Evidence for working memory (WM) deficits in obsessive-compulsive disorder (OCD) is increasing. However, findings regarding the underlying neural substrates are heterogeneous. Moreover, the influence of cognitive demand on the severity of these deficits and associated activation alterations is a matter of debate. To further address this question the present fMRI study examined a sample of 21 predominantly medication-free inpatients with OCD and 21 matched healthy volunteers using a parametric verbal n-back task. In agreement with earlier studies patients exhibited focused activation alterations that could be found to be critically dependent on WM demands: There were no differences in activation between patients and healthy volunteers under low cognitive demands. However, patients exhibited a significantly decreased activation in the dorsal anterior cingulate cortex (dACC) in association with increasing task demands. While dACC activation in controls showed a linear increase with increasing task demands, this linearity was not detectable in patients with OCD. Present findings provide further support for the relevance of the anterior cingulate in OCD and illustrate that both task demands and task processes are of major influence in this context.