

# Women Care with Delusional Disorder

Subjects: Nursing  
Contributor: Mary Seeman

Delusional disorder is a difficult-to-treat clinical condition with health needs that are often undertreated. Although individuals with delusional disorder may be high functioning in daily life, they suffer from serious health complaints that may be sex-specific.

Keywords: psychosis ; delusional disorder ; women ; health care ; sex-specific treatment

## 1. Introduction

For several decades, epidemiological studies have consistently reported gender differences in the expression of mental disorders. The prevalence of some common mental disorders such as mood disorders, anxiety and somatoform disorders are reported to be substantially higher in women than in men while substance use disorders are higher in men <sup>[1][2]</sup>. In general, male/female ratios in the frequency and severity of psychiatric problems vary with age <sup>[2]</sup>. For instance, during adolescence, girls are more likely than boys to show depressive symptoms and eating disorders, to present clinically with suicidal ideation, and to attempt suicide <sup>[3]</sup>. In adulthood, the prevalence of depressive and anxiety disorders remains higher in women than in men, while the number of men with substance use disorders substantially outstrips that of women. On the other hand, in schizophrenia and bipolar disorder, no consistent gender differences in prevalence have been noted <sup>[2][4]</sup>. While the occurrence rate of bipolar disorder is similar in the two sexes, women are more likely to seek help from mental health services than men are <sup>[5]</sup>. Ages of onset often vary. In schizophrenia, psychotic symptoms, on average, start a few years later in women than in men <sup>[6]</sup>.

Prevalence and onset age aside, in the context of many psychotic illnesses, optimal care for women differs from that for men <sup>[7]</sup>. Some of the critical issues regarding sex-specific health needs involve social status in one's society, ease of access to quality health care, exposure to reproductive casualty and the stresses of parenting and care taking. There are also inherent differences between males and females with respect to pharmacological response to treatment or to endocrine, metabolic, immune, and cardiovascular vulnerabilities <sup>[7][8]</sup>.

Although comparably rich research has been focused on various aspects of health in women with other illnesses, little is known about the specific health needs of women with delusional disorder (DD). Because DD is a schizophrenia-related disorder, many gender-specific health needs may prove similar to those that apply to schizophrenia but as mentioned above, sex-specific needs change with age and the two disorders, DD and schizophrenia, characteristically affect women of different ages <sup>[8], [9]</sup>.

## 2. Health Outcomes in Women with Delusional Disorder

In the related illness of schizophrenia, reduced estrogen levels at the time of menopause means the loss of the neuroprotection conferred by estrogens <sup>[10]</sup>. The postmenopausal stage of schizophrenia requires special therapeutic attention as these women show a worsening of psychotic symptoms, require higher antipsychotic doses <sup>[11]</sup> and present with greater severity of depressive symptoms at this time<sup>[12]</sup>. DD starts at this age <sup>[9]</sup>, when psychotic symptoms, antipsychotic adverse effects, and comorbid conditions all increase. Table 1 summarizes some of the metabolic and other physical disturbances that should be taken into account when focusing on health outcomes in women with DD.

**Table 1.** Recent physical health studies in women with DD.

Metabolic Disturbances and Cardiovascular Disease	
Observation	Potential explanation

Increased adult adiposity, insulin sensitivity and blood lipid levels	Metabolic syndrome may be attributable to reduce estrogen levels at menopause and to the use of antipsychotics
Increased cardiovascular risk	Occurs at advanced age. Loss of estrogens at menopause, lifestyles (smoking and high BMI) and antipsychotics use also contribute
<b>Neurologic disorders</b>	
<b>Observation</b>	<b>Potential explanation</b>
Increased risk of cognitive disorders (or dementia)	Patients with DD show impaired verbal memory and other cognitive symptoms attributable to an increase in cerebrovascular events (because of age and the use of antipsychotics)
Movement disorders (extrapyramidal symptoms and tardive dyskinesia)	Loss of estrogens at menopause increases its risk of tardive dyskinesia. Antipsychotic dose may be too high. The incidence of extrapyramidal disorders: increases with age
<b>Autoimmunity</b>	
Autoimmune diseases	Women are more susceptible to autoimmune disorders than men. At menopause, the risk is increased
<b>Risk of cancer</b>	
Gynecological cancers	Women with DD may show low compliance with gynecological appointments and are less likely than peers to receive cancer screening
Other cancers	Little is known. Lifestyle factors may contribute to an increased mortality.

