

# Analysis Concept; Continuing Care of Post-Intensive Care Syndrome

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## Abstract

**Background:** ICU aftercare is characterized by various physical, emotional, cognitive, and psychosocial symptoms that appear while receiving care in the Intensive Care Unit and continue after discharge and will negatively affect the patient's quality of life. **Objective:** Analyzing continuing care to refine the definition and analyze what is needed in continuing care after treatment in the ICU. **Method:** The article searches used data based on PubMed, Clinical Key, and Science Direct. Walker and Avant's approach was used to guide this concept analysis, which consisted of eight steps, namely concept selection, Continuing care), determining the purpose of the analysis; analyzing Continuing care to refine the definition, and analyze what are the needs in continuing care after treatment in the ICU), identifying all uses of the concept, defining its attributes, identifying antecedents and consequences, identifying model cases, identifying reverse cases and identifying empirical references from defining empirical attributes. **Result:** Some of the attributes of the concept of continuous care include monitoring and management of post-critical illness symptoms, planning transitions of care from the ICU to the ward, patient education and guidance, and solving problems in overcoming the obstacles faced by post-ICU patients. **Recommendation:** Provide standard guidelines or protocols for the continuing care of post-ICU patients. The analysis concept can provide scientific evidence and practice to manage patients with post-ICU care syndrome.

**Keywords:** continuing care; post-intensive care syndrome; concept analysis



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## INTRODUCTION

Technologically advanced treatments support medical advances such that survival rates of ICU patients have improved dramatically in recent years (1,2). This capacity to improve survival has led to the expansion of ICU services globally to provide essential and life-saving support. According to the Society of Critical Care Medicine, more than 5 million patients are admitted each year to the Intensive Care Unit (ICU) for reasons ranging from airway, respiratory, and circulatory support to comprehensive management of complex injuries, illnesses, and symptoms (3). At the same time, factors such as an aging population have resisted demand for the provision of ICU care globally, as the average age of hospital stay has increased (4).

Although ICU patients comprise a heterogeneous population, they all present with a state of clinical fragility and require regular monitoring and assessment and, of course, realignment of post-care goals in the ICU (5). Patients who make it out of the ICU treatment room are a form of positive progress, but it becomes a new challenge. Patients who survive critical illness are at risk for a group of problems known as post-intensive care syndrome (6) which affects more than half of patients leaving the ICU (7); this condition can last for months - months to years after critical illness (8). In response to this long-term disruption, interprofessional ICU recovery programs have been used internationally as a resource to screen, diagnose, refer, and manage critical illness survivors and their families (9-12).

Conditions after ICU treatment are usually characterized by various constellations of physical, emotional, cognitive, and psychosocial symptoms that begin in the Intensive Care Unit and continue after being discharged from the room (13). These conditions will later hurt their quality of life (14).

Many patients and families are not aware of this fact and are often overly optimistic about long-term health expectations, underestimating the likely time and effort required to return to their previous state of health and related life activities (15), and most of these patients never regain this status. their pre-ICU health (16). To prevent the risk of side effects, all these factors must be considered

before the patient is discharged to the general ward (17,18). In this study, the importance of ongoing care is to ensure that patients recover fully after being discharged from the ICU. Therefore, a clear concept regarding continuous care after treatment in the ICU needs to be implemented. This research will understand how continuous care can be improved so that it will help the quality of life of critical patients after treatment in the ICU.

## METHOD

### Analysis Concept

Walker and Avant explain concept analysis as one of three strategies for developing concepts. Concept synthesis and concept derivation to translate concepts across disciplines are also used. The process of studying detailed concepts, by defining and refining concepts, is the first step toward developing theory and helping guide the measurement of concepts through their attributes (19).

Walker and Avant's approach was used to guide the analysis of this concept, which consists of eight steps: 1) concept selection (Continuing Care); 2) determining the purpose of definition analysis (analyzing continuing care to improve and analyzing what is needed in continuing care after treatment in the ICU); 3) identify all uses of the concept; 4) define the attributes; 5) identify antecedents and consequences; 6) identify case models; 7) identify the opposite case; and 8) identify empirical references from the established empirical attributes (19).

