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Current Status and Influencing Factors of Sense of Coherence in Patients with Parkinson's Disease

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Abstract: By systematically reviewing existing studies on the sense of coherence (SOC) in patients with Parkinson's disease (PD), this paper summarizes the current research status and analyzes major influencing factors associated with SOC in this population. Parkinson's disease is characterized by progressive motor dysfunction accompanied by complex psychological and social challenges, which significantly impair patients' adaptive capacity and quality of life. As a core psychological construct derived from the salutogenic model, sense of coherence represents an individual's ability to comprehend, manage, and assign meaning to stressful life events. Increasing evidence suggests that SOC plays a crucial protective role in psychological adjustment, disease coping, and health behavior maintenance among patients with chronic illnesses. This review integrates domestic and international findings to clarify the multidimensional determinants of SOC in PD patients, including social support, educational level, disease severity, psychological status, exercise participation, and adaptive capacity. Furthermore, the clinical implications of strengthening SOC through nursing interventions are discussed. The study aims to provide theoretical support for developing targeted psychosocial and nursing strategies to enhance psychological resilience, promote self-management ability, and ultimately improve quality of life in patients with Parkinson's disease.

Keywords: Parkinson's Disease; Sense of Coherence; Research Status; Neurology Nursing; Review.

1. Introduction

Parkinson's disease (PD) is a common chronic progressive neurodegenerative disorder that poses a substantial burden on global public health systems and aging societies [1]. The pathological characteristics of PD mainly involve degeneration of dopaminergic neurons in the substantia nigra, leading to typical motor symptoms such as tremor, rigidity, bradykinesia, and postural instability. Alongside motor impairment, patients frequently experience non-motor symptoms including depression, anxiety, sleep disorders, fatigue, and cognitive decline, which collectively exert profound negative effects on daily functioning and psychosocial well-being [2].

Although pharmacological therapy and surgical treatments can alleviate clinical symptoms to a certain extent, PD remains incurable. As the disease progresses into middle and advanced stages, treatment efficacy gradually declines, functional dependence increases, and patients often encounter long-term disability and social participation restrictions. Continuous exposure to disease-related stressors may induce emotional distress, social withdrawal, and diminished life meaning, ultimately resulting in reduced quality of life and poor rehabilitation outcomes [3].

In recent years, researchers have increasingly emphasized positive psychological resources in chronic disease management. Sense of coherence, proposed within Antonovsky's salutogenic framework, provides a theoretical perspective that shifts attention from disease pathology to health-promoting capacities [4]. SOC reflects a stable orientation enabling individuals to perceive life events as understandable, manageable, and meaningful. Individuals with stronger SOC demonstrate greater resilience when confronted with chronic illness stress and are more likely to adopt adaptive coping strategies and health-promoting behaviors [5-6].

Therefore, exploring the current status and influencing factors of SOC among PD patients has important implications for neurological nursing practice and long-term disease management.

2. Concept of Sense of Coherence

Sense of coherence, also translated as psychological integration or psychological coherence, represents the central construct of the salutogenic model [7]. Antonovsky formally introduced this concept in 1987, proposing that health exists along a continuum influenced by individuals' capacity to mobilize internal and external resources when encountering stress [8].

SOC consists of three interrelated dimensions. **Comprehensibility** refers to the cognitive perception that internal and external stimuli are structured, predictable, and explainable. **Manageability** reflects an individual's belief that adequate resources are available to meet life demands. **Meaningfulness**, considered the motivational component, represents the extent to which individuals perceive life challenges as worthy of emotional investment and engagement.

These three dimensions function synergistically to promote adaptive coping responses, emotional stability, and maintenance of overall health status [9]. Within chronic disease contexts such as PD, SOC serves as an essential psychological resource facilitating long-term adjustment to progressive functional decline.

3. Assessment Tools for Sense of Coherence

3.1. SOC-29

Antonovsky developed the Sense of Coherence Scale (SOC-29), consisting of 29 items distributed across comprehensibility, manageability, and meaningfulness dimensions [10]. The SOC-29 scale has demonstrated strong

psychometric properties across diverse cultural populations and remains the most widely used instrument for assessing SOC globally.

3.2. SOC-13

To improve clinical feasibility, the shortened SOC-13 scale was later introduced and culturally adapted by Bao Leiping et al. in China [11]. The Chinese version includes 13 items and maintains satisfactory reliability and validity indicators, making it suitable for elderly and chronically ill populations with limited assessment tolerance.

3.3. SOC-12

Subsequent psychometric analyses revealed potential redundancy within SOC-13 items. Researchers therefore developed the SOC-12 scale after removing one item with weak loading, resulting in improved internal consistency and structural validity [12]. The simplified scale enhances applicability in clinical nursing research involving vulnerable populations such as advanced PD patients.

