We investigate a one-dimensional diffusive motion of a system of interacting Brownian particles driven by an external time-dependent force. We assume the hard-core interaction between the particles. We construct the exact general solution of the N -particle problem. Specifically, we assume the spatially restricted two-particles dynamics, and the harmonically oscillating driving force. The inter-particle interaction induces effective entropic forces and hence also new effects comparing to the corresponding model without the inter-particle interaction. Especially, we have found an increase (decrease) of the work done on the right (left) particle. Similar effects are exhibited by the one-particle mean position, the one-particle entropy production, and heat released to the bath. These characteristics have been discussed depending on the model parameters. Resonance-like maxima have been detected if we plot the work accepted by the individual particles as the function of the driving frequency. Similarly, the entropy production exhibits a maximum as the function of the bath temperature.