



## Redefining Recovery: A Descriptive Phenomenological Study of Elderly Patients' Lived Experiences with Stem Cell Therapy for Advanced Osteoarthritis

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### ABSTRACT

Regenerative medicine offers innovative therapeutic solutions for degenerative disease such as osteoarthritis, particularly among elderly populations. As populations age globally, osteoarthritis has emerged as a leading cause of disability, significantly impairing mobility and quality of life. While mesenchymal stem cell (MSC) therapy has demonstrated clinical efficacy, little is known about how patients perceive and make sense of their healing experiences. Previous research has largely focused on physiological outcomes, leaving a gap in understanding the subjective, lived experience of those undergoing regenerative interventions. This study addresses that gap by applying a descriptive phenomenological approach to explore how elderly patients experience MSC therapy for advanced osteoarthritis. Semi-structured interviews were conducted with eight participants aged 60 and above, and data were analyzed using Colaizzi's method to extract themes that reflect the essence of their experiences. The findings reveal four key themes: regaining lost independence, emotional relief and psychological rebirth, ambivalence toward scientific innovation, and shifting family dynamics and social reintegration. These themes indicate that healing is experienced not only as physical recovery but also as a redefinition of identity and social belonging. The study highlights the need for integrating patient narratives into clinical evaluations to inform more humanistic and holistic care practices. These results contribute to expanding the phenomenological understanding of regenerative therapies and offer a foundation for future qualitative inquiries into the subjective dimensions of medical innovation.



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### INTRODUCTION

Osteoarthritis (OA) represents one of the most prevalent degenerative joint diseases globally, particularly affecting the elderly population and contributing significantly to pain, disability, and diminished quality of life. As populations age and life expectancy increases, the burden of OA is expected to escalate, making it a pressing public health concern (Hajj dkk., 2021). In response to the limitations of conventional pharmacological and surgical interventions, regenerative therapies—such as mesenchymal stem cell (MSC) injections—have emerged as promising alternatives offering biological repair of damaged cartilage and modulation of inflammation. While clinical research has demonstrated measurable improvements in joint function and structural outcomes, less is known about the lived experiences of patients undergoing such therapies.

Within the broader landscape of regenerative medicine, the subjective dimension of healing is often overshadowed by objective markers such as radiographic changes or biomolecular indicators. However, for many elderly patients, the impact of treatment extends beyond clinical recovery to encompass emotional, psychological, and relational aspects of well-being. The experience of mobility

restoration, the alleviation of chronic pain, and the re-engagement with daily life can carry profound personal significance that is not fully captured by quantitative measures.

This growing recognition of patient-centered care underscores the need to explore how individuals interpret, internalize, and find meaning in their therapeutic experiences. A phenomenological approach is particularly well-suited to address this gap by focusing on the lived experiences and perceived realities of patients (James & Joseph, 2022). Through deep narrative exploration, this approach allows for an understanding of the phenomenon from the perspective of those who live it, thereby contributing to a more holistic comprehension of the outcomes and implications of regenerative interventions.

Building upon the broader recognition of patient-centered outcomes in regenerative medicine, research focusing on the subjective experiences of individuals undergoing innovative therapies has gained increasing importance. In particular, the exploration of how elderly patients perceive and internalize their journey through mesenchymal stem cell (MSC) therapy offers valuable insights that transcend traditional biomedical assessments. Understanding this experience not only deepens clinical knowledge but also informs the development of more empathetic and responsive models of care.

Despite this growing interest, methodological challenges persist in capturing the nuanced and deeply personal meanings associated with therapeutic experiences. Many existing studies rely heavily on quantitative designs, which, while effective for measuring clinical efficacy, often fall short in revealing the psychological, emotional, and existential dimensions of healing. Standardized scales and outcome metrics may overlook how patients construct meaning, cope with uncertainty, and negotiate identity transformations throughout their treatment process.

