We study the one-dimensional XXZ quantum spin chain with an arbitrary number of down-spins, which, in addition to the deterministic attractive interaction, are subject to a random potential. The main result concerns a version of high-disorder Fock-space localization expressed in the configuration space of the spin chain. The proof relies on an energetically motivated Combes-Thomas estimate and an effective one-particle analysis. As an application, we show the exponential decay of the twopoint function in the infinite system uniformly in the particle number as well as an area law.