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## Pain and Attention-Deficit/Hyperactivity Disorder: The Case of Margaret Mitchell

The article by Wu et al. (1) that appeared in the June 2018 issue of *Psychosomatic Medicine* reported the results of a meta-analysis of cognitive impairment in fibromyalgia (FM). In this article, it was shown that patients with FM have cognitive impairment in learning/memory, attention/psychomotor speed, executive function, and working memory.

Given the findings of this meta-analysis, it is of interest to note that Pinals (2) has suggested that Margaret Mitchell (1900–1949), author of *Gone with the Wind* (GWTW), “the world’s best-selling novel,” had chronic widespread pain for many years and suffered from what appears to be FM and associated cognitive impairment. Her widespread pain was reported to have played an important role in writing the novel, as stated in one of her biographies, “She never thought of writing without pain” (3).

The various medical issues associated with her pain began in 1920 with lower backache originating from the sacroiliac joint, which caused her pain throughout her life. Her bouts of pain became repeated and intermittent and spread to the abdomen, neck region, both shoulders, both hip joints, and both lower limbs, ultimately spreading throughout her entire body with severe intensity. As her husband stated, “I could not rub her at all from the back of her head to her toes—the slightest pressure was too painful” (4). Furthermore, Mitchell reportedly experienced a high degree of fatigue, lower abdominal pain, depression, and headaches. According to the current guidelines of the American College of Rheumatology Preliminary Diagnostic Criteria for Fibromyalgia (2011) (5), FM is diagnosed when the total widespread pain index + symptom severity score is 13/31 or higher. Based on her aforementioned symptoms, it can be inferred that Mitchell’s total widespread pain index + symptom severity score would be at least 26, and thus, she would probably have met the diagnostic criteria for FM according to the current guidelines (2).

Moreover, as this article indicates (2), she was particularly accident-prone, sustaining serious leg burns and having two horse-riding accidents during childhood, and was involved in three separate motor vehicle accidents as an adult, indicating that inattention was also a consistent feature throughout Margaret Mitchell’s life. She died at the age of 48 years after being hit by a taxi. Upon close reading of her biography (6), we noted many descriptions of events where Margaret Mitchell possibly exhibited features of attention-deficit/hyperactivity disorder (ADHD). Attention-deficit/hyperactivity disorder is a developmental disorder associated with central nervous system dysfunction; it is classified into predominantly inattentive, predominantly hyperactive-impulsive, and combined types (7).

Using the writings in her biography, we searched the literature to identify potential psychiatric diagnoses for “Peggy,” as she called herself, including that of ADHD. This biography was written on the basis of the discovery of a large number of her publisher Macmillan Inc’s valuable documents regarding the history of the editing and publication of GWTW, which were thought to have been lost. Furthermore, this biography is also based on the individual interviews of the author Anne Edwards with more than 500

relatives and friends connected to Mitchell (6). Hence, this is the most descriptive biography of Mitchell’s life. Here, we extend the results of our literature review to a discussion on the relationship between Margaret’s FM and ADHD. According to the diagnostic criteria outlined in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)* (7,8), adult ADHD is diagnosed by at least five of nine symptoms of inattention and/or at least five of nine symptoms of hyperactivity/impulsivity in a person older than 17 years. In the course of our review, we identified episodes in Peggy’s life suggestive of specific symptoms of inattention and hyperactivity/impulsiveness as shown below.

Several factors indicate that Peggy experienced problems with attention, including inattention related to work-related activities (*DSM-5* inattention criterion a), being dreamy or preoccupied (criterion c), needing others to structure things (criterion e), avoiding tasks requiring sustained attention (criterion f), and forgetfulness (criterion i) (6). Specifically, although she wrote stories from early childhood, her handwriting was wavering, lopsided, and riddled with spelling mistakes. Even as an adult, her second husband, John, is noted as constantly finding grammar and spelling errors in GWTW. Peggy also found it very difficult to type articles (all falling under criterion a, for inattention). As a child, Peggy was not happy in school and would make up stories in which she would be the heroine (c). In her day-to-day life, she was unable to function on her own and relied heavily on John. She required John’s assistance to follow through with writing GWTW. He pressed her into writing and helped her with every page on the way (e). Peggy was pressured to write a sequel to GWTW but would use poor health as an excuse and put it off day after day (f). When Peggy returned home, she typically forgot to turn off the downstairs lights (i).