### Data Source

To determine empirical references, a literature search was carried out using the keywords "sustained care" and "recovery after treatment in the ICU". The database used and the number of articles used were PubMed (1 article), Clinical Key (1 article), and Science Direct (4 articles). The criteria for the articles selected in this concept analysis were: the last 5 years (2022-2017), Full text, and Open access. Furthermore, duplicate records were deleted, and 4 additional articles found during the study bibliographic review were added.

recovery for the sickest ICU survivors.

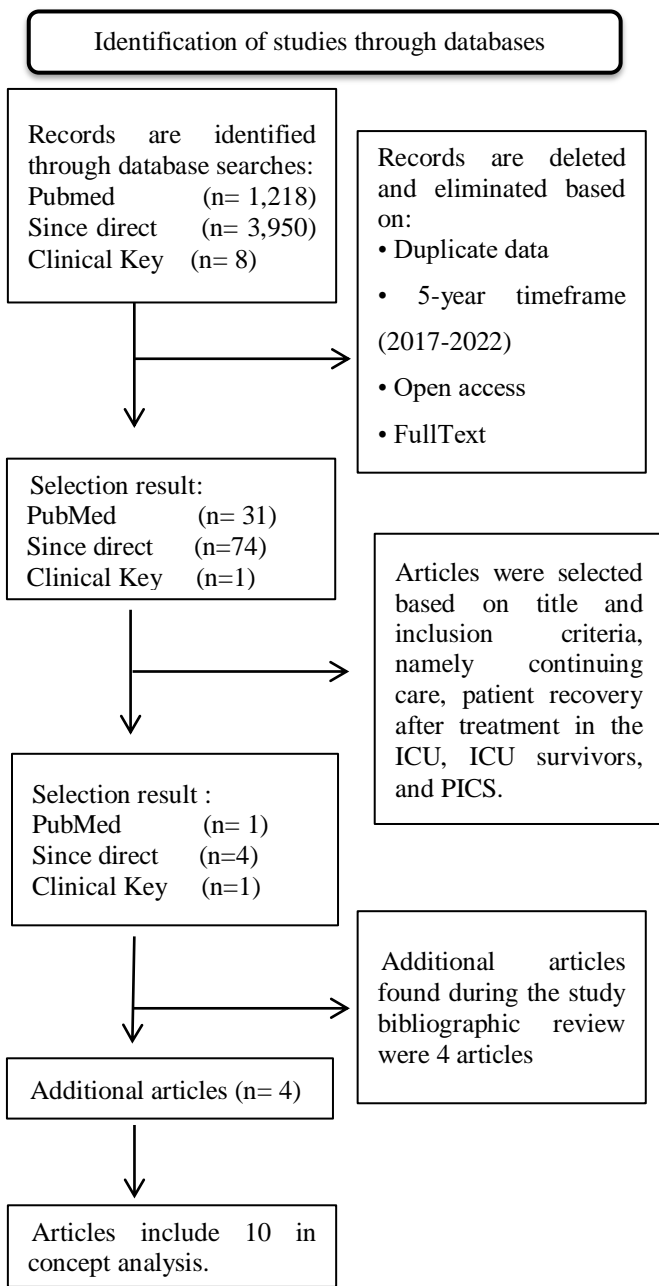


Diagram 1. Study identification via database

## RESULT

A total of 10 research studies were selected for inclusion in the final concept analysis. Of these studies, 1 was a randomized controlled trial, 2 was a prospective observational feasibility study, 5 was a scientific literature coverage study, and 2 was a qualitative study. The studies analyzed are linked to evidence-based guidelines for intensive care unit (ICU) follow-up and recovery designed to screen for and treat Post Intensive Care Syndrome (PICS), to promote

## DISCUSSION

This discussion will describe the stages of conceptual analysis sequentially based on Walker & Avant (2014) (19).

### Choose a concept

After an intensive care unit (ICU) stay, survivors of critical illness face the risk of unplanned hospital readmission and new or worsening chronic illness, along with a higher risk of death in the years following discharge (20,21). Post-ICU treatment conditions are usually characterized by various constellations of physical, emotional, cognitive, and psychosocial symptoms that begin in the Intensive Care Unit and continue after leaving the room (13). These conditions will later hurt their quality of life (14). When the long-term effects of critical illness are known, the need to design and implement effective interventions to save critically ill patients from recovery has become an urgent priority today (12).