## 2.1. Metabolic Disturbances and Cardiovascular Disease in Women with Delusional Disorder

Nevertheless, antipsychotics are the treatment of choice in DD as they are in schizophrenia [20], so that antipsychotic-related adverse events can be expected to increase at menopause.

Although there are several contributory factors to adiposity, postmenopausal women show increased abdominal fat, increased plasma levels of triglycerides and total cholesterol compared to premenopausal women <sup>[13][14]</sup>, all risk factors for cardiovascular disease. The use of antipsychotics at this period of life increases the risk of both metabolic syndrome and cardiovascular disease <sup>[15]</sup>. An important adverse and potentially very serious effect of antipsychotic medication is the prolongation of the QTc interval on the ECG <sup>[16]</sup>. Women are more vulnerable to this effect than men <sup>[17]</sup>.

Although cardiovascular risk increases with advanced age in both sexes, the remodeling of the heart and blood vessels that takes place in middle age differs between sexes <sup>[18]</sup>. In contrast to women, men are more likely to present with heart failure <sup>[19]</sup>. Older men are more likely to present with heart failure with reduced ejection fraction because the number of ventricular myocytes suffer a reduction with age in men, but not in women <sup>[20]</sup>. Cardiac ageing in women is more characterized by an increase in diastolic dysfunction.

Recent evidence suggests that 10% of women experience premature or early-onset menopause, at around the age of 45, which heightens their risk for cardiovascular disease and mortality <sup>[21]</sup>. Smoking and high body mass index, common in individuals with psychotic illness, further increases the risk <sup>[22]</sup>. It would be interesting to investigate whether women with DD experience menopause at a relatively early age.

## 2.2. Neurologic Disorders in Delusional Disorder

Postmenopausal loss of estrogens leads to an increase in the prevalence of cognitive dysfunction, cerebrovascular events and extrapyramidal effects. Neurologic manifestations of aging also include an increase in the prevalence of Parkinson's and Alzheimer diseases. Female sex and post-menopausal status are risk factors for late-onset Alzheimer's disease (AD) [23] while women with early menopause are at special risk [24]. Recent studies have shown that patients with DD present impaired verbal memory and other cognitive symptoms which suggests the need for cognitive interventions [25]. Patients with very-late onset DD have an approximately eight-fold increased risk of dementia [26]. These are results from a nationwide register of patients in Denmark, both in- and out- patients who were compared to the general population and to patients with osteoarthritis [26]. Very late first-contact delusional disorder patients showed an increase rate of dementia compared to very late first-contact osteoarthritis patients.

Parkinson's disease (PD), by contrast to Alzheimer's, is more common in men [27]. Both men and women with DD suffer from extrapyramidal symptoms and tardive dyskinesia, attributable to the use of antipsychotics [28][29]. A recent systematic review of studies of tardive dyskinesia shows that prevention is more effective than treatment [29]. The authors recommend limiting the prescription of antipsychotics by using the minimum effective dose and minimizing the duration of therapy. If discontinuation of antipsychotics is not possible, switching from a first-generation to a second-generation antipsychotic lowers D2 affinity and reduces the risk of tardive dyskinesia symptoms. With respect to treatment, deutetrabenazine and valbenazine have the strongest evidence of efficacy.

Recent work has provided evidence of brain abnormalities in the frontal and cingulate cortex and insula of patients with DD [30]. A review on this topic reported that structural and functional brain imaging in patients with DD reveals that some patients present signs of lacunar infarcts in white matter, frontal and temporoparietal lobes or lacunar infarcts in basal ganglia [31]. This may be important because treatment non-response has been related to the presence of such brain lesions. No gender differences have been reported.

## 2.3. Autoimmune Diseases in Delusional Disorder

Women are, in general, significantly more susceptible to the development of autoimmune diseases than men [32] and many of these diseases, especially systematic lupus erythematosus, tend to be associated with schizophrenia [33]. Patients with schizophrenia have a 50% increase in the lifetime prevalence of one or more autoimmune disorder [33] and this may also be true for patients with DD [34][35]. In fact, earlier work has postulated an elevated incidence of human leukocyte antigen (HLA) class I alleles in patients with schizophrenia and DD, suggesting a shared biological vulnerability.

