Lived Experiences of Clients with Total Knee Replacement Residing in Kathmandu

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ABSTRACT

Introduction: Total Knee Replacement (TKR) is increasing common treatment for severe knee osteoarthritis and the main indication is pain. Subjective factors affect the way in which individuals express their real life experiences thus, this study aimed in bringing to the fore the personal perspective and interpretation of clients with (TKR).

Objective: The objective of this study was to explore the lived experiences of clients with total knee replacement.

Methodology: Phenomenological qualitative research design was used where participants were selected from hospital record of Tribhuwan University Teaching Hospital and Nepal Orthopedic Hospital of Kathmandu. Based on the lived phenonomenon, similar sharing of experiences from seven among nine participants with in-depth interview was obtained. The data was collected for 2 months period where data analysis went simultaneously to reveal the concepts. Then interview was transcribed manually following the thematic analysis phases of Gibson.

Results: The results indicated that most (5/7) expressed their ability to walk independently. Four clients (4/7) reported they could perform household chores and had no difficulty traveling in vehicles. Despite those positive results, all respondents (7/7) after TKR faced difficulties sitting down and majority (6/7) faced difficulty climbing stairs. Four had difficulty in standing up and lying. Three had queries about the treatment process; swelling of lower legs and life of the implant.

Conclusion: The emerged five themes: impact of the treatment regimen, mobility issues, treatment modalities, supportive environment and inadequate health counseling revealed that although there is mixed result of treatment outcome, all respondents are satisfied as they got rid of the continued severe knee pain; hence, the respondents are following some safety and precaution measures for the better outcome. Adequate health counseling emphasizing in the rehabilitation programms after TKR should be prioritized.

Keywords: *Total Knee Replacement, qualitative research design, lived experience*

INTRODUCTION

Total knee replacement (total knee arthroplasty) is a common orthopedic procedure used to replace the damaged or worn surfaces of the knee. Replacing these surfaces with an implant or "prosthesis" will relieve pain and increase mobility, allowing returning to normal, everyday activities[1]. Total Knee Replacement (TKR) is currently the international standard of care for treating degenerative and rheumatologic knee joint disease, as well as certain knee joint fractures[2]. Knee arthroplasties are an increasing common treatment for Osteoarthritis (OA) and the main indication is pain. In the United States, 4.2% of the populations above 50 years of age live with an artificial knee joint and over half of adults diagnosed with knee OA will undergo a knee arthroplasty[3]. Presently, there are no pharmacological agents for the prevention or treatment of OA; the only medical is considered a final option for relieving pain and regaining function in patients with OA[4].

METHODS

Phenomenological qualitative research design was used where participants were selected from hospital record of Tribhuwan University Teaching Hospital (TUTH) and Nepal Orthopedic Hospital (NOH), Kathmandu. Non-probability purposive sampling was used for this study. Samples were selected from hospital record of TUTH and NOH of Kathmandu. Six clients were selected from NOH and three clients were selected from TUTH. Thus, total nine clients were selected for the study purpose. The participants who had lived with TKR since (6–12) months of life and communicated well in Nepali language were included in the study. Concepts and information on the participants experiences about TKR surgery was identified with the repeated clarity from face to face interviews and audio records. Unstructed and semi-structured in-depth interview guidelines were developed based on the related qualitative literatures review and probing information by elaboration in the lived experiences from the participants. The non-verbal gestures and special events were recorded through observation. Ethical approval was obtained from Institutional Review Board (IRB) of Research Department, Tribhuwan University, Institute of Medicine. Precaution was taken throughout the study in every step to safeguard the right and welfare of all participants in the study. Participants had right to participate voluntarily and withdraw from the study at any time without repercussions.. The bracketing technique was used which helped to accurately describe participants' life experiences. The timing of data collection was according to the time mutually agreed upon by the researcher and the participants which was during the day time. Data collection and data analysis went simultaneously to reveal the concepts. Further visits were required for clarification of incomplete and unclear data and for the assurance of the information with the respondents.

The researcher herself conducted the interviews where interviews were recorded with a small microphone with the prior permission from the participants verbally and in written informed consent form. For enhancing the quality of the qualitative research findings, trustworthiness of data was maintained with repeated visits with the related participants. Partial participant observation method also helped to gain a close and intimate familiarity with the respondents. Similarly, the transcribed verbatim was included in the narrative to capture the full meaning of the points with each theme. Data source triangulation was maintained with the use of interview questions between participants and caregivers. Methodological triangulation was maintained with the use of interviews and field notes. Data analysis was done along with the data collection procedure. The researcher and qualitative research experts transcribed the collected data in Nepali in reference to memos and taped recordings. Then the verbatim was translated in English language and managed in electronic format so that software could read. Coding of transcripts was aided using Nvivo version 11, qualitative research software. Six phases of thematic analysis was used to interpret the qualitative findings of the study.

