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## POSTER ABSTRACT

# The Application of Complexity Theory in Health and Social Care Research: A Scoping Review

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**Background:** Complexity theory has been utilised by many researchers as an appropriate lens through which to examine health and care. Notwithstanding its potential value, many studies apply complexity theory in a tokenistic manner without engaging with its underlying concepts and underpinnings.

**Objectives:** This scoping review aimed to map and synthesise available research which has utilised complexity theory in health and social care settings. The research question was: “How has complexity theory been applied in health and social care research?”.

**Eligibility criteria:** Qualitative and quantitative empirical research that utilised complexity theory informed approaches, published in English between 2012 and 2021.

**Sources of evidence:** Cochrane Database of Systematic Reviews, MEDLINE, CINAHL, EMBASE, Web of Science, PSYCHINFO, The NHS Economic Evaluation Database (NHS EED), The Health Economic Evaluations Database (HEED). Additionally, a hand search of the reference lists of relevant articles was conducted.

**Charting methods:** Data extraction was performed employing Covidence and a data extraction tool was created to produce a descriptive summary of the results, addressing the research question. The review employed the Arksey and O'Malley (2005) revised six-step framework and adhered to the Preferred Reporting Items for Systematic Reviews and Meta-analysis Extension for Scoping Reviews (PRISMA-ScR).

**Results:** A total of 2021 records were identified. 676 duplicate entries were removed before screening and a further 1108 did not meet the inclusion criteria. In total, 61 articles were subjected to data abstraction.

Complexity theory was poorly defined and described and was frequently applied as a theoretical and analytical framework. Studies were predominantly hospital or health system focused and did not encompass the full continuum of care. Several studies used complexity theory within qualitative research to analyse and code data. The review also identified several case studies in which authors sought to understand a setting or service using a complexity-informed lens. Most publications originated in the United States and Canada. Complexity was applied in contexts where multi-disciplinary teams were involved, which has implications for managing the complexity of context. To perform research into complex systems in which power law

distributions operate, there is a requirement to interpret the processes of dynamicity and that requires qualitative and longitudinal studies. There is also value in an abductive logic of inquiry, which allows for the interweaving and entanglement of previous evidence into a greater understanding of the whole complex adaptive system. It is recognised that engaging with complex systems requires theoretical and methodological pluralism so researchers should embrace a rich tapestry of approaches to develop a rich understanding of the complex health and care systems in which we work. As there is currently no definitive procedure for reporting such studies, the authors propose guidance to be interpreted and adapted to support the reporting of theoretically and methodologically divergent research.

**Conclusion:** Heterogeneity was inherent in the empirical studies regarding the application of complexity theory. The authors provide guidance on conducting primary research which uses complexity theory as a conceptual, theoretical or analytical framework which seeks to promote rigor and transparency in the area.