### Determine the purpose of the analysis

This concept analysis was conducted to describe what needs are needed by patients and their families in the implementation of post-treatment patient recovery in the Intensive Care Unit. The aim is to identify all uses of the concept and to provide direction for research related to continuing care in patients who have completed ICU care.

### Identify uses of the concept

A literature search from various fields of science, including language dictionaries, was carried out to determine the characteristics of the use of the concept (19). By knowing the characteristics, the understanding of the concept will be more complex when viewed from various scientific perspectives. Continuous care is a health service concept that covers all levels and intensities of care with a comprehensive system that integrates, involves, and monitors patients from time to time. This system has integrated services and mechanisms that are client-oriented and the client's health history

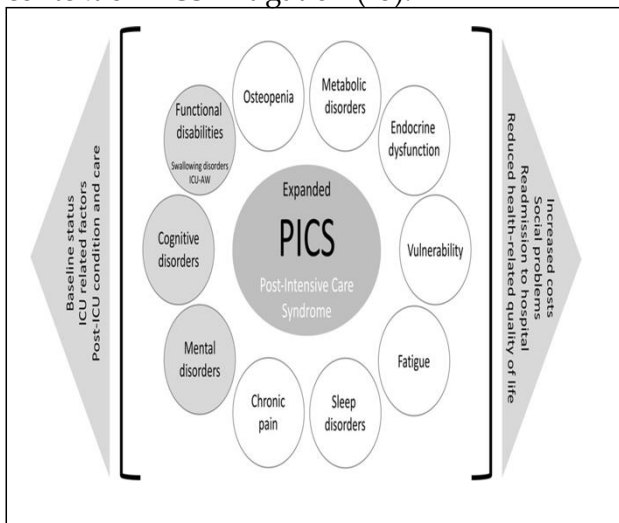
from time to time comprehensively covers physical condition, mental health, and social services covering all levels of intensity of care (22,23).

According to KBBI, Continuous care takes place continuously and continuously. Continuous care is a form of care that is carried out from upstream to downstream, from the hospital to returning home. This treatment requires collaboration between professions and fields of science to produce comprehensive and holistic care.

**Defines the attribute**

The pathophysiology that emerges from the post-critical illness symptoms that combine to form PICS is complex. The authors, in carrying out the review, managed to collect primary outcome data for PICS elements measured on a measurable scale. These elements usually contribute to ICU survivors, including: (i) physical impairments in pulmonary, neuromuscular, and physical function; (ii) cognitive impairment in executive function, memory, attention, and visuospatial and mental processing speed; and (iii) psychological outcomes on anxiety, acute stress disorder, PTSD, and depression (24).

Although not all contributing factors are modifiable, some of the clinical phenotypes of PICS are partly due to medical interventions, procedures, medications, or even a lack of care during the ICU stay. ICU-RC provides an opportunity to maximize recovery and minimize side effects from critical illness. So several strategies require special attention in the context of PICS mitigation (25).



**Fig 1.** A proposed expanded definition of the post-intensive care syndrome (PICS), including contributing factors (on the left side of the figure) and consequences (on the right side of the figure), current (gray circles), and potentially new (white circles) components. ICU-AW; intensive care unit acquired weakness

After being able to identify problems that arise after treatment in the ICU, it is hoped that the analysis of this research study will be able to describe and analyze related needs after treatment in the ICU. To identify and treat ICU post-care problems that will have the opportunity and contribute to bringing patients back in, the authors group two approaches, the first is by identifying problems, and the second is problem-solving strategies.

**a) Identify problems**

Before planning a treatment program for patients, patient grouping based on impact by identifying problems needs to be considered.

The authors classify the types of problems identified: 1) health status, 2) mental health and cognition, 3) drug use, 4) access and navigation of health services, and 5) quality of life (26).