RESULTS

Thematic analysis was used to interpret the qualitative findings. The significant statements of the participants were coded from understanding the transcripts. Altogether 111 categories were generated from the narrative statements of the respondents. Based on self-reported experiences, efforts were made to get collective meaning from those categories where they were merged based on their semantic meaning in order to form concepts.

Altogether 30 concepts (table 1) were formed from those categories: self-reliance, satisfactory recovery, difficulty walking up and down, difficulty in sitting down, difficulty traveling, disturbance in sleeping, difficulty in morning (getting out of bed), anxious about the condition, problem in cold, unsatisfactory result with first treatment, self-care remedies, difficulty in standing up, safety and precautions (avoiding excessive climbing stairs, walking carefully and taking a walking stick for a long walk), changes in living pattern, satisfaction with health care providers, dissatisfaction with health care providers, advice from friends, role of family members, support from spouse, role of society, expensive operation, importance of exercise, irregularity in exercise, negligence in health, seek for better treatment, irregularity in health check-up, importance of health check-up and follow-up, unknown about the disease prognosis, compulsion in life and myths about the treatment.

Further analysis was done by combining related terms to create nine clusters of themes (table 2). After arranging the concepts to form the coherent patterns and five themes (table 3) generated after grouping the cluster of themes with their conceptual meanings respectively.

Table 1: Thematic Analysis for Concepts of Respondents n=7

S.N.	Categories	Number	Concepts
1.	Able to go out alone	2	Self-reliance
	Walks self without other's support	5	
	Hesitate to carry a walking stick	2	
	Performs household chores	4	
2.	Feels like own body part (knee)	2	
	No difficulty in climbing stairs	1	
	No difficulty in sleeping	5	
	No difficulty travelling in vehicles	4	
	No pain in knees at all	2	
	No poking and burning sensation	2	
	Absence of knee-noise	1	
	Aware about the implant, as it is well fitted	1	
3.	Difficulty going up	1	Difficulty walking up and down
	Difficulty getting down	2	
	Difficulty descending in stairs	2	
	Difficulty ascending in stairs	2	
	Difficulty in ascending and descending stairs	2	
	Unable to walk after injury in operated leg	1	

4.	Difficulty sitting on floor	7	Difficulty in sitting down
	Difficulty sitting on objects at very low places	4	
5.	Difficulty travelling in vehicles	2	Difficulty travelling
	Difficulty getting out of a car	1	
6.	Knee pain at night	4	Disturbance in sleeping
7.	Difficulty getting out of bed in morning	1	Difficulty in morning
8.	Knee-noise	2	Anxious about the condition
	Swelling has not gone down	3	
9.	Knee pain in winter	2	Problem in cold
10.	Burning sensation in knees	1	Unsatisfactory result with first treatment
	Difficulty walking after operation	1	
	Difficulty standing after operation	1	
	Nerve damaged from surgery	1	
	Terrified for next surgery	3	
	Tight pain at the operated site	1	
	Sensation of heaviness in whole body	1	
11.	Application of hot bag	1	Self-care remedies
	Application of pain relieving cream	1	
	Elevating feet during sleep	1	
	Sleeping with a pillow between knees	1	
	Oil massage	2	
	Resting feet on height	4	
	Stay in sun	2	
12.	Difficult to stand up out of a seat	4	Difficulty in standing up
	Takes support of hands while getting out from floor	2	
	Takes support of others from getting up from low places	2	
	Take support of hands when getting out of bed	1	
13.	Avoiding crossing legs while seated on floor	7	Safety and precautions
	Avoiding long walk	3	
	Holding handrails climbing stairs	2	
	Avoiding sitting on floor	5	
	Use long-handled mops for cleaning rooms	4	
	Use of commode	7	
	Avoiding sitting-legs-cross	5	
	Avoiding squatting positions	7	
	Avoiding travel on bike	1	
	Avoiding kneeling down	1	
	Limiting climbing stairs	5	