These limitations have led to a critical gap in fully comprehending the lived realities of patients, particularly within populations such as the elderly, who may possess complex layers of experience shaped by age, comorbidity, and social context. As a result, conventional approaches remain insufficient for uncovering the essential structures of the phenomenon as experienced by the individuals themselves (Lindgren dkk., 2019). A phenomenological framework becomes imperative in such contexts, offering a rigorous and humanistic lens through which the core of patient experience can be authentically accessed and interpreted.

In the clinical context of osteoarthritis treatment, current efforts have primarily centered around objective indicators such as radiologic progression, cartilage regeneration, and joint mobility scores. While these practical approaches offer measurable outcomes, they often disregard the subjective experiences that shape patients' understanding of recovery and quality of life. Standardized assessments fail to capture the emotional, existential, and psychosocial dimensions of therapeutic processes—dimensions that are especially critical among elderly patients confronting chronic pain and reduced independence.

Moreover, the prevailing reliance on quantitative frameworks presents inherent limitations in accessing the depth and variability of lived experiences. Although these methods are effective for evaluating general trends, they often abstract or overlook the nuanced ways in which individuals attribute meaning to their treatment outcomes, personal transformations, and shifting social roles. This results in a fragmented view of patient recovery, one that neglects the complexities of human perception and interpretation.

Addressing this gap necessitates a methodological shift toward phenomenology, which offers a means to explore the essence of patients' experiences beyond surface-level observations. A descriptive phenomenological approach, rooted in Husserlian philosophy, provides a structured yet flexible framework for uncovering how patients live through, reflect upon, and make sense of regenerative therapy. Such an approach is vital to producing a richer, more holistic understanding of how therapeutic innovation is embodied and internalized by those it seeks to heal.

Previous studies have explored the clinical outcomes of mesenchymal stem cell (MSC) therapy in patients with osteoarthritis, focusing mainly on structural improvements and functional recovery (Liskova dkk., 2020). However, only a few investigations have addressed the subjective experiences of patients undergoing regenerative therapy, particularly in elderly populations. Theoretical perspectives from humanistic and patient-centered care models highlight the need to understand how individuals experience healing in ways that transcend biomedical definitions. Some qualitative studies have touched on psychological or emotional responses, yet lacked methodological depth in capturing lived experiences. Therefore, there remains a gap in how regenerative interventions are experienced and given meaning by patients themselves.

To address this gap, this study adopts a descriptive phenomenological approach grounded in Husserlian philosophy. This method was chosen for its capacity to uncover the essential meanings of experience as lived by individuals, without imposing interpretative frameworks. Through semi-structured interviews and Colaizzi's method of analysis, the study explores how elderly patients perceive the effects of MSC therapy on their physical, emotional, and social well-being. In doing so, the study responds to the need for deeper, holistic understanding that previous quantitative methods have not adequately fulfilled. The phenomenological method allows the voices of patients to emerge authentically, providing insight into what it truly means to heal.

This article is structured as follows (Matrana & Campbell, 2020). The introduction outlines the research context and identifies the need for a phenomenological approach to study the subjective experience of MSC therapy. The methodology section describes the design, participant selection, data collection, and analytical procedures used. The results present the main themes identified through narrative descriptions supported by direct quotations. The discussion interprets these themes in light of existing literature and theoretical perspectives, followed by a conclusion that summarizes the study's contributions and implications for future research and clinical practice.

## **RESEARCH METHODS**

### **Study Design**

This study employed a descriptive phenomenological design, grounded in Edmund Husserl's philosophical tradition, to systematically investigate the lived experiences of elderly patients undergoing mesenchymal stem cell (MSC) therapy for advanced osteoarthritis. This approach was selected due to its alignment with the study's objective: to uncover the essential meaning embedded within the subjective experiences of individuals (Mehta dkk., 2020). Phenomenology emphasizes the intentionality of consciousness and the description of phenomena as experienced by participants, free from presuppositions. The use of descriptive phenomenology enabled a systematic and unbiased exploration of how patients interpret their therapeutic journey, thereby allowing a rigorous representation of the phenomenon's essence. The method emphasized epoché or bracketing to suspend preconceptions, ensuring that participant experiences remained central throughout the research process.