- Health status  
Nurse's assessment in identifying events related to new health problems that have occurred since discharge from the hospital. For example, in the form of complaints that arise or the effects of the course of the disease.
- Mental health and cognition  
Patients describe critical illness as an emotionally challenging experience. In the results of the research review in the previous article, patients reported feelings of anxiety, frustration, sadness, shame, and depression. The conditions of care in the ICU lead to the patient dreaming that he is dying and that death will overtake him.
- Drug use  
Drug reconciliation is carried out by the pharmacist at every ICU-RC visit. This assessment was successful in identifying adherence issues and potential causes, eg, confusion about the purpose of treatment or drug stockouts. Patient-provider reviews, including dosage, timing, and adherence to medication.
- Service navigation access

In the results of a review of previous research articles, patients describe difficulties and confusion when trying to access health care and navigate the health system. For example, in stabilization efforts related to consultation programs with specialist doctors, the lack of insurance is an obstacle to receiving quality care.

- Quality of life

At this stage, patients usually describe the impact of ICU hospitalization on interpersonal relationships. During ICU-RC visits, several patients and care partners identified changes in their overall quality of life and illustrated how physical, mental, cognitive, and socioeconomic challenges are often interdependent after critical illness.

- b) Problem-solving strategy

After the problem is identified, the nurse discusses it with the patient and care partner to find a solution. Discussions between patients and nurses illustrate the interactive nature of finding problems and solving solutions.

- Facilitate Care Coordination and Transition

- Facilitate by connecting patients with additional healthcare resources (e.g., referrals, tests, new prescriptions, and follow-up recommendations). As a form of symptom management and preventing serious problems in the future.

- Care transition

Safe transfer from the ICU is generally a complex process that does not end with ICU discharge (27). The decision to discharge each patient should be discussed by the ICU nurse and physician to enhance and holistically incorporate all relevant information. In addition, awareness of the gap that exists between levels of care provided in ICU and general wards should encourage sending and receiving unit healthcare providers to work together, considering proper continuity of care as a shared collective responsibility (28). A proposed solution to improve outcomes for patients leaving the ICU is a “critical care transition program” (29), typically consisting of experienced

critical care nurses or other healthcare professionals who ensure rounds of proactive surveillance and routine follow-up of patients after discharge from the ICU. ICU and support ward nurses and physicians with patient care management (30,31). Some things must be considered when making the transition from the ICU to the ward. First, criteria for safe and effective ICU discharge must be applied. Second, step-down or intermediate care beds should be made available to transfer patients most at risk. Third, several aspects of the patient's discharge pathway must be managed proactively, for example, by implementing oral and written medical/nursing handovers, including medication reconciliation, and by removing invasive devices and supports as soon as they are no longer clinically needed. Fourth, early physical and pulmonary rehabilitation that focuses on early recovery of respiratory and functional abilities must be improved. Finally, regular follow-up of critical care transitions should be ensured along with the implementation of a Hospital Early Warning System/Track-and-Trigger plan to quickly detect and treat worsening patients(32).

- Patient education and guidance

Nurses must equip patients through education and guidance to facilitate knowledge and understanding of their health care to address identified problems. In the review results of previous studies, many problems were overcome by providing accurate information to patients and filling the gaps in practical knowledge for patients (9,33). Nurses help patients to understand their condition and treatment better and provide anticipatory guidance regarding the trajectory of recovery.

## Identify antecedents and consequences

### a) Antecedence

Antecedents are factors that have occurred before that affect the attributes that characterize the concept (19). Continuing care

provides an opportunity to maximize recovery and minimize side effects from critical illness in high-risk populations. The results of a review of previous research studies illustrate that several factors can contribute to being an obstacle during a continuous care program. Some of these post-ICU clinical phenotypes are partly due to inadequate resource allocation (staff, space, and personnel time), health insurance, patient socioeconomics, logistical challenges in recruiting and retaining a weak high-risk patient population, and gaps in our knowledge of how to ensure maximum recovery in critical illness survivors to the lack of patient and provider awareness of the sequelae of critical illness (34).

#### **b) Consequence**

Consequences are the result of concepts, which occur after and as a result of concepts(19). Therefore, the consequence of continuing treatment refers to the outcome. The positive consequence of continuing care is a coping process to help patients establish post-treatment recovery conditions in the ICU. On the other hand, the adverse outcomes include reduced quality of life and increased burden on caregivers. Many studies examining health-related quality of life show that post-ICU nurses who are not properly prepared have a negative impact (4,35,36).

