

Factors Influencing Decision-Making and Rehabilitation Among Older Women Who Underwent Total Knee Replacement: A Qualitative Study in Taiwan

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Purpose: To explore the factors influencing decision-making and the rehabilitation experiences of older women who underwent total knee replacement (TKR).

Methods: A qualitative descriptive design with purposive sampling was employed. Women aged over 60 who had undergone TKR at a medical center in northern Taiwan were recruited during COVID-19 pandemic. Data were collected through two rounds of face-to-face interviews (3–5 days and 6–8 weeks post-surgery) and a follow-up telephone interview conducted 6 months after surgery. Thematic analysis was performed using a constant comparative approach.

Results: Twenty women participated. A central theme—reclaiming independent life through surgical transformation—emerged, encompassing two interrelated themes: (1) Decision-making factors were driven by pain, external concerns (becoming a burden on the family, body image change), dissatisfaction with conservative treatments, and the influence of significant others (physicians, families and friends, peers); (2) Surgical recovery involved striving to achieve the “rehabilitation golden phase” by enduring pain, establishing personal goals, and working toward functional recovery, while managing “challenges in home-based rehabilitation” through coping strategies and social support, and engaging in “post-surgical reflections” to assess pain relief and identify levels of functional recovery.

Conclusion: Older women perceived TKR to regain mobility, autonomy, and reduce dependence on family members. Their decisions reflected the interplay between physical suffering and cultural expectations. Despite rehabilitation challenges, participants demonstrated resilience and strong motivation for recovery. These findings emphasize the importance of gender-sensitive, patient-centered decision-support strategies and family-inclusive, culturally responsive rehabilitation care.

Keywords: total knee replacement, older women, decision-making, patient preference, rehabilitation, qualitative research

Introduction

Osteoarthritis (OA) is the most prevalent joint disorder and a leading cause of pain, disability, and loss of independence among older adults.¹ OA is a chronic, progressive condition characterized by degeneration of articular cartilage, remodeling of subchondral bone, osteophyte formation, and varying degrees of synovial inflammation.^{2–4} These changes result in chronic pain, joint stiffness, and limited mobility, substantially diminishing quality of life.^{4–6} The knee is the most affected weight-bearing joint, making knee OA particularly disabling.^{4–6} Epidemiological studies indicate that knee OA contributes significantly to global musculoskeletal disability, often leading to early retirement, increased healthcare utilization, and higher socioeconomic costs.⁷

Management typically follows a staged approach. Conservative treatments—such as pharmacologic therapy, rehabilitation, and lifestyle modification—aim to relieve pain and preserve mobility.^{4,5,8} When these measures fail, total knee replacement (TKR) is regarded as the most effective and cost-efficient surgical intervention, providing substantial pain relief and functional restoration for most patients.^{4–6} Despite its benefits, the decision to undergo TKR is complex, particularly for older adults, as biological, psychological, and social factors intersect.⁹ Motivation and psychological readiness influence adherence to postoperative rehabilitation and recovery outcomes, including pain reduction, mobility, and daily functioning.^{9–11} Postoperative satisfaction typically depends on pain relief and functional recovery; however, multiple clinical and psychosocial factors influence these outcomes.¹²

In Taiwan, TKR is widely performed under the National Health Insurance (NHI) system, which ensures equitable access to surgical care.^{13–16} The annual number of procedures has tripled over two decades, with women accounting for nearly 70% of all cases.¹⁶ While most existing studies emphasize clinical outcomes or rehabilitation effectiveness, limited qualitative research has examined the entire trajectory from surgical decision-making through postoperative recovery.^{17–21} This study therefore aimed to (1) identify factors influencing older women's preferences and decisions to undergo TKR, and (2) explore their perceptions and engagement in the rehabilitation process.

Methods

Study Design

A qualitative descriptive design was adopted to explore patient preferences, treatment decisions, and rehabilitation experiences in real-world cultural contexts.^{22,23} In-depth, semi-structured interviews were used to interpret the subjective meanings participants assigned to their experiences, providing a comprehensive understanding of the phenomenon. Each participant completed two interviews addressing decision-making and post-rehabilitation experiences, with follow-up telephone interviews conducted to clarify individual perspectives on home-based recovery satisfaction. Grounded Theory guided inductive data analysis²⁴ while Symbolic Interactionism informed the interpretation of how women constructed meaning around surgical decisions and rehabilitation.²⁵

Setting and Participants

Participants were recruited purposively from the orthopedic ward of a medical center in northern Taiwan, where 338 patients underwent TKR in 2018 (76% women, 67% aged ≥ 60 years). Eligible participants were: (1) women aged 60 years or older, (2) who had undergone a primary unilateral TK, and (3) able to communicate in Mandarin Chinese. Exclusion criteria included: (1) a diagnosis of mental illness, (2) dementia, (3) bilateral TKR, or (4) revision TKR.

