The theory of quantum quenches for systems near a quantum critical point has been introduced in [1] and developed in [2-5].

[1] Gesualdo Delfino,
Quantum quenches with integrable pre-quench dynamics,
J. Phys. A 47 (2014) 402001
doi:10.1088/1751-8113/47/40/402001

[2] Gesualdo Delfino and Jacopo Viti,
On the theory of quantum quenches in near-critical systems,
J. Phys. A: Math. Theor. 50 (2017) 084004
doi: 10.1088/1751-8121/aa5660

[3] Gesualdo Delfino,
Correlation spreading and properties of the quantum state in quench dynamics,
Phys. Rev. E 97, 062138 (2018)
doi: 10.1103/PhysRevE.97.062138

[4] Gesualdo Delfino,
Persistent oscillations after quantum quenches: The inhomogeneous case,
Nucl. Phys. B 954 (2020) 115002
doi: 10.1016/j.nuclphysb.2020.115002

[5] Gesualdo Delfino and Marianna Sorba,
Persistent oscillations after quantum quenches in d dimensions,
Nucl. Phys. B 974 (2022) 115643
doi: 10.1016/j.nuclphysb.2021.115643