## 2.4. Risk of Cancer in Delusional Disorder

The prevalence and risks for cancer has not been adequately investigated in women with DD. A case report and review of the literature on DD and oncology [36] highlighted the fact that DD is an under-researched condition with little information currently available about the risk of comorbid malignancies. There are many barriers to regular cancer screening (colon, cervix, breast) in individuals with psychotic illness [37]. Promotion of screening is vital in this population because, while incidence rates of cancer are the same as in the general population, mortality rates are much higher [38][39]. This is partly due to late diagnosis [40] and draws attention to the need for closer collaboration between psychiatry and other medical disciplines [41].

---

## References

1. Klose, M.; Jacobi, F. Can gender differences in the prevalence of mental disorders be explained by sociodemographic factors? *Arch. Women's Ment. Health* 2004, 7, 133–148.
2. Kiely, K.M.; Brady, B.; Byles, J. Gender, mental health and ageing. *Maturitas* 2019, 129, 76–84, doi:10.1016/j.maturitas.2019.09.004.
3. Riecher-Rössler, A. Sex and gender differences in mental disorders. *Lancet Psychiatry* 2017, 4, 8–9, doi:10.1016/s2215-0366(16)30348-0.
4. Lewine, R.R.J.; Hart, M. Schizophrenia spectrum and other psychotic disorders. *Interv. Neuroradiol.* 2020, 175, 315–333, doi:10.1016/b978-0-444-64123-6.00022-9.
5. Cunningham, R.; Crowe, M.; Stanley, J.; Haitana, T.; Pitama, S.; Porter, R.; Baxter, J.; Huria, T.; Mulder, R.; Clark, M.T.R.; et al. Gender and mental health service use in bipolar disorder: National cohort study. *BJPsych Open* 2020, 6, e138, doi:10.1192/bjo.2020.117.