#### **Identify model cases**

A model case is defined by Walker and Avant (19) as a paradigmatic example that demonstrates the appropriate use of the concept. As a result, all defining attributes must be present in the case model. Case model Mary, 67 years old, was admitted to the ICU with a diagnosis of pneumonia. He was in respiratory failure and needed respiratory support for two weeks.

On admission, a urinary catheter was inserted, and mechanical ventilation and antibiotic treatment were started, supported by the use of sedation and muscle relaxants. He continued to be treated with mechanical ventilation and antibiotic support in the second week, but his condition improved, so the sedation and muscle relaxants were discontinued. After the sedative stopped, he gradually regained consciousness and recovered.

A spontaneous breathing trial and daily screening of respiratory function are provided to assist with weaning. described below the installation of mechanical ventilation. Mechanical ventilation was gradually discontinued, and the endotracheal intubation tube was removed. After extubating, Mary was given oxygen through a mask and then used a nasal cannula as her condition improved. At the end of the third week, he was released from the ICU and transferred to the hospital ward. When Mary was sent to the hospital ward later, the ICU nurse fully explained Mary's care during the handover process, which the nurse fully understood. After being treated in the ward. While on the ward, the nurse noticed that Mary had trouble using cutlery and she needed help eating. She also has problems getting to the toilet alone and needs help (new and worsening physical impairment). Additionally, if he couldn't see his family for some time, he became anxious and his mind went blank. He also has trouble sleeping at night and frequently wakes up several times (a new and worsening psychological disorder).

Remembering the date was difficult for her, despite receiving several prompts and reminders (new and worsening cognitive impairment). After a total hospital stay of 33 days, Mary was sent home. Three months after discharge (longer survival from critical care and after discharge from ICU), she still finds it difficult to walk on her own and needs help from family members. He had trouble sleeping and frequently woke up during the night. He complained of fatigue, a mild cough, and other new symptoms. He often feels helpless and anxious (physical disturbances and psychological disturbances). He became forgetful and found it difficult to concentrate; she often lost her train of thought (cognitive impairment). In the past, Mary often saw friends, but since living in the hospital, she rarely goes out to see her friends. He has difficulty reconnecting with his friends. One of the challenges of talking to her friends is her caring and preoccupation with her condition, and she is reluctant to continue to remember her negative feelings about her condition and ICU stay with them because this makes her

feel more anxious. (failed social reconstruction)

### Identify empirical references

Empirical references are actual data whose presence indicates the occurrence of a concept and can be used to identify the characteristics or attributes that make up the concept (19). Validated tools to identify the holistic domain of continuing care are yet to be developed. A recent review published by the Cochrane Collaboration (37) aimed at evaluating the long-term outcomes of ICU discharge rehabilitation programs revealed inconclusive results due to the variability of the tools used to measure each domain and the outcomes assessed in each trial. The conclusion of the review conducted by Jensen (38) explains that all authors emphasized the need to standardize interventions and measure outcomes in future trials.

Based on the findings from the article review conducted by the author, there is only an instrument to identify problems to assist nurses and health workers in identifying the needs of patients in the recovery process so that the hope is that the interventions given will be right on target.

Patients who meet the inclusion criteria for the follow-up program on discharge from the ICU should receive a follow-up sheet (see Fig. 2) and a rehabilitation Manual. This rehabilitation manual was developed by Jones (39). the group at St Helens and Knowsley Hospital and translated by the SATI Follow-Up and Rehabilitation Committee with permission of Christina Jones.

### CONCLUSION

Patients who survive critical illness and have been discharged from the Intensive Care Unit (ICU) face a high risk of being readmitted to the hospital, developing a new chronic illness, or even worsening their condition, as well as a higher risk of death in the years following discharge. Some of the attributes of the concept of continuous care include monitoring and management of post-critical illness symptoms, planning transitions of care from the ICU to the ward, patient education and guidance, and solving problems in overcoming the obstacles faced by post-ICU patients.

### RECOMMENDATION

This analysis concept is a concept that describes the needs of patients after ICU treatment so it is hoped that the results of this research can be applied in a continuous care program for critical patients after treatment in the ICU and it is hoped that further research can see how this continuous care practice guide can affect improving the quality of life. post-treatment patients receive treatment in the ICU and help reduce symptoms after treatment in the ICU.

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