

Evolution Has Shaped Gender-Specific Coping in Depression

Mary V. Seeman., MD

Professor Emerita, Department of Psychiatry, University of Toronto, Toronto, Ontario, Canada

***Corresponding Author:** *Mary V. Seeman., MD, Professor Emerita, Department of Psychiatry, University of Toronto, Toronto, Ontario, Canada, Email: mary.seeman@utoronto.ca*

Depression is well known to be more prevalent in women than in men [1,2]. In addition to differences in demographics, precipitants of depressive illness are often gender-specific, as are symptoms, coping styles, and the probabilities of seeking treatment. This commentary proposes that these sexual dimorphisms have been selected by evolution on the grounds that they once held distinct advantages for women and men.

GENDER-RELATED PRECIPITANTS OF DEPRESSION

Beck and Bredemeier [3] recommend that depression be viewed as an adaptation to conserve energy after the perceived loss of an “investment in a vital resource” such as a relationship, a meaningful identity, or a personal asset. Because such losses represent a threat to survival, the ability to withdraw in order to regroup can be seen as vital, and this ability must have served our ancestors in terms of investment in future generations.

Because, for most of human history, men were hunters, the personal assets that, to this day, represent the greatest losses for men are those that diminish their ability to hunt prey and avoid predators and protect their women and children. Loss of hunting weapons (e.g. money, status) and hunting ability (e.g. muscle strength, mobility, speed, acuity of vision or hearing) continues to trigger male depression [4]. The losses need not be real – they are usually perceived losses, assessed by comparing oneself unfavorably to other men [5].

For women, the most significant personal assets from the perspective of evolution are those that foster reproduction and nurturing of children. Because mothers always need help from others in order to best care for their children, the loss of a close relationship or a drop in social support are very important precipitants of depressed

mood in women. Again, this is usually a perceived loss. Women more than men are sensitive to looks [6] and words [7] so that even moderate disapproval and criticism can be profoundly wounding. In addition, because women are more sensitive to the pain of others than men are, depression can be triggered when a close friend or family member is in pain. Over countless generations, women were dependent on their mates to ensure the health and survival of their children. Loss of a woman’s perceived ability to attract and maintain a man’s attention (disfigurement, dissatisfaction with body image, blows to reputation) can readily trigger a depressive reaction. The loss is usually a comparative one, comparing oneself to potential rivals and ending up feeling inferior.

GENDER-RELATED SYMPTOMS

The experience and symptoms of depression differ in men and women [8]. The DSM-V symptoms required to make a diagnosis of depression are: sadness, loss of pleasure, weight loss, insomnia, restlessness, fatigue, feelings of hopelessness and guilt, problems with concentration, and recurrent thoughts of death and suicide [9], while common symptoms of depression in men also include anger, aggression, risk taking, escapist behavior, isolation and substance abuse [4,8]. These symptoms have evolutionary advantages. The human history of war and conquest attests to the fact that, for males, anger, aggression, and adventurous risk-taking have boosted survival, at least for the conquerors [10, 11].

Women are more likely than men to cry when depressed [12], to look for support from others, and to seek professional help. Characteristically, women find relief in sharing their distress [13,14]. Crying is known to increase attachment bonds between people and to elicit social support [15]. The effects of infant crying makes

its evolutionary advantage evident. Women may also become irritable, have difficulty making decisions, show a lack of energy, a sharp rise in self-criticism, distortions of self-image, work difficulty, and loss of interest in sex. These symptoms appear counterproductive but can be understood in the context of needing to conserve energy for the future. During a difficult period, it may be wise to hibernate and postpone effort to a time when it is more likely to prove successful. More often than men, women, when depressed, show atypical symptoms such as eating more rather than less, sleeping more, becoming exquisitely sensitive to what people say, and quick to take offence [16,17]. They also lose their menstrual periods when depressed. Such symptoms do not serve evolutionary ends but, according to the reproductive suppression hypothesis [18] women optimize their reproductive success over the lifespan by suppressing reproduction during times when there is danger that offspring may not survive. What may at first seem disadvantageous may show longer-term benefits.

Sleep problems associated with depression can have benefits as well. While insomnia enhances vigilance during times of perceived danger, excessive sleep can serve as a form of adaptive inactivity [19]. The same can be said for eating problems. Evolutionary hypotheses have been formulated about both not eating and eating too much [20]. There are even existing theories about the evolutionary advantages of anxiety and sadness, both prominent symptoms of depression in women and men [21].

GENDER DIFFERENCES IN COPING WITH DEPRESSION

From an evolutionary viewpoint, human coping with depressed mood involves appraising one's situation in a way that minimizes losses, conserving energy, disengaging from unobtainable goals, signaling submission to more powerful others, soliciting support from others, and attempting to solve problems through thinking [22].

A generalization about men is that they first deny psychological pain, then try to numb it (by alcohol and drugs), then look for distraction (through risky activities), then get angry (4). This allows them to avoid facing loss directly and, at the same time, to disengage from pursuits that were probably headed for failure. They can do this without submitting to anyone or seeking support from anyone. Men tend to

avoid contact with peers when depressed [23], which, in the long run, leads to the solitude necessary for effectively analyzing the relevant issues behind the depression and arriving at a plan for change. Anger and aggression can be helpful in this regard.

The rumination that characterizes many depressions, perhaps especially so in women, allows analysis and ultimate solution of the underlying problem so that it can be prevented in the future. This has been called the analytical rumination (AR) hypothesis of depression [24].

In general, women are more risk averse than men. They have less trouble than men submitting to others and soliciting help. They tend, in fact, to actively seek support. Women are more likely than men to accept professional help for depression [25-28] and are more likely to become the object of aid, assistance, and solace, all of these helping to offset losses.

Men are more likely to want to do it alone [29] and there may be an evolutionary advantage to men of the trait of independence.

For men and for women, depression is associated with a brain state of alarm that helps to guard against predators and an inflammatory state that is protective against pathogens. Being depressed shields a person not only from a surprise attack by lions and tigers, but also from bacteria and viruses. The inflammatory response that accompanies depression helps to mount an immune response to infection and also to increase the speed of wound healing [30,31], an important advantage for both sexes.

Given the different roles and somewhat different habitats of males and females over the early millennia of primate evolution and given their differing reproductive strategies, it is not surprising that their adaptations to depression differ. Such considerations need to guide psychotherapeutic inquiry and to inform medical interventions for women and men.

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