6. Häfner, H. From Onset and Prodromal Stage to a Life-Long Course of Schizophrenia and Its Symptom Dimensions: How Sex, Age, and Other Risk Factors Influence Incidence and Course of Illness. *Psychiatry J.* 2019, 2019, 1–15, doi:10.1155/2019/9804836.
7. Seeman, M.V. Women who suffer from schizophrenia: Critical issues. *World J. Psychiatry* 2018, 8, 125–136, doi:10.5498/wjp.v8.i5.125.
8. Seeman, M.V. Schizophrenia Psychosis in Women. *Women* 2020, 1, 1–15, doi:10.3390/women1010001.
9. González-Rodríguez, A.; Seeman, M.V. Addressing Delusions in Women and Men with Delusional Disorder: Key Points for Clinical Management. *Int. J. Environ. Res. Public Health* 2020, 17, 4583, doi:10.3390/ijerph17124583.
10. Gurvich, C.; Gavrilidis, E.; Worsley, R.; Hudaib, A.; Thomas, N.; Kulkarni, J.; Hadaib, A. Menstrual cycle irregularity and menopause status influence cognition in women with schizophrenia. *Psychoneuroendocrinology* 2018, 96, 173–178, doi:10.1016/j.psyneuen.2018.06.022.
11. González-Rodríguez, A.; Guàrdia, A.; Palao, D.J.; Labad, J.; Seeman, M.V. Moderators and mediators of antipsychotic response in delusional disorder: Further steps are needed. *World J. Psychiatry* 2020, 10, 34–45, doi:10.5498/wjp.v10.i4.34.
12. González-Rodríguez, A.; Molina-Andreu, O.; Navarro, V.; Gastó, C.; Penadés, R.; Catalán, R. Delusional disorder: No gender differences in age at onset, suicidal ideation, or suicidal behavior. *Rev. Bras. Psiquiatr.* 2014, 36, 119–124, doi:10.1590/1516-4446-2013-1205.
13. Feng, Y.; Hong, X.; Wilker, E.; Li, Z.; Zhang, W.; Jin, D.; Liu, X.; Zang, T.; Xu, X.; Xu, X. Effects of age at menarche, reproductive years, and menopause on metabolic risk factors for cardiovascular diseases. *Atherosclerosis* 2008, 196, 590–597, doi:10.1016/j.atherosclerosis.2007.06.016.
14. Auro, K.; Joensuu, A.; Fischer, K.; Kettunen, J.; Salo, P.; Mattsson, H.; Niironen, M.; Kaprio, J.; Eriksson, J.G.; Lehtimäki, T.; et al. A metabolic view on menopause and ageing. *Nat. Commun.* 2014, 5, 4708, doi:10.1038/ncomms5708.
15. Merz, A.; Cheng, S. Sex differences in cardiovascular ageing. *Heart* 2016, 102, 825–831, doi:10.1136/heartjnl-2015-308769.
16. Chohan, P.S.; Mittal, R.; Javed, A. Antipsychotic Medication and QT Prolongation. *Pak. J. Med. Sci.* 2015, 31, 1269–1271.
17. Somberg, J.; Preston, R.A.; Ranade, V.; Cvetanovic, I.; Molnar, J. Gender Differences in Cardiac Repolarization Following Intravenous Sotalol Administration. *J. Cardiovasc. Pharmacol. Ther.* 2011, 17, 86–92, doi:10.1177/1074248411406505.
18. Kane, A.E.; Howlett, S. Differences in Cardiovascular Aging in Men and Women. In *Sex-Specific Analysis of Cardiovascular Function*; Springer: Cham, Switzerland, 2018; pp. 389–411, doi:10.1007/978-3-319-77932-4\_25.
19. Keller, K.M.; Howlett, S. Sex Differences in the Biology and Pathology of the Aging Heart. *Can. J. Cardiol.* 2016, 32, 1065–1073, doi:10.1016/j.cjca.2016.03.017.
20. Shufelt, C.L.; Pacheco, C.; Tweet, M.S.; Miller, V.M. Sex-Specific Physiology and Cardiovascular Disease. In *Sex-Specific Analysis of Cardiovascular Function*; Springer: Cham, Switzerland, 2018; pp. 433–454, doi:10.1007/978-3-319-77932-4\_27.
21. Muka, T.; Oliver-Williams, C.; Kunutsor, S.; Laven, J.S.E.; Fauser, B.C.J.M.; Chowdhury, R.; Kavousi, M.; Franco, O.H. Association of Age at Onset of Menopause and Time Since Onset of Menopause With Cardiovascular Outcomes, Intermediate Vascular Traits, and All-Cause Mortality. *JAMA Cardiol.* 2016, 1, 767–776, doi:10.1001/jamacardio.2016.2415.
22. Colpani, V.; Baena, C.P.; Jaspers, L.; Van Dijk, G.M.; Farajzadegan, Z.; Dhana, K.; Tielemans, M.J.; Voortman, T.; Freak-Poli, R.; Veloso, G.G.V.; et al. Lifestyle factors, cardiovascular disease and all-cause mortality in middle-aged and elderly women: A systematic review and meta-analysis. *Eur. J. Epidemiol.* 2018, 33, 831–845, doi:10.1007/s10654-018-0374-z.
23. Scheyer, O.; Rahman, A.; Hristov, H.; Berkowitz, C.; Isaacson, R.S.; Diaz Brinton, R.; Mosconi, L. Female sex and Alzheimer's risk: The menopause connection. *J. Prev. Alzheimer's Dis.* 2018, 5, 225–230.
24. Marongiu, R. Accelerated Ovarian Failure as a Unique Model to Study Peri-Menopause Influence on Alzheimer's Disease. *Front. Aging Neurosci.* 2019, 11, 242, doi:10.3389/fnagi.2019.00242.
25. Díaz-Caneja, C.M.; Cervilla, J.; Haro, J.M.; Arango, C.; De Portugal, E. Cognition and functionality in delusional disorder. *Psychiatry* 2019, 55, 52–60, doi:10.1016/j.eurpsy.2018.09.010.