	Preventing walking in slope and slippery areas	1	
	Travels in taxi	2	
	Travels in private car	2	
	Walk carefully without rush	4	
14.	Shifted to ground floor	2	Changes in living pattern
	Made tools for resting feet	1	
15.	Doctors instructed to avoid falls	4	Satisfaction with health care providers
	Doctors advised to limit climbing stairs	3	
	Doctors advised to take care of knee	7	
	Encouragement from doctors	3	
	Qualified and skilled doctors	4	
	Timely referral for treatment	3	
	Doctor advised strictly for physiotherapy	2	
16.	Advised for leg amputation	1	Dissatisfaction with health care providers
	Differences in health advices	1	
	Doctors got irritated from repeated visit	1	
	Inadequate information about the exercise	1	
17.	Friend advised for the operation	4	Advice from friends
18.	Family member takes to hospital	7	Role of family members
	Needs support of family	7	
	Needs family for sharing feelings	1	
	Son, daughter, daughter-in-law all encouraged for operation	2	
	Depends on family for visiting hospital	4	
19.	Husband helps in managing household activities	3	Support from spouse
	Husband encouraged for operation	4	
20.	Relatives suggested for operation	4	Role of society
	Important of society	1	
21.	Operation is costly	5	Expensive operation
	Who doesnot have money cannot afford for treatment	2	
22.	Daily morning and evening walk	3	Importance of exercise
	Daily performs exercises of knees as taught	3	
23.	Household chores are sufficient for exercise	2	Irregularity in exercise
	Unable to manage time for exercise	3	
24.	Avoids exercise as recommended	2	Negligence in health
	Gaining weight	7	
	Injury over the operated leg	2	
	Unable to manage time for visiting hospital	3	

25.	Performed operation in foreign countries	1	Seek for better treatment
	Visits frequently foreign countries for health check-up	3	
	Visits family doctor for check-up	1	
	Visits private clinics for regular health check-up	3	
	Visits hospital for treatment from health camp	3	
26.	Visited hospital after the failure of home remedies	1	Irregularity in health check-up
	Absence of follow-up visit	2	
27.	Visited hospital once for check-up	1	Importance of health check-up and follow-up
	Visits hospital frequently for problems	2	
	Visited hospital twice for check-up	2	
	Planning for hospital visit	1	
28.	Queries about the life of implant	2	Unknown about the disease prognosis
	During hospitalization, one patient had bleeding problem	1	
	Neighbor operation wasnot good	1	
	Curiosity on treatment process	2	
29.	Compulsion to climb up stairs	1	Compulsion in life
	Compulsion for the operation	3	
30.	Relatives informing leg shortness after the operation	1	Myths about the treatment

Table 2: Thematic Analysis for Developing Cluster of Themes of Respondents n=7

S.N.	Concepts	Cluster of themes
1.	Self-reliance	Positive outcome of the treatment regimen
	Satisfactory recovery	
	Satisfaction with health care providers	
2.	Difficulty in sitting down	Limited range of knee motion
	Difficulty in standing up	
3.	Difficulty walking up and down	Alteration in mobility
	Difficulty travelling	
4.	Disturbance in sleeping	Negative outcome of the treatment regimen
	Difficulty in morning	
	Problem in cold	
	Unsatisfactory result with first treatment	
	Dissatisfaction with health care providers	
	Expensive operation	
	Anxious about the condition	
5.	Self-care remedies	Home management
	Safety and precautions	

6.	Changes in living pattern Seek for better treatment Importance of health check-up and follow-up visit Physiotherapy and exercise	Institutional management
7.	Role of family members Support from spouse Advice from friends Role of society	Contribution of family and society
8.	Irregularity in exercise Irregularity in health check-up	Adverse effect in health
9.	Negligence in health Unknown about the disease prognosis	Lack of health awareness
10.	Compulsion in life Myths about the treatment	Dealing with situation

Table 3: Thematic Analysis for Developing Themes of Respondents

S.N.	Cluster of Themes	Themes
1.	Positive outcome of treatment regimen Negative outcome of treatment regimen	Impact of the treatment regimen
2.	Limited range of knee motion Alteration in mobility	Mobility issues
3.	Home management Institutional management	Treatment modalities
4.	Contribution of family and society Dealing with situation	Supportive environment
5.	Adverse effect in health Lack of health awareness	Inadequate health counseling

DISCUSSIONS

The discussions of findings are linked to study framework from the interpretation of narrative statements of the participants where five themes emerged from the study: impact of the treatment regimen, mobility issues, treatment modalities, supportive environment and inadequate health counseling. The conclusions are drawn based on the findings of the study. The recommendations have been drawn based on the limitations of this study.

Impact of Treatment Regimen The findings with the interpretations of the statements from the participants about the outcome of treatment regimen of TKR was often described in contradictory terms i.e., both positive and negative. These apparently contradictory accounts were consistent with the analysis of findings from the caregivers' interview which also resulted in a mixed outcome of TKR. In this study, all the participants reported that they could walk independently without any physical support after

TKR surgery. More than 90% of people who have TKR surgery experience a dramatic reduction of knee pain and a significant improvement in the ability to perform common activities of daily living[5].

Despite with positive impact of the treatment regