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We consider perturbations of size  $h^{1+c}$  (for any  $c > 0$ ) of the semi-classical hydrogen quantum hamiltonian in  $n$  dimensions, where  $h$  is the semi-classical parameter. If  $h$  is restricted to take certain values tending to zero, the spectrum of the perturbed operator forms clusters near  $E = -1/2$ . We find a Szegő limit theorem for such clusters, as  $h$  tends to zero. (Received January 22, 2007)