Maehara has shown that a family F of at least d+3 spheres in Rd has a nonempty intersection if every d+1 spheres from F have a nonempty intersection. We extend this Helly-type result in two directions.

On the one hand, we show an analogous theorem holds for families of pseudospheres, i.e., systems of sets such that the intersection of any nonempty subsystem is homeomorphic to a sphere of some dimension or is empty.

On the other hand, a sphere in Rd can be expressed as the zero set of a real polynomial. For a set of polynomials P, the Helly number of the family of zero sets of polynomials from P is bounded by the dimension of the vector space generated by P. For spheres, however, Maehara's result gives a stronger bound. We show some general sufficient assumptions that allow better bounds on the Helly numbers in this context.