Other descriptions indicate that she also had characteristics of hyperactivity and impulsivity, including overactivity (*DSM-5* criterion c), not being quiet when appropriate (criterion d), always “on the go” (criterion e), excessiveness (criterion f), and prematurely saying what comes to mind (criterion g). Specifically, Peggy would frequently ride her horse at full speed up and down a hill while standing in the saddle, often for several hours. When she was a child, she climbed trees, no matter how high, more quickly than anyone else. A photograph taken when Peggy was attending high school shows 23 members of her drama club gathered around a motor vehicle, with Peggy conspicuously being the only member sitting on its roof (these behaviors all fit with *DSM-5* criterion c for hyperactivity/impulsivity). Ignoring the advice of her family, Peggy wore a strikingly conspicuous and outrageous costume to a Lent ball, where she performed an Apache dance while acting like a prostitute and shrieking wildly. This performance apparently outraged the society matrons of Atlanta. Peggy could always be located immediately in a crowd because she was the type of person who would laugh loudly even in a movie theater (criterion d). From early childhood through into her adult life, after leaving home in the early morning, Peggy would eat breakfast on horseback and be the earliest person to arrive at work, where she worked tirelessly and prolifically (e). Peggy was described as a “chatter-box” by her parents. She spoke spiritedly when conversation turned to her favorite subject, which was the American Civil War (f). From early childhood, Peggy was outspoken and had a habit of saying things without hesitation that shocked her friends.

While honeymooning, her inattention led to detailed reminiscences about a previous lover, which quickly soured relations with Red, her first husband (g).

In light of the above descriptions of Peggy's behaviors as a child and an adult (some of which were also seen before 12 years of age), we think that she had five symptoms of inattention and five of hyperactivity/impulsivity according to the *DSM-5* diagnostic criteria for ADHD and is likely to have had ADHD of the combined type.

These observations are consistent with the assessment by Pinals, stating that Peggy may have had FM, and also with the additional presence of ADHD. This co-occurrence of FM and ADHD is consistent with recent findings (9–13) and the meta-analysis by Wu et al. (1). These studies support a high frequency of ADHD among patients with FM (25%–80%) (1,9–13). Both FM and ADHD share cognitive impairments in memory, attention, executive function, and working memory. These conditions are also considered to involve dysregulation of dopamine neurotransmission (14,15). In patients with FM accompanied by ADHD, improvements in both ADHD and pain symptoms have been observed with treatment using medications targeting ADHD symptoms (11). For example, in a study with 48 patients with FM who received 10 to 60 mg methylphenidate daily, concentration, energy, and mood improved significantly over the 30-day treatment period (16). In addition, Stahl's *Essential Psychopharmacology* describes that atomoxetine, a nonstimulant used for ADHD treatment, is effective for "fibro-fog" in FM (17).

According to our research, ADHD has been found to coexist in patients with chronic pain (72.5%) who had been diagnosed with probable somatic symptom disorder and referred to our pain clinic (18). Moreover, this report suggested that this pain can be substantially improved by the treatment of ADHD (methylphenidate and/or atomoxetine). Therefore, screening for coexistent ADHD is also important in the medical treatment of chronic pain conditions other than FM.

Pinals (2) suggested central nervous system dysfunction as the neural mechanism underlying Peggy's chronic pain and concluded his article with the following observations: "There were no effective treatments for FM during her lifetime, but one wonders how she would have responded to medications available today." In addition, if Margaret Mitchell had received treatment in the form of ADHD therapeutics, which could have improved her pain and symptoms of ADHD, she may have been able to start work on the much anticipated follow-up to GWTW that she continuously deferred.

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