Data Collection

Data were collected between September 2020 and May 2021, during the COVID-19 pandemic, through interviews, observations, and field notes. No non-participants were present during the interviews. Each interview was conducted privately with only the participant and the interviewer in the room. This approach minimized external influence on participants' responses and ensured privacy, comfort, and the authenticity of the data collected. Each participant completed two face-to-face interviews (3–5 days post-surgery; 6–8 weeks post-surgery) and a follow-up telephone interview at 6 months. A semi-structured guide encouraged open discussion (eg, “Can you describe your experience with knee problems before surgery? “How has your condition progressed since returning home?” How would you evaluate satisfaction with the outcome of surgery?) All interviews were audio-recorded, transcribed verbatim, and supplemented by field notes. Recruitment continued until the twentieth participant, at which point thematic saturation was achieved.

Data Analysis

The data were analyzed using the constant comparative method, which involved the sequential processes of open coding, axial coding, and selective coding.²⁴ During analysis, open coding generated initial codes such as “limited mobility,” “concern about burdening family,” “encouragement from others,” and “enduring pain for recovery.” Axial coding then grouped these into broader categories reflecting the themes in Table 1—for example, codes related to mobility

Table I Core Themes, Themes, Sub-Themes, and Categories Derived from Women's Experiences of TKR

Core Theme	Theme	Sub-Theme	Categories	Quotations
Reclaiming independent life through surgical transformation	Decision-making factors	Pain impacts	Limited mobility	When I walked, it hurt — my joints ached. After walking for a while, I could feel friction in the joints. The more I walked, the more I limped and the weaker I became.
			Inability to handle work demands	I had to prepare things like offerings and supplies for the migrant workers during the Lunar New Year, and my legs felt so heavy that I had to drag them as I walked.
			Interruption in daily social activities	I used to go out with people from the community, but after my legs started hurting.... I stopped going out and preferred staying at home.
			Sleep disturbances	The pain was bad, especially at night. Sometimes it hurt so much that I could not straighten my legs, and sometimes I even woke up from the pain
		External concerns	Concern about becoming a burden on the family	I did not want to lose my mobility. You knew my family's situation at that time.... if I had not been able to move around easily, it would have caused trouble.
			Worry about body image change	I really looked worse than they did. Honestly, I did not want my neighbors to see me limping like that. It felt terrible... my legs were deformed, and I truly had no sense of dignity.
		Dissatisfaction with conservative therapy	Compliance with conservative therapy	I had gone to the clinic for hyaluronic acid injections, but the effect was poor. I had also gone to the clinic for pain relief injections when the pain became severe.
			Attempts with alternative therapy	I went for acupuncture, but it did not work. The acupuncture path was not right either. Later, I also tried "muscle kneading," which is like traditional Chinese therapy.
		Influence of significant others	Physician's advice	The doctor told me that the degeneration in my left knee was very severe, and if I did not have surgery, I would continue to fall easily in the future." The orthopedic doctor said that my condition was due to degeneration and wear and recommended that I undergo surgery to replace the joint with an artificial knee."
			Encouragement from families and friends	Before, my pain was unbearable, and my daughter-in-law could not stand to see me suffer, so she encouraged me to have the surgery.
			Successful patients' experiences	Whenever customers or elderly women came by, I asked them everything I could. I kept asking more, as if I were preparing myself for the surgery." "He (referring to my neighbor who had the surgery) said, "The pain was gone after just two days. Why are you still afraid to have the surgery?"

(Continued)

Table I (Continued).

