**Manuscript 1 Literature Search Summary**

**Refined Research Questions**

***Overarching Question***

* How do nurses conceptualize complexity as it relates to frailty/health status in older adults?

***Questions by Each Principle of Concept Analysis***

**Epistemological principle.***Is the concept well-defined and well-differentiated from other concepts?*

* + Are complexity and frailty separate phenomena or is complexity just a characteristic of frailty?
  + Is complexity its own phenomenon independent of other concepts?
  + Is complex/ity used scientifically or colloquially? I.e. is it given explicit definition or used with implicit meaning?

**Pragmatic principle.** *Is the concept applicable and useful in describing and explaining phenomena in the discipline? Is it operationalized?*

* + What operationalizations of complexity are being used in the nursing literature?
  + Are there any formal models or frameworks being used that include complexity as an operational component?
  + How do nurses assess for complexity?
  + How do nurses respond to complexity?

**Linguistic principle.** *Is the concept used consistently and appropriately within context?*

* + Is complexity used consistently, invoking the same meaning, across the literature within the context of frailty/health status in older adults?
  + What are meanings, both explicit and implicit, of complexity within the context of frailty/health status in older adults?
  + Is the term complexity applied to the same sub-contexts within the context of frailty/health status in older adults?
  + Are situations which fit a given meaning of complexity in older adults’ health/frailty always being labeled as complex or are there other terms being applied?

**Logical principle.** *Does the concept hold its boundaries and remain clear and tight when integrated within a theoretical system? Does the meaning of the concept get lost when attempting to derive systematic relationships with other concepts in a theoretical framework?*

* + Is the relationship between complexity and frailty systematic?
  + Does complexity hold its conceptual “boundaries” when integrated into models of frailty or older adult health? Or does the concept get blurred?
  + Is complexity necessary for there to be frailty? Is frailty necessary for there to be complexity? Or both?

**Search Strategy**

***Databases***

CINAHL, PubMed, Health Source: Nursing/Academic Edition (EBSCO), PsycInfo, and Web of Science.

***Search Strategy***

First, CINAHL, PubMed, and The keyword “complex\*” and the keyword “frail\*” were searched with index terms (or keywords in Web of Science), combined used the OR operator, for each of the following topics associated with older adult health and frailty: frail elderly, healthy aging, old age, geriatrics, gerontology, older adult nursing, older adults, aging, geriatric patients, health of older people, and physiological aging (see Table for the specific index terms used in each database).

***Inclusion Criteria***

In an attempt to focus searches to articles where complexity is a key topic searches were limited to articles with the keyword “complex\*” in the title or abstract. Additionally, because this review is focused on the conceptualization of complexity within the nursing discipline articles were included if at least one author was affiliated with nursing institution (the author affiliation field contains “nurs\*”) or it was published in a nursing journal. A journal was determined to be a nursing journal if it is indexed under nursing in the NCBI journal catalog, the 2012 Nursing and Allied health Resources Section (NAHRS) of the Medical Library Association, the Nursing Journal Subset of CINAHL complete, or the Directory of Nursing Journals provided by the International Academy of Nursing Editors and *Nurse Author & Editor*. Articles were included if they were written between the year 2001 and 2021.

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| --- | --- | --- |
| Equivalent Index Terms |  | |
| **TOPIC** | **CINAHL** | **PUBMED** | | **EBSCO** | **PSYCINFO** | **WEB OF SCIENCE (keyword used)** |
| frail elderly | frail elderly (included with Aged+) | frail elderly (included under Aged+) | | frail elderly | frail | Frail elderly, frail |
| healthy aging | healthy aging (included with Aging+) | healthy aging | | active aging, successful aging | Healthy Aging (included under Aging explode) | healthy aging, active aging, successful aging |
| old age | Aged+ | Aged+ | | old age | Older Adulthood | Older adulthood |
| geriatrics | geriatrics | geriatrics | | geriatrics | geriatrics | Geriatrics |
| gerontology | use geriatrics | use geriatrics | | gerontology | gerontology | Gerontology |
| older adult nursing | gerontologic nursing+ | geriatric nursing | | geriatric nursing | none | Geriatric nursing, gerontologic nursing |
| older adults | use Aged | use Aged | | older people | Older Adulthood | Aged, elderly, older people |
| aging | Aging | aging | | aging | aging | Aging |
| geriatric patients | Aged+, gerontologic care | none | | older patients | geriatric patients | Geriatric patients, older patients |
| health of older people | health /in old age | use healthy aging | | health of older people | use healthy aging | Healthy aging |
| physiological aging | use Aging | use aging | | physiological aspects of aging | physiological aging (included under Aging explode) | Physiological aging |
|  |  |  | |  |  |  |

***Exclusion Criteria***

Articles were excluded if they were not written in English, if they were not published in peer-reviewed journals, if the subjects were not adults older than 65 years, and if the subjects were not human. Additionally, articles were excluded after abstract review if complex was used to describe the study design or intervention design under study specifically.

**Search Results**

**Identification of studies via databases and registers**

Records removed *before screening*:

Records published before 2001 (n = 48)

Duplicate records removed (n = 368)

Records not in nursing discipline\* (n = 218)

Records identified from\*:

Databases (n = 1050)

**Identification**

Records screened

(n = 416)

Records excluded\*\*

(n = 202)

Reports sought for retrieval

(n = 214)

Reports not retrieved

(n = 7)

**Screening**

Reports assessed for eligibility

(n = )

Reports excluded:

Reason 1 (n = )

Reason 2 (n = )

Reason 3 (n = )

etc.

Studies included in review

(n = )

Reports of included studies

(n = )

**Included**

\*An article is in the nursing discipline if it has at least one author affiliated with a nursing institution or is published in a nursing journal.