### **Participants**

Participants were individuals aged 60 years and older who had undergone intra-articular injection of mesenchymal stem cells for osteoarthritis within the past six months. Selection was based on purposive sampling to ensure the inclusion of those with rich, relevant experiences related to the phenomenon under investigation. Inclusion criteria comprised cognitive clarity, the ability to communicate effectively in the local language, and having completed the therapy without significant post-procedural complications (Oberkampf dkk., 2023). Individuals with comorbid psychiatric conditions, ongoing participation in other clinical trials, or advanced neurodegenerative diseases were excluded. The final sample consisted of eight participants (4 females and 4 males), with a mean age of 66.5 years. All participants had diverse socio-economic backgrounds and reported varying durations of osteoarthritis symptoms prior to treatment.

### **Data Collection**

Data were collected through in-depth, semi-structured interviews using an interview guide developed specifically for this study. The interviews were conducted face-to-face in a private and comfortable clinical setting affiliated with a regenerative medicine center. Each session lasted between 45 and 70 minutes and was audio-recorded with the participants' consent. Open-ended questions were used to facilitate deep reflection, allowing participants to share their thoughts, feelings, and perceptions freely (Peng dkk., 2019). Follow-up probes were used as needed to clarify or deepen responses. To ensure data richness and minimize environmental stressors, interviews were scheduled at times most convenient to participants. Field notes were also taken to capture non-verbal expressions and contextual information.

### **Data Analysis**

Data were analyzed using Colaizzi's method of descriptive phenomenological analysis. This process involved several systematic steps: transcription of audio-recorded interviews, repeated reading for familiarization, extraction of significant statements, formulation of meanings, clustering into themes, and construction of an exhaustive description. Each meaning unit was carefully coded and categorized using qualitative data analysis software (NVivo) to support the organization and retrieval of data (Popmihajlov dkk., 2022). The analytical process focused on preserving the authenticity of participants' narratives while identifying recurring themes that represent the fundamental structure of their lived experiences. Final themes were validated by returning to the original data and seeking congruence between interpretation and participant expression.

### **Ethical Considerations**

Ethical approval for the study was obtained from the relevant institutional review board. All participants provided written informed consent prior to participation. Confidentiality was maintained by assigning anonymized codes to each transcript and removing identifying information. All procedures adhered to the principles outlined in the Declaration of Helsinki and complied with local ethical regulations concerning research involving human subjects.

## **RESULTS**

### **Regaining Lost Independence**

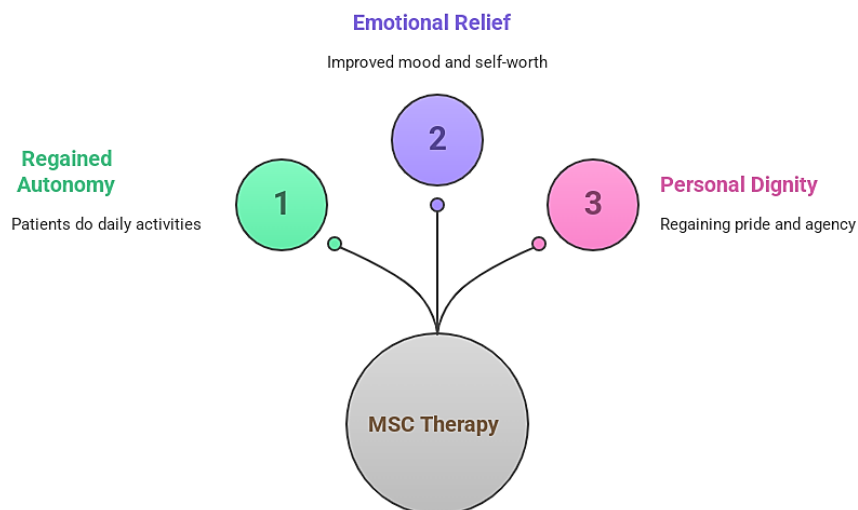
Participants described a profound shift in their sense of autonomy following MSC therapy. Many spoke about regaining functional ability, particularly in basic daily activities, which had previously been hindered by chronic pain and stiffness. The restoration of independence was not only physical but deeply intertwined with emotional relief and personal dignity.

