A man suspected of fatally shooting a woman early Sunday in Keokuk was found dead hours later with a self-inflicted gunshot wound, authorities said.

Just after midnight Sunday, Keokuk police responded to an alley near 10th Street and North Fifth Street, where a 911 caller had reported hearing gunshots. When officers arrived, they found Carissa Rivers, 29, unresponsive in the alley, according to an Iowa Division of Criminal Investigation news release.

Rivers was transported to a local hospital, where she was pronounced dead.

Police soon identified Russell J. Tallman, 39, as the primary suspect in Rivers' death. At about 2:45 p.m. Sunday, police obtained a search warrant for Tallman's home, 1828 Franklin St., Keokuk.

When officers entered the home, they found Tallman dead in the basement with an apparent self-inflicted gunshot wound to his head.

The DCI news release does not specify the relationship between Tallman and Rivers, but it states that officials believe this is an isolated event and the public is not in danger.

Catherine Rivers, mother of Carissa Rivers, told WGEM-TV that her daughter's ex-boyfriend shot her to death, adding he had previously threatened to kill her daughter. The TV station does not name the exboyfriend.

Autopsies for both Tallman and Rivers are scheduled for this week at the University of Iowa Hospitals and Clinics, according to the DCI news release.

The case remains under investigation by DCI and the Keokuk Police Department.