Core Theme	Theme	Sub-Theme	Categories	Quotations
	Surgical recovery	Rehabilitation golden Phase	Endure pain with determination	[Bending the knee] is very painful, like it's being cut, very swollen. On the first day after surgery, the leg was so swollen that I could not move it at all.
			Establish personalized rehabilitation goals	"My daughter took pictures of the six exercises my physiotherapist taught me. When I am unsure, I look at them myself, and my daughter helps set the time for each exercise. I follow the rehabilitation chart and the mobile phone prompts to switch to the next exercise."
			Work toward functional recovery	Because of my current workplace, I only took 3 months off. So, I need to become functional enough to go back to work as soon as possible. I must get well before I can go back home as soon as possible.
		Home-based rehabilitation challenges	Explore methods to alleviate discomfort	After rehabilitation, the tendons are softer, but if I overexert myself, inflammation occurs. I need to use cold compresses. I also take herbal medicine by boiling it into a drink. It's mainly for reducing swelling.
			Devise innovative rehabilitation strategies	In our home, the stair railing is made of wood. It would help if you pressed down on it like this, and it's like pressing down on your knee. I also used the bed, sometimes placing something like a blanket or something soft, and then I kneel on it like this.
			Seek support from others and facilities	My daughter encouraged me to rent the machine. Since it operates at a gentler pace, I have noticed that occasionally, after using the machine, I feel greater comfort when I move independently.
		Post-surgical reflections	Assess pain relief	Although there was still some residual pain in my right knee, there has been a noticeable improvement.
			Identify functional recovery	I was hesitant to return to the hospital. Nevertheless, my knee function is currently satisfactory.

restrictions, work limitations, and disrupted sleep were organized under “pain impacts,” while codes describing determination, goal setting, and creative home-based strategies formed “rehabilitation challenges.” Selective coding integrated these categories into the core theme of “reclaiming independent life through surgical transformation.” To ensure consistency, two analysts independently coded transcripts and compared interpretations, resolving differences through discussion and confirmation of category definitions, with peer debriefing used to reach consensus on the final thematic structure.

Rigor

The study’s rigor was evaluated using Lincoln and Guba’s four criteria for trustworthiness.²³ The first female author (CHH), a master’s-level nurse with two decades of orthopedic experience and formal qualitative research training, conducted all interviews to ensure depth and consistency. Credibility was established through prolonged engagement (CHH), member checking, and data triangulation across interviews, observations, and field notes. Peer debriefings with experienced qualitative researchers (SWC, and MHL) provided critical reflection on coding, interpretation, and thematic coherence, thereby enhancing analytic transparency. Dependability and confirmability were ensured through systematic documentation, data verification, and an audit trail jointly reviewed by CHH and SWC. Transferability was supported by detailed contextual and methodological descriptions, allowing readers to assess the applicability of findings to comparable clinical and cultural settings.

Results

The study includes 20 older women aged 60–84 years (mean = 70.1), all recruited from a single medical center in northern Taiwan. Most participants were married or widowed (90%) and identify with Taoism or Buddhism (100%). The majority had primary or secondary education (80%) and were retired or engaged in domestic work (70%) (Table 2). Analysis of their narratives revealed a core themes: reclaiming independent life through surgical transformation. The core

Table 2 Demographic Characteristics of Older Women (N = 20)

ID	Age	Education	Occupation	Marital Status	Religion	Surgery Side	Duration of Pain
A	66	Illiterate	Farmer	Widowed	Taoism	Right	5–6 years
B	65	Elementary school	Retired	Widowed	Taoism	Right	10 years
C	72	High school	Retired	Widowed	Taoism	Right	3 years
D	73	Illiterate	Retired	Widowed	Taoism	Right	3–4 years
E	72	Elementary school	Unemployed	Unmarried	Taoism	Left	>10 years
F	60	High school	Retired	Widowed	Buddhism	Right	7–8 years
G	64	Elementary school	Retired	Widowed	Buddhism	Right	> 1 year
H	67	Elementary school	Housewife	Married	Taoism	Right	5–6 years
I	84	Junior high school	Housewife	Married	Taoism	Left	3–4 years
J	73	Junior high school	Retired	Married	Buddhism	Left	12 years
K	60	High school	Housewife	Married	Buddhism	Right	9 months
L	67	High school	Administrative staff	Married	Taoism	Right	7–8 months
M	62	High school	Service industry	Unmarried	Taoism	Right	10 years

(Continued)

Table 2 (Continued).