“After the third week, I could walk to the kitchen without help. I hadn't done that in years... I felt human again.” (Participant 3)

“It wasn't just about the knee pain going down. I could go to the mosque on my own, and that gave me back my pride.” (Participant 7)

This theme underscores how therapeutic outcomes were evaluated by participants not in clinical metrics, but in terms of personal agency and regained self-worth.

### **MSC Therapy Restores Patient Independence**



### Emotional Relief and Psychological Rebirth

The emotional dimension of participants' experience was particularly striking. Patients frequently referred to a "renewal of hope" and emotional "rebirth," marking a transition from despair to optimism. The alleviation of pain allowed emotional clarity and even spiritual reflection.

"I had lived with disappointment for so long... this therapy made me believe again—not just in medicine, but in myself." (Participant 5)

"Each step I took without pain felt like a miracle. It was as if the dark cloud over my life had lifted." (Participant 1)

This emotional resurgence appeared to be more than an effect of physical healing—it emerged as a transformation of self-perception, affecting how participants engaged with the world and envisioned their future.

### Ambivalence Toward Scientific Innovation

Although most participants expressed gratitude for the regenerative therapy, there was a recurring theme of ambivalence and cautious optimism. Some voiced anxiety over the novelty of the treatment, with concerns about long-term effects and financial accessibility.

"It felt like I was part of an experiment... a good one, but still, I wondered—what if it doesn't last?" (Participant 4)

"This treatment helped me, yes, but it's expensive. I worry about others who need it but can't afford it." (Participant 6)

These reflections revealed a nuanced perception of regenerative therapy—not as a miracle cure, but as a hope-laden innovation that also carried ethical and practical concerns in the patients' minds.

### Shifting Family Dynamics and Social Reintegration

As physical mobility improved, participants described a re-negotiation of their roles within the family and community. They began to resume responsibilities, re-engage socially, and feel less burdensome.

"My daughter no longer had to bathe me. That changed everything between us." (Participant 2)

"Neighbors started inviting me again to community meetings. I felt like I belonged once more." (Participant 8)

This reintegration highlighted how therapeutic benefits extended beyond the individual, influencing familial and societal relationships. Recovery was experienced not just within the body, but within a broader social fabric.

The essence of the participants' experience with MSC therapy lies in the interplay between physical improvement and psychological empowerment. While the therapy alleviated physical pain, its deeper impact was seen in how patients redefined their identity, restored social roles, and reclaimed autonomy. These narratives provide a compelling rationale for incorporating subjective experiences into clinical evaluations of regenerative therapies.

## **DISCUSSION**

The findings of this study reveal that elderly patients undergoing mesenchymal stem cell (MSC) therapy for advanced osteoarthritis experience healing as a multidimensional process—encompassing physical relief, emotional renewal, and social reintegration (Pratumkaew dkk., 2021). These outcomes offer rich insight into the essence of recovery as perceived by individuals who have lived through the transformative process of regenerative intervention. These insights respond directly to the core research question regarding how such patients perceive and give meaning to their therapeutic journey, emphasizing that recovery is not merely clinical improvement, but an experiential reconstitution of selfhood, agency, and belonging.

