

Review Article

# Concept Analysis of Pain Anxiety Using Rodgers' Evolutionary Method

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**Abstract**

**Background:** Knowledge of the concept of pain anxiety is necessary to provide better services in the care of patients suffering from various types of pain. Therefore, the aim of this study was to precept and learn more about the concept of pain anxiety.

**Methods:** This study was analyzed using Rodgers' evolutionary concept analysis approach for articles published from 1975 to 2023. Valid databases, including Google Scholar, CINAHL, Scopus, PubMed, Web of Science, and ProQuest, were used to search for sources. Articles or sources published in the field of nursing and medicine were included in the study, and the existing articles were sorted according to the year of publication to determine the changes in the concept over time. The text of each article was re-read, and related phrases were identified based on their appropriateness, and finally, a new definition of pain anxiety was explained.

**Results:** Pain anxiety indicates cognitive, emotional, behavioral, and physiological reactions to the anticipation and experience of pain, which refers to future fears and concerns about pain. This type of anxiety appears with different words and phrases that represent fear, worry, discomfort, panic, and anger. The antecedents of pain anxiety include chronic pain, procedures such as dressing changes, and injuries such as fractures and burns. The consequences of this concept include physical and psychological problems, such as worsening pain. The word "pain-related fear" can be utilized as an alternative concept. To provide an example of pain anxiety, we can refer to a patient who has no history of surgery, and after performing the first debridement and dressing, avoids debridement and changing the dressing in the following days.

**Conclusion:** This analysis provides a dynamic definition of pain anxiety that may be useful to promote interaction and enhance understanding of concepts.

**Keywords:** Pain anxiety, Concept analysis, Rodgers' evolutionary method

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## Introduction

Pain anxiety is a complex word related to words such as anxiety, pain, stress, fear, distress, and obsession. Pain anxiety is not a substitute for any of these concepts, but they are related to each other, either as an antecedent or as a consequence. It is important to have a careful understanding of these words. Rogers believes that changing and dynamic concepts have a wide range of meanings in different disciplines. Pain anxiety is more widely used in nursing, and nurses pay more attention to it than physicians (1).

Recent studies show that pain anxiety has been utilized more in nursing research in the field of caring for patients with burns (2). Therefore, to clarify the concept, we have

focused on the common applications of the concept of pain anxiety in nursing and its relationship with multiple factors, including acute and chronic pain.

Knowledge of the concept of pain anxiety is necessary to provide better services in the care of patients suffering from various types of pain. Although many studies have been performed in this field, no comprehensive study has so far defined this concept and its properties, antecedents, consequences, related concepts, and alternative words. Antecedents are the prerequisites of the studied concept and affect the occurrence of the concept (3). The results that appear after the occurrence of a concept are called consequences (4). The first step in data analysis is to identify related concepts in order to understand the origin,



evolution, function, and internal connections of the concept. Alternative words mean expressing the concept with words and expressions other than the chosen concept for the study (4). This research aimed to precept and know more about the properties, antecedents, and consequences of the concept of pain anxiety.

### Materials and Methods

This study was analyzed with Rogers' evolutionary concept analysis. Concept analysis will provide a perspective that differentiates a concept from other similar concepts. In this method, the selected concept as an important concept is repeatedly used, emphasized, and studied, thus increasing its usefulness and clarity, as well as its usefulness and clarity. One of the basic approaches in concept analysis is the evolutionary method of Rogers, which emphasizes the desired concepts and their role in the expansion and development of knowledge. In this method, the dynamic nature of concepts is taken into consideration. Rogers emphasizes that the analysis process is non-linear and consists of a series of overlapping steps instead of sequential steps (5).

The stages of concept analysis in this approach include identifying the desired concept, words, and phrases related to it, choosing professional contexts and time periods for data collection, determining alternative words, and identifying related concepts. The other stages are analyzing data in order to determine antecedents, properties, and consequences, comparing the concept in different professional contexts, introducing a model or example of the concept if possible, and presenting hypotheses and recommendations for the evolution of the concept as much as possible (3,5). The desired concept, words, and phrases employed to search for sources in data collection were identified in the first stage of Rogers' concept analysis. First, a brief review of the available texts was performed to select these keywords. Then, words frequently used in these sources were extracted, and keywords were selected in consultation with the research team. Next, a professional platform and an appropriate time period were chosen for data collection. The time interval for data collection was considered from 1975 to 2023. Subsequently, alternative words were determined. Valid databases, including Google Scholar, CINAHL, Scopus, PubMed, Web of Science, and ProQuest, were used to search for sources. The keywords searched included pain anxiety, pain-related anxiety, pain-related fear, and fear of pain. The strategy used to advanced search in electronic databases was (((("pain anxiety [Title/Abstract]) OR "pain-related fear" [Title/Abstract]) OR "fear of pain" [Title/Abstract]) OR "pain-related anxiety" [Title/Abstract])). The search date was July 1, 2023. Both quantitative and qualitative studies were included in this research. The other inclusion criteria were studies that were published in English or Farsi languages and in the fields of nursing and medicine. Articles with similar titles were excluded from the search process. Rogers states that

a review of 20% of all related articles is required as an acceptable minimum (3). The selected articles were sorted according to the year of publication to determine the changes in the concept over time. Then, the text of each article was re-read, and related phrases were identified based on their appropriateness. A new definition of pain anxiety was explained eventually.