26. Kørner, A.; Lopez, A.G.; Lauritzen, L.; Andersen, P.K.; Kessing, L.V. Delusional disorder in old age and the risk of developing dementia—a nationwide register-based study. *Aging Ment. Health* 2008, 12, 625–629, doi:10.1080/13607860802343118.
27. Reekes, T.H.; Higginson, C.I.; Ledbetter, C.R.; Sathivadivel, N.; Zweig, R.M.; Disbrow, E.A. Sex specific cognitive differences in Parkinson disease. *npj Park. Dis.* 2020, 6, 1–6, doi:10.1038/s41531-020-0109-1.
28. Caroff, S.N.; Campbell, E.C. Drug-induced extrapyramidal syndromes: Implications for contemporary practice. *Psychiatr. Clin. N. Am.* 2016, 39, 391–411.
29. Ricciardi, L.; Pringsheim, T.; Barnes, T.R.; Martino, D.; Gardner, D.; Remington, G.; Addington, D.; Morgante, F.; Poole, N.; Carson, A.; et al. Treatment Recommendations for Tardive Dyskinesia. *Can. J. Psychiatry* 2019, 64, 388–399, doi:10.1177/0706743719828968.
30. Vicens, V.; Radua, J.; Salvador, R.; Anguera-Camós, M.; Canales-Rodríguez, E.J.; Sarró, S.; Maristany, T.; McKenna, P.J.; Pomarol-Clotet, E. Structural and functional brain changes in delusional disorder. *Br. J. Psychiatry* 2016, 208, 153–159, doi:10.1192/bjp.bp.114.159087.
31. González-Rodríguez, A.; Molina-Andreu, O.; Penadés, R.; Catalán, R.; Bernardo, M. Structural and Functional Neuroimaging Findings in Delusional Disorder: Diagnostic and Therapeutic Implications. *Open Psychiatry J.* 2015, 9, 17–25, doi:10.2174/1874354401509010017.
32. Ngo, S.; Steyn, F.; McCombe, P.A. Gender differences in autoimmune disease. *Front. Neuroendocr.* 2014, 35, 347–369, doi:10.1016/j.yfrne.2014.04.004.
33. Solmi, M.; Murru, A.; Pacchiarotti, I.; Undurraga, J.; Veronese, N.; Fornaro, M.; Stubbs, B.; Monaco, F.; Vieta, E.; Seeman, M.V.; et al. Safety, tolerability, and risks associated with first- and second-generation antipsychotics: A state-of-the-art clinical review. *Ther. Clin. Risk Manag.* 2017, 13, 757–777, doi:10.2147/tcrm.s117321.
34. Jeppesen, R.; Benros, M.E. Autoimmune Diseases and Psychotic Disorders. *Front. Psychiatry* 2019, 10, 131.
35. Debnath, M.; Das, S.K.; Bera, N.K.; Nayak, C.R.; Chaudhuri, T.K. Genetic Associations between Delusional Disorder and Paranoid Schizophrenia: A Novel Etiologic Approach. *Can. J. Psychiatry* 2006, 51, 342–349, doi:10.1177/070674370605100602.
36. Pearman, T.P. Delusional Disorder and Oncology: Review of the Literature and Case Report. *Int. J. Psychiatry Med.* 2013, 45, 237–243, doi:10.2190/pm.45.3.c.
37. González-Rodríguez, A.; Labad, J.; Seeman, M.V. Schizophrenia and cancer. *Curr. Opin. Support. Palliat. Care* 2020, 14, 232–238, doi:10.1097/spc.0000000000000512.
38. Hodgson, R.; Wildgust, H.J.; Bushe, C.J. Review: Cancer and schizophrenia: Is there a paradox? *J. Psychopharmacol.* 2010, 24, 51–60, doi:10.1177/1359786810385489.
39. Kredentser, M.S.; Martens, P.J.; Chochinov, H.M.; Prior, H.J. Cause and rate of death in people with schizophrenia across the lifespan: A population-based study in Manitoba, Canada. *J. Clin. Psychiatry* 2014, 75, 154–161.
40. Fond, G.; Salas, S.; Pauly, V.; Baumstarck, K.; Bernard, C.; Orleans, V.; Llorca, P.-M.; Lancon, C.; Auquier, P.; Boyer, L. End-of-life care among patients with schizophrenia and cancer: A population-based cohort study from the French national hospital database. *Lancet Public Health* 2019, 4, e583–e591, doi:10.1016/s2468-2667(19)30187-2.
41. Zhuo, C.; Tao, R.; Jiang, R.; Lin, X.; Shao, M. Cancer mortality in patients with schizophrenia: Systematic review and meta-analysis. *Br. J. Psychiatry* 2017, 211, 7–13, doi:10.1192/bjp.bp.116.195776.