METHOD
Principle-Based Concept Analysis¹

BACKGROUND
Cognitive change following chemotherapy has been reported in some cancer survivors even years after treatment. These symptoms include subtle changes in memory, concentration, psychomotor speed, and executive functioning. These symptoms make it difficult to carry out normal daily activities in one’s personal and professional life, the impact of which may lead to work absences and declines in productivity and job performance.

SAMPLE
The data set included 82 English language articles retrieved through OVID, PubMed, CINAHL, and Web of Knowledge searches. No time limits were imposed. The final data set totaled 82 items including: 2 meta-analysis, 25 review articles, 46 research articles, 3 short commentaries, 1 editorial, 2 newspaper scientific report articles and 2 book chapters.

CONCLUSIONS
Analysis of the literature from cellular biology to quality of life identifies gaps and inconsistencies in the state of the science. These insights may direct research questions and methodologies that are used to study the impact of chemotherapy-related cognitive change on societal roles and inform health care policy concerning follow-up screening for cancer survivors.

Reference
Scientists worldwide are interested in understanding cognitive change following chemotherapy. Gaps in knowledge raise questions about impact on quality of life.

**PURPOSE**

To present a concept analysis of cognitive change following chemotherapy which spans the literature from pharmacokinetics, cellular biology, genetics, and neuroscience to cancer survivorship and quality of life.

**BACKGROUND**

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**Pragmatic**

The concept is useful for understanding phenomena of importance to nursing.

**Topics researched are multi-faceted**

- Cognitive domains affected
- Comparisons to other disorders
- Physiologic causes
- Subjective vs. objective measures
- Predicting susceptibility
- Genetic predisposition
- Interventions
- Impact on quality of life

**Linguistic**

The concept does not have consistent meaning within the context where it is applied.

**Linguistic problems abound!**

- Cognitive impairment
- Cognitive dysfunction
- Cognitive change
- Neurobehavioral impact
- Neurocognitive disturbance
- Neuropsychological effects
- Chemo brain, Chemo fog

**Logical**

The concept does not hold its boundaries through theoretical integration with other related concepts?

**Unknown and complex relationships**

- Multidimensional concept spanning multiple cognitive domains
- Domains of cognition closely linked and interdependent
- Relationships to fatigue, depression, anxiety, and sick syndrome are unclear

**RESULTS**

Theoretical Definition

Cognitive change following chemotherapy is a multidimensional concept that involves the individual’s perception of change in cognitive abilities. These symptoms are often subtle but clearly recognizable by the individual experiencing them. Factors such as fatigue, depression and anxiety may be mediators; but the exact relationship of these factors to cognitive change is not clear. Some cognitive changes may be frightening and lead to emotional distress. The resulting physical and psychological consequences can significantly impact quality of life.

**CONCLUSIONS**

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