### Results

In the present study, twenty references (nineteen articles and one thesis) were selected for analysis (Table 1). In this section, first, the properties, antecedents, and consequences of pain anxiety are discussed, and then related concepts, alternative words, and examples are mentioned as well.

#### Properties

Pain anxiety indicates cognitive, emotional, behavioral, and physiological reactions to the anticipation and experience of pain, which refers to future fears and concerns about pain (9, 23). This type of anxiety plays a role in pain and pain-related disabilities and focuses on behavioral avoidance (24). It appears with a variety of words and phrases that indicate fear, worry, discomfort, panic, and anger (16). Pain anxiety may show anxiety sensitivity rather than a limited phobia, and this distinction can be useful in guiding us to provide therapeutic strategies (10).

Pain anxiety is present in people with chronic pain, and this construct may be partly due to the relationship between pain intensity and opioid abuse and psychosocial disability (19). This type of anxiety is an emotional response that is reported by people with chronic pain, such as rheumatoid arthritis and acute pain in burn patients. Pain anxiety is accompanied by a feeling of fear and anticipation of pain (7,8). This anxiety is accompanied by painful therapeutic interventions for repairing burn injuries (2).

#### Antecedents

Antecedents of pain anxiety include chronic pain such as rheumatoid arthritis and back pain, procedures such as dressing changes and wound debridement, and injuries such as fractures and burns that lead to acute pain (2,7-10).

#### Consequences

The consequences of this concept include physical and psychological problems such as worsening pain, disability, suffering, weakening of the immune system, sleep disorder, and wound healing disorder (2,7,9).

#### Related Concepts and Alternative Words

In this study, after reviewing the selected texts, the word "pain-related fear" was identified as an alternative concept. Fear is defined as an emotional response to a threat, and anxiety is an anticipation of fear (25). Fear of pain develops as a result of distressing beliefs and negative interpretations that pain is equivalent to injury. Fear of pain may include fear of movement, activity, or work (26).

**Table 1.** Properties, Antecedents, and Consequences of the Concept of Pain Anxiety

First Author	Properties	Antecedents	Consequences
Crombez (1994) (6)	Pain anxiety is the avoidance of pain that leads to limiting the body's range of motion, such as knee extension and flexion.	Chronic pain	General disability, disruption of daily life activities, and loss of job
Taal (1997) (7)	It is a type of anxiety in burn patients that is accompanied by a feeling of fear and anticipation of pain.	During, before, and after procedures such as dressing changes and surgery	Impaired wound healing
Strahl (2000) (8)	It is an emotional response reported by people with chronic pain, such as rheumatoid arthritis.	Chronic pain, such as rheumatoid arthritis	-
McCracken (2002) (9)	Anxious or fearful responses to pain or movement are reported by people with chronic pain. This type of anxiety indicates cognitive, emotional, behavioral, and physiological reactions to the anticipation and/or experience of pain.	Acute and chronic pains	Physical and psychological problems, including disability and suffering
Greenberg (2003) (10)	Pain anxiety may represent anxiety sensitivity rather than a limited phobia, and this distinction can be useful in guiding us to provide therapeutic strategies.	Chronic pain	-
Asmundson (2004) (11)	Pain anxiety is defined as an emotional state related to the anticipation of pain and its negative impact.	Chronic pain	-
Manzari (2007) (2)	This anxiety is associated with painful therapeutic interventions used to repair burned tissue.	Invasive therapeutic interventions such as wound debridement	Aggravation of pain, weakening of the immune system, and sleep disturbance
Means-Christensen (2008) (12)	A type of anxiety that can occur along with depression and is associated with disabilities from pain.	Pain-related disability	-
Keogh (2010) (24)	Pain anxiety is implicated in the development of pain and pain-related disability and focuses on behavioral avoidance.	Injuries such as fractures that lead to acute pain	-
Huguet (2011) (23)	Pain anxiety refers to prospective apprehensions and worries about pain.	-	-
Huggins (2012) (13)	A type of emotional, psychological, and behavioral disorder that is caused by experiencing anxiety and fear related to pain and leads to the avoidance of necessary activities and movements for recovery.	Chronic pain due to AIDS	Atrophy, depression, and disability
Mohammadi Fakhari (2013) (14)	Anticipatory anxiety in burn patients that occurs after repeating painful treatment methods.	Dressing change, debridement, and physiotherapy	Fear, sleep disorder, and depression
Coons (2013) (15)	Pain anxiety is one of the emotional manifestations of the autonomic nervous system that occurs in response to the expectation of pain.	Acute and chronic pains	-
Hosseini Amiri (2014) (16)	Anxiety that appears with different words and expressions indicating fear, worry, discomfort, panic, and anger.	Burn	-
Adams (2015) (17)	It is a type of anticipatory anxiety in burn patients that has a vicious cycle between it and burn pain in such a way that pain leads to anxiety, and an increase in the level of anxiety causes a greater perception of pain.	Background pain of a burn, breakthrough pain of a burn, and pain related to therapeutic interventions	-
Boyer (2016) (18)	This type of anxiety leads to the destruction of the physical performance of the burn patient by increasing the intensity of pain and is a threatening factor that affects the wound-healing phenomenon through psychological and physiological processes.	During, before, and after procedures such as dressing changes	Impaired wound healing
Rogers (2020) (19)	Pain-related anxiety is observed in people with chronic pain, and this construct may be due to the relationship between pain intensity and opioid abuse and psychosocial disability.	Chronic pain, opioid abuse, and social disability	-
Alinia-Najjar (2020) (20)	It is a kind of feeling of fear in burn patients, of which burn-specific pain anxiety is the most common type.	Burn dressing changes	Sleep disorders and impaired wound healing
Sarfraz (2021) (21)	It is a kind of mental health problem that is caused by the perception of pain.	Osteoarthritis	-
Sahin (2022) (22)	It is a type of anticipatory anxiety in burn patients that occurs with the repetition of regular invasive procedures such as wound care procedures.	Painful wound care procedures	Impaired wound healing