ID	Age	Education	Occupation	Marital Status	Religion	Surgery Side	Duration of Pain
N	82	Illiterate	Housewife	Widowed	Taoism	Left	10 years
O	83	Illiterate	Business	Widowed	Taoism	Left	5 years
P	69	Elementary school	Retired	Widowed	Taoism	Left	10 years
Q	75	Elementary school	Unemployed	Married	Taoism	Right	10 years
R	65	High school	Retired	Married	Taoism	Right	2 years
S	79	Elementary school	Retired	Widowed	Buddhism	Right	5 years
T	64	Elementary school	Retired	Married	Taoism	Right	>10 years

theme reflected how physical, psychosocial, and cultural factors shaped women's decision-making and recovery experiences following TKR (Table 1).

Theme 1: Decision-Making Factors

After receiving a diagnosis of OA, the participating women experienced prolonged struggles before deciding to undergo TKR, with the duration ranging from seven months to twelve years. During this period, they lived with persistent pain and sought various nonsurgical treatments to alleviate their discomfort and delay surgery.

Pain Impacts

Persistent pain and stiffness interfered with their ability to fulfill work responsibilities, engage in social activities, and maintain regular sleep patterns.

E: When I walked, it hurt — my joints ached. After walking for a while, I could feel friction in the joints. The more I walked, the more I limped and the weaker I became. (limited mobility)

L: I had to prepare things like offerings and supplies for the migrant workers during the Lunar New Year, and my legs felt so heavy that I had to drag them as I walked. (inability to handle work demands)

L: I used to go out with people from the community, but after my legs started hurting.... I stopped going out and preferred staying at home. (interruption in daily social activities)

G: The pain was bad, especially at night. Sometimes it hurt so much that I couldn't straighten my legs, and sometimes I even woke up from the pain. (sleep disturbances)

External Concerns

Beyond the physical challenges of knee OA, the women also experienced external concerns that influenced their decision-making regarding surgery.

Concern About Becoming a Burden on the Family

As knee OA progressed, many women struggled to maintain their caregiving roles at home. Worsening pain and reduced mobility heightened their fear of burdening family members. Valuing self-reliance, they chose TKR to regain independence and ease their families' caregiving responsibilities.

B: I hoped my leg would recover so that I could walk around freely without restrictions. I wanted to get better quickly and not become a burden to my children.

M: I didn't want to lose my mobility. You knew my family's situation at that time.... if I hadn't been able to move around easily, it would have caused trouble.

Worry About Body Image Change

Women were distressed by the visible deformity and limping caused by knee OA, which undermined their confidence and sense of normalcy. They viewed TKR to correct alignment, restore appearance, and regain functional mobility.

K: I really looked worse than they did. Honestly, I did not want my neighbors to see me limping like that.

R: It felt terrible... my legs were deformed, and I truly had no sense of dignity.

Dissatisfaction with Conservative Therapy

Despite trying various nonsurgical and alternative treatments to relieve pain and maintain daily function, most women experienced only temporary relief. Their growing dissatisfaction with conservative care strengthened their resolve to pursue surgery as a definitive solution.

Compliance with Conservative Therapy

Many women actively sought medical care across clinics and hospitals, adhering to professional recommendations and undergoing multiple conservative treatments, including medications, physical therapy, and injections such as steroids, hyaluronic acid, or platelet-rich plasma (PRP).

F: I had gone to the clinic for hyaluronic acid injections, but the effect was poor. I had also gone to the clinic for pain relief injections when the pain became severe.

H: I spent about fifty thousand dollars on PRP injections, but they were ineffective. I still felt very uncomfortable.

Attempts with Alternative Therapy

Before deciding on surgery, most women sought relief through alternative therapies, including traditional Chinese medicine, massage, acupuncture, and health supplements. Although these methods occasionally provided temporary comfort, the improvements were short-lived and insufficient to restore normal function.

F: I had first tried acupuncture and visited a traditional Chinese medicine doctor. Each course of treatment lasted quite a long time because I thought I needed to keep it up to get better. The longest one lasted for more than three years before I eventually had the surgery.

L: I went for acupuncture, but it didn't work. The acupuncture path wasn't right either. Later, I also tried 'muscle kneading,' which is like traditional Chinese therapy. It's like when a certain area hurts or is injured, they press it hard—it hurt so much, as if my flesh was being pinched.

Influence of Significant Others

The women's decisions to undergo TKR were shaped by the influence of significant others, including physicians, family members, friends, and other patients who had previously undergone the procedure.

Physician's Advice

Physicians played a critical role in shaping women's surgical decisions. Their clear explanations and professional reassurance reduced fear and uncertainty, strengthening women's confidence in choosing surgery.

G: The doctor told me that the degeneration in my left knee was very severe, and if I didn't have surgery, I would continue to fall easily in the future.