4. Research Status of Sense of Coherence

4.1. International Research Status

International investigations on SOC began earlier and have expanded across multiple chronic disease populations. Studies involving PD patients employ cross-sectional, longitudinal, and intervention-based designs.

Marianne Caap-Ahlgren et al. [13] conducted longitudinal research demonstrating that deterioration in functional status among PD patients was accompanied by significant declines in SOC scores. These findings highlight SOC as an important indicator reflecting patients' adaptive capacity during disease progression.

Annalisa et al. [14] further reported that PD patients generally exhibit relatively low SOC levels and substantial caregiving burden, suggesting that psychological resilience may influence both patient outcomes and caregiver stress.

4.2. Domestic Research Status

With the development of positive psychology in China, SOC has gradually attracted attention in neurological nursing research. Existing domestic studies mainly focus on SOC levels and demographic influences among PD patients. However, investigations integrating positive psychological constructs remain limited.

Jian Aihua et al. [15] reported that SOC levels in PD patients were generally low, with educational level, disease severity, economic condition, and social support identified as significant predictors. Nevertheless, multicenter longitudinal studies are still lacking, indicating the need for more comprehensive research frameworks.

5. Influencing Factors of Sense of Coherence in Parkinson's Disease Patients

5.1. Social Support

Social support is consistently recognized as one of the strongest predictors of SOC [16]. Emotional encouragement, informational assistance, and practical caregiving resources enhance patients' confidence in coping with disease-related stress and reduce psychological burden [17].

Due to progressive disability and social withdrawal, elderly PD patients often experience reduced social interaction compared with community-dwelling older adults [18]. Insufficient social support may weaken coping resources and negatively influence SOC development.

5.2. Educational Level

Educational attainment significantly influences cognitive processing ability, health literacy, and decision-making competence. Patients with higher educational levels typically demonstrate stronger disease understanding and resource utilization capacity, contributing to enhanced perceived controllability of stressors and higher SOC levels [19].

5.3. Disease Severity

Disease severity directly affects physical functioning and psychological adaptation. Advanced PD patients frequently encounter mobility limitations, treatment complications, and dependency, which increase perceived stress and diminish manageability perception [15]. Consequently, worsening disease status is associated with reduced SOC.

5.4. Psychological Factors

According to the salutogenic theory, SOC is closely linked to mental health outcomes [20]. PD patients with stronger SOC exhibit lower depression prevalence and higher life satisfaction [21].

Chen Xia et al. [23] demonstrated that PD patients commonly adopt avoidance or resignation coping styles, contributing to decreased SOC levels compared with other chronic disease populations. Timely psychological assessment and nursing intervention are therefore essential for improving emotional adjustment and enhancing SOC.

5.5. Exercise Training

Regular physical exercise improves motor function, balance ability, and overall well-being among PD patients [24]. Exercise interventions not only enhance physical capacity but also strengthen self-efficacy and perceived controllability.

Evidence indicates that structured exercise programs significantly improve intrinsic capacity and functional health in elderly individuals [25]. Improved physical performance may indirectly reinforce SOC by increasing patients' confidence in managing disease challenges.

5.6. Adaptability

Adaptability reflects patients' ability to reconstruct life meaning under chronic illness conditions. Studies have shown that PD patients with stronger adaptive capacity demonstrate higher life satisfaction and better psychological adjustment [26].

Antonovsky emphasized that SOC develops through continuous interaction between individuals and environmental resources across the lifespan [27]. Patients with stronger SOC perceive stressful events as less threatening and exhibit superior adjustment to changing life conditions [28-30].

6. Conclusion and Future Perspectives

Patients with Parkinson's disease face persistent physical impairment, psychological stress, and socioeconomic challenges throughout disease progression. Sense of coherence functions as a vital psychological protective factor

facilitating adaptive coping, emotional regulation, and health behavior maintenance.

Current evidence indicates that SOC levels among PD patients remain relatively low and are influenced by multidimensional factors including social support, education, disease severity, psychological status, exercise participation, and adaptability. Strengthening SOC may therefore represent an effective pathway for improving quality of life and promoting successful aging among PD patients.

Future research should prioritize multicenter longitudinal studies and intervention trials aimed at enhancing SOC through integrated nursing strategies such as psychosocial support, cognitive-behavioral intervention, rehabilitation exercise, and patient empowerment programs. Continuous monitoring of SOC changes may enable healthcare professionals to implement individualized and dynamic nursing interventions.

From a clinical perspective, incorporating SOC assessment into routine neurological nursing evaluation may contribute to holistic patient-centered care. Enhancing positive psychological resources is expected to become an important direction and emerging mission in PD nursing management.

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