Note. AIDS: Acquired immunodeficiency syndrome.

### Example

Mr. "A", who made a living by preparing charcoal from agricultural residues, suffered a thermal burn with a flame on his legs on a working day in the summer season, and after being admitted to the emergency department, he was hospitalized at the men's burn department. To repair the burn injuries, the patient needed debridement and changing the betadine acid dressing (2% acetic acid and 10% betadine) with a ratio of 20% to 80%. The patient, who had no history of surgery or invasive interventions,

avoided debridement and dressing changes in the following days after performing the first dressing. The patient experienced high and low levels of pain anxiety due to debridement and changing burn dressings daily.

### Discussion

This research provided a comprehensive understanding of the concept of pain anxiety in the context of caring for patients with acute and chronic pain, and defined it more clearly, and showed that it helps increase nurses'

awareness of the themes of pain anxiety in patient care.

Pain anxiety indicates reactions to the anticipation and experience of pain, which refers to future fears and concerns about pain. This definition is consistent with the literature. Kring et al stated that anxiety comes from people's anticipation (27).

Our study results indicated that pain anxiety is caused by stressful events such as chronic pain, invasive procedures, injuries, and the like. In addition, evidence revealed that types of anxiety disorders occur when people do not have a proper and reasonable perception (28).

The consequences of the pain anxiety concept are in line with the literature. Aldao et al demonstrated that anxiety can affect both physical and psychological health and even lead to physical and mental illness (29).

Our literature review indicated that the word "pain-related fear" can be used as an alternative concept. The Anxiety Centre asserts that anxiety is the same as fear, and this concept is a state of apprehension, uncertainty, and fear resulting from the anticipation of a realistic or fantasized threatening event or situation, often impairing physical and psychological functioning (30).

According to the results of this study, pain anxiety is an unpleasant cognitive, emotional, behavioral, and physiological experience accompanied by fear, predicting and avoiding acute pain such as pain resulting from painful treatment procedures in patients with burns and fractures or pain resulting from movements in patients with chronic pain such as low back pain and rheumatoid arthritis that may express fear, apprehension, worry, discomfort, panic, and anger related to pain.

### Limitations of the Study

One of the limitations of the current research is the lack of access to the full text of some articles. Further, the insufficiency of studies on pain anxiety in Iran is another limitation of this study. It is suggested that more studies be performed regarding the development of this concept in the field of nursing.

### Conclusion

This analysis provides a dynamic definition of pain anxiety that may be useful to promote interaction and enhance an understanding of concepts. This definition may enhance efforts to provide services for patients with pain anxiety. The results of this research can create an opportunity for further research in the direction of developing the concept of pain anxiety and its use in various fields of theorizing and research in clinical fields.

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### Authors' Contribution

**Conceptualization:** Meysam Hosseini Amiri, Ali Fakhr Movahedi, Mohsen Soleimani.

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### Competing Interests

The authors reported no conflict of interests.

### Ethical Approval

The present study was conducted with regard to the principles of the revised Declaration of Helsinki.

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