I: The orthopedic doctor examined me and said that my condition was due to degeneration and wear and recommended that I undergo surgery to replace the joint with an artificial knee.

Encouragement from Families and Friends

Encouragement from family and friends played a vital role in women's decisions to undergo TKR. Family members offered emotional reassurance and practical support, while peers who had successfully recovered from surgery shared positive experiences that reduced fear and strengthened confidence.

B: My daughter told me that the hospital had good infection control, so she told me not to worry. I thought since I had already decided to have the surgery, I should just do it soon and recover quickly.

C: Before, my pain was unbearable, and my daughter-in-law couldn't stand to see me suffer, so she encouraged me to have the surgery.

Successful Patients' Experiences

Women gained reassurance about TKR's effectiveness by observing other patients who successfully managed pain, completed rehabilitation, and regained mobility in daily life.

F: Whenever customers or elderly women came by, I asked them everything I could. I kept asking more, as if I were preparing myself for the surgery.

O: He (referring to my neighbor who had the surgery) said, 'The pain was gone after just two days. Why are you still afraid to have the surgery?' His surgery went well. Now he can walk without using an umbrella for support.

In contrast, observing those who faced complications or slower recovery prompted more cautious consideration. Overall, learning from other patients' outcomes provided realistic expectations and strongly influenced the women's decision to proceed with TKR.

A: There was an elderly woman in my village who went back to work in the fields right after her surgery. As a result, she couldn't walk afterward. I didn't know whether it was because she didn't do rehabilitation.

C: When I went to the family medicine clinic, I saw an elderly woman, probably in her eighties. Her mind was very clear, but she couldn't walk. It took her more than five minutes to walk a very short distance.

Theme 2: Surgical Recovery

Women demonstrate strong determination to restore mobility and independence following TKR.

Rehabilitation Golden Phase

Following TKR, the women actively monitored their postoperative recovery and strived to maximize outcomes during the critical "golden phase" of rehabilitation.

Endure Pain with Determination

During the early postoperative phase, women commonly experienced acute symptoms such as heaviness in the legs, limited knee mobility, and restricted joint extension. Despite these challenging discomforts, the women persevered and endured the pain.

G: It is like you are better off dead, very painful. I pressed that, kept pressing it, and it was still excruciating. You can't straighten it, can't lift it high, it just hurts.

L: [Bending the knee] is very painful, like it's being cut, very swollen. On the first day after surgery, the leg was so swollen that I couldn't move it at all.

Establish Personalized Rehabilitation Goals

The women diligently adhered to their post-TKR personal rehabilitation plans, performing various exercises such as soon

as it was tolerable. Whether independently or with assistance, they followed a structured approach to maximize the effectiveness of their rehabilitation.

C: My daughter took pictures of the six exercises my physiotherapist taught me. When I'm unsure, I look at them myself, and my daughter helps set the time for each exercise. I follow the rehabilitation chart and the mobile phone prompts to switch to the next exercise.

J: "Whatever my daughter asks me to do; I just do it. She even showed me information on how to rehabilitate, and she guides me while I'm doing it.

Work Toward Functional Recovery

After undergoing TKR, the women were motivated to regain knee function and resume their normal daily activities or work responsibilities. They demonstrated strong determination to restore joint mobility and strength, viewing functional recovery as both a personal goal and an indicator of surgical success.

M: Because of my current workplace, I only took 3 months off. So, I need to become functional enough to go back to work as soon as possible.

N: I must get well before I can go back home as soon as possible. It doesn't matter if I don't (bend my knees) 90°. I'm 84 years old. What am I afraid of? I can walk, I can sit, I can. (Benchmark: Sit and walk)

Home-Based Rehabilitation Challenges

After home, women faced added challenges to home-based rehabilitation, including limited outpatient access, fear of infection, and lack of supervision. Persistent pain, stiffness, and uncertainty about proper exercise techniques caused stress, yet they remained adaptable—developing self-care strategies, modifying routines, and seeking family or professional support when possible.

Explore Methods to Alleviate Discomfort

At home, women independently managed knee pain, swelling, and stiffness by using hot or cold compresses, adjusting posture, and modifying their diet. Some also turned to traditional or folk remedies, such as herbal drinks or talisman-infused water, to relieve discomfort.

A: After rehabilitation, the tendons are softer, but if I overexert myself, inflammation occurs. I need to use cold compresses.