The study contributes a distinctive understanding of the patient experience by illustrating that therapeutic success, from the patients' perspective, extends beyond biological repair. The return of independence, emotional upliftment, and re-engagement in social roles were not secondary outcomes but central to how patients defined recovery. These findings suggest that regenerative therapy is not merely a biomedical intervention but a deeply personal event that reshapes identity, dignity, and self-perception. The voices captured in this research validate the need for clinicians and healthcare systems to integrate subjective experiences into assessments of therapeutic effectiveness.

In relation to existing literature, the current findings align with studies emphasizing the psychosocial dimensions of chronic illness management and patient-centered care (Protiere dkk., 2020). However, this study expands previous work by focusing specifically on the elderly, a group often underrepresented in qualitative health research, and by applying a rigorous phenomenological approach. It complements earlier research that highlights emotional uncertainty in regenerative treatment (Riva dkk., 2019), while contributing a deeper narrative of hope, agency, and redefinition of self among patients. The thematic resonance with humanistic theories of healing supports the interpretation that meaning-making is intrinsic to how individuals adapt to and evaluate medical innovation.

### **Implications of the Findings**

The results of this study carry significant implications for both clinical practice and the broader sociocultural understanding of healing among elderly individuals. By highlighting how patients define their recovery through emotional relief, renewed independence, and reintegration into social spaces, the findings advocate for a more holistic framework in evaluating therapeutic outcomes. In a clinical context, this necessitates a shift toward patient-centered assessments that integrate subjective experiences as a complement to objective clinical markers (Seguro dkk., 2021). Culturally, the restoration of dignity and social roles reflects the importance of interdependence and community identity among older adults, particularly in societies where aging is often associated with marginalization. These insights reinforce the value of tailoring regenerative care strategies to align with the lived realities of patients, fostering not just biomedical recovery, but also psychological and social well-being.

### **Study Limitations**

As with all qualitative inquiries, the findings of this study are contextually bound and not intended for broad generalization. The sample size, though adequate for phenomenological depth, was limited to a specific population segment within a single clinical setting. Participants were

predominantly from similar cultural and linguistic backgrounds, which may influence how experiences were articulated and interpreted. Moreover, while the use of semi-structured interviews enabled rich data collection, the absence of longitudinal follow-up limits insight into how experiences evolve over time (Xulu & Augustine, 2021). These limitations underscore the need for cautious interpretation and serve as a reminder that phenomenological research seeks depth of meaning rather than statistical generality.

### **Future Research Directions**

Building upon these findings, future research could expand the inquiry by incorporating more diverse demographic groups and cross-cultural contexts to explore how meanings of recovery vary across social environments (Rosina dkk., 2021). Longitudinal designs may further enrich understanding by tracing changes in patients' perceptions over time as they navigate life post-treatment. Additionally, integrating phenomenological methods with other qualitative approaches, such as narrative or ethnographic inquiry, may offer a more nuanced portrayal of the regenerative experience. These future directions have the potential to inform more responsive care models and shape policies that better honor the complexity of patient experience in advanced therapeutic settings.

### **CONCLUSION**

This study explored the lived experiences of elderly patients who underwent mesenchymal stem cell therapy for advanced osteoarthritis, emphasizing recovery as perceived beyond clinical outcomes. The findings revealed that patients experienced healing as a multidimensional process involving regained independence, emotional renewal, and social reintegration. These insights provide a deeper understanding of patient-centered recovery and address the limitations of previous research that overlooked subjective dimensions. By applying a descriptive phenomenological approach, this study offers a rich, contextualized account of how regenerative therapy influences patients' identities and quality of life. The results underscore the need for integrating experiential perspectives into clinical evaluations and healthcare planning. Future studies may expand this inquiry across diverse populations and settings to further refine patient-centered regenerative care.

### **CONFLICT OF INTEREST**

The authors declare no conflict of interest. This research was conducted independently, and the funding sponsor had no involvement in the study design, data collection, analysis, interpretation, manuscript writing, or decision to publish the findings.

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