to things
- I can enjoy a good book or radio or TV program

HADS Anxiety Questions

- I feel tense or wound up
- I get a sort of frightened feeling as if something bad is about to happen
- Worrying thoughts go through my mind
- I can sit at ease and feel relaxed
- I get a sort of frightened feeling like butterflies in the stomach
- I feel restless and have to be on the move
- I get sudden feelings of panic

Gender, MS + Depression: No Gender Differences

No Gender Difference – Study Co-factors	Epidemiol.	Brain Imaging	Therapy	Gender + Mood
N/A	Beiske et al., 2008			
N/A	Chwastiak et al., 2007			
N/A	Dahl et al., 2009			
RRMS + Beta-Interferon			Galeazzi et al., 2005	
Brain volume, frontal lesion load		Zorzon et al., 2001		
HADS 6.3 males; 6.4 females				Nagels et al., 2005

Gender, MS + Depression: Gender Differences

MS diagnosed by self-report;
16.7%F:13.1% M
“Composite International Diagnosis Interview – short version”

Patten et al., 2003

HADS-D Scores
6.1 F/4.5M

DaSilva et al., 2011

Longitudinal 2 year study;
Female preponderance

Brown et al, 2009

Methods:

- 711 MS patients included
- HADS
- Gender comparisons - linear regression analysis

Results:

- Higher HADS anxiety scores in females ($p < 0.001$), but no differences in HADS depression scores

[Théaudin M, Romero K, Feinstein A](#): *Mult Scler.* 2015 Jun 3. pii: 1352458515588582. [Epub ahead of print]

	Males (N = 222)	Females (N = 489)	t-test/χ^2	p value
HADS Depression	6.3 (SD 4.2)	6.4 (SD 4.2)	t = -0.281	p = 0.779
HADS Anxiety	6.5 (SD 4.2)	8.22 (SD 4.7)	t = -4.555	p < 0.001
HADS Depression Score \geq 8	137 (38.3%)	305 (37.6%)	$\chi^2 = 0.028$	p = 0.806
HADS Anxiety Score \geq 8	84 (37.8%)	255 (52.1%)	$\chi^2 = 12.532$	p < 0.001

People with MS have a higher risk of Depression/Anxiety cf general population:

- Gender differences exist only for anxiety...
- thus etiological factors underpinning anxiety + depression in MS differ from one another...
- and depression in MS differs from that in the general population as no female preponderance is observed

Peri-Partum Depression (PPD)

- No systematic evaluation of the occurrence of depression in the peri-partum period when a woman has MS.
- By comparison, in epilepsy, estimated rates of peri-partum depression in women by 6 months post-partum range between 25% and 29%,¹⁻³ compared to 13-19% of women in the general population.⁴

1. Turner K et al. *Epilepsy Behav.* 2006;9(2):293–297.

2. Galanti M et al. *Epilepsy Behav.* 2009 Nov;16(3):426–430.

3. Klein A. *Neurol Clin.* 2012;30(3):867–875.

4. Beck CT. *AWHONN Lifelines Assoc Womens Health Obstet Neonatal Nurses.* 1999;3(4):41–44.

PRACTICAL CONCLUSIONS

- MS patients (men, women) are known to be at increased risk for depression + suicide
- MS women have a higher risk for anxiety compared to MS men

THUS

MS patients should be routinely screened for depression and anxiety using a validated instrument, e.g. HADS, as part of clinical care

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