P: I use aloe vera—the inner layer, not the outer layer. I use the inner layer for compresses. I also take herbal medicine by boiling it into a drink. It's mainly for reducing swelling.

Devise Innovative Rehabilitation Strategies

Some women adapted their home environments to facilitate knee rehabilitation, seamlessly integrating these changes into their daily routines.

H: In our home, the stair railing is made of wood. It would help if you pressed down on it like this, and it's like pressing down on your knee. I also used the bed, sometimes placing something like a blanket or something soft, and then I kneel on it like this.

Seek Support from Others and Facilities

Among the women in this study, eight managed their care, four received support from their husbands, their children assisted seven, and one participant received support from her brother. Some women embraced suggestions from family and enlisted the help of loved ones to identify the most effective rehabilitation methods.

M: My daughter encouraged me to rent the machine. Since it operates at a gentler pace, I've noticed that occasionally, after using the machine, I feel greater comfort when I move independently.

B: I started practicing by holding onto the doorknob and doing squats, although I still needed to be able to squat.

In the absence of family support, one participant opted to utilize a caregiver through Long-Term Care Service 2.0 to aid her in her daily activities and facilitate her rehabilitation.

D: I've applied for a three-hour caregiver [referring to the Long-Term Care Service 2.0 program] who comes once a week. She assists me with bathing and lifting my legs like this.

Some participants incorporated home-based rehabilitation practices alongside regular visits to local healthcare facilities for additional support.

A: I can bend it like this [approximately 90 degrees]. So, I started rehabilitation. My granddaughter drove me to the rehabilitation department of the hospital. The therapist teacher helps me bend it.

E: I go to the rehabilitation clinic daily, and my younger brother helped me bend my leg thrice daily. Six weeks post-surgery, I felt that my rehabilitation was progressing well on my own, so I stopped going to the clinic for rehabilitation.

Post-Surgical Reflections Outcomes

Six months after TKR, about two-thirds of participants reflected improved rehabilitation outcomes, ranging from “extremely satisfied” to “satisfied,” while the remainder felt neutral. Pain relief and functional recovery were the primary indicators used to evaluate rehabilitation effectiveness.

Assess Pain Relief

One woman underwent surgery on her left knee five years before and subsequently required TKR revision on the same knee.

H: Although there is still some residual pain in my right knee, there has been a noticeable improvement.

Another woman had prior surgery on her left knee and, after two years, opted for surgery on her right knee.

T: Approximately a year after the operation, the intensity of the pain lessened.

Identify Functional Recovery

One woman underwent surgery on her right knee, followed by surgery on her left knee two years later. She noted a significant improvement in the outcome after the more recent surgery on her left knee.

H: Despite some lingering numbness in my knee, it has considerably improved compared to the intense pain I endured while walking. I had a realistic understanding of the condition of my knee joint prior to the surgery, and I am content with the results.

Another woman underwent TKR on her left knee and, six months later, had surgery for colorectal cancer. She prioritized addressing the colorectal cancer first and deferred the operation on her right knee. She mentioned that her left knee exhibited good mobility and functionality.

P: Given the worsening state of the epidemic, I am hesitant to return to the hospital. Nevertheless, my knee function is currently satisfactory.

Discussion

This qualitative study explored how older Taiwanese women decided to undergo TKR and engaged in rehabilitation. Findings have revealed that surgical decisions are shaped by the interplay of physical suffering, cultural expectations, and family dynamics, while recovery experiences reflect resilience and a desire to regain independence. Interpreted through the Theory of Planned Behavior (TPB),²⁶ women's attitudes, subjective norms, and perceived behavioral control (PBC) collectively influenced their choices and behaviors.

Decision-Making Factors

Women's decisions to undergo TKR are primarily motivated by severe pain, restricted mobility, and loss of independence. Their attitudes toward surgery are influenced by expectations of pain relief, restored function, and the ability to continue fulfilling familial and social roles. Consistent with earlier studies, women initially rely on conservative and traditional therapies before considering surgery.^{27–29} This preference for noninvasive care reflects East Asian health beliefs emphasizing gradual intervention and bodily preservation. Subjective norms are shaped by Chinese sociocultural values grounded in Confucian filial piety and collectivist family orientation,^{30,31} where maintaining autonomy and avoiding dependence on family are regarded as moral expectations for older adults. Many women concern about burdening their children and view surgery as a way to preserve self-sufficiency and family harmony. External influences—including physician advice, family encouragement, and positive peer experiences—reinforce surgical intentions, whereas negative examples are often dismissed as isolated cases.^{32–35} PBC is strengthened by women's confidence in performing TKR through supportive family involvement and by observing successful surgical outcomes of previous patients, which enhance their sense of agency and optimism.

Rehabilitation After TKR

Following surgery, women demonstrate strong determination to engage in rehabilitation, reflecting high self-efficacy and PBC.³⁶ Reclaiming independences through rehabilitation *emerges as a central theme*, as participants set personalized goals shaped by their social roles and expectations. Caregivers prioritize resuming domestic responsibilities, while working women focus on faster recovery and greater knee flexion, illustrating diverse expressions of self-efficacy. These findings align with prior evidence identifying self-efficacy as a determinant of adherence, physical recovery, and psychological well-being.^{37–39}

In Taiwan, women participate in both home-based rehabilitations, supported by family members and self-directed strategies, and facility-based programs funded by the NHI, which offer structured follow-up and professional guidance.³⁷ This dual rehabilitation system enables women to balance culturally embedded caregiving responsibilities, empowerment, and ongoing medical supervision. International evidence similarly indicates that home-based or tele-rehabilitation after TKR achieves long-term outcomes in pain relief, mobility, and function comparable to those of hospital-based programs, with home-based approaches sometimes promoting faster improvements in range of motion.^{40,41} Approximately six months after surgery, most women report improved rehabilitation outcomes and satisfaction with recovery.

The cultural dynamics identified in this study have potential transferability to other East Asian societies where Confucian family ethics, collectivist values, and filial responsibility similarly shape health-related decision-making.^{30,31} In these contexts, older women often perceive surgery and rehabilitation not only as medical acts but as moral responsibilities to remain independent and reduce family burden. Comparable findings have been reported in Asian country of Japan, South Korea, and China, where intergenerational expectations influence treatment choices and recovery engagement.^{27–29,38,42}

Clinical Implications

This study highlights the importance of culturally responsive and patient-centered care throughout the TKR decision-making and rehabilitation process. Guided by the TPB, clinical interventions should enhance PBC through self-management support, strengthen positive attitudes by providing evidence-based education on surgical outcomes, and integrate subjective norms by engaging family members in SDM. Healthcare professionals—particularly nurses, rehabilitation specialists, and case managers—play a pivotal role in implementing these strategies. Interprofessional collaboration ensures continuous guidance and psychosocial support from preoperative counseling through home- and facility-based rehabilitation. Case managers should maintain ongoing follow-up to monitor patients' progress, reinforce adherence, and address emerging barriers to recovery.

Tailored rehabilitation plans that integrate patients' cultural beliefs and traditional healing practices can further strengthen motivation and adherence. Taiwan's NHI supported dual rehabilitation model exemplifies how hospital-based and home-

based programs can coexist to promote continuity of care. This approach may serve as a reference for other East Asian healthcare systems seeking to balance accessibility, family participation, and culturally attuned recovery support.

Limitations

This study was conducted at a single medical center and involved only older female participants, which limits the generalizability of the findings. Although data collection extended to six months post-surgery, longer-term outcomes remain unexplored. Future research, including studies involving male participants, diverse settings, and extended follow-up periods, is recommended to capture broader gender and cultural perspectives on decision-making and rehabilitation after TKR.

Conclusions

Older Taiwanese women's decisions to undergo TKR reflect the interplay of physical pain, loss of mobility, and cultural expectations surrounding autonomy and family roles. Their choices balance enduring discomfort with the desire to maintain independence, shaped by interactions with physicians, family members, and peers. During rehabilitation, women demonstrate resilience and motivation to restore mobility, supported by both family and healthcare professionals. Although some integrate traditional practices, most adhere to structured exercise and medical guidance to regain daily function. These findings underscore that women's TKR experiences encompass both physical and sociocultural dimensions. Targeted, family-inclusive, and culturally sensitive support—combined with continuous case manager follow-up—can strengthen adherence, promote recovery, and enhance quality of life.

Ethics Approval and Informed Consent

The study was conducted in accordance with the Declaration of Helsinki (as was revised in 2013). Ethical approval was obtained from the Institutional Review Board of National Taiwan University Hospital (Approval No.: 202009031RINA). Participants provided written informed consent, which included permission for the publication of anonymized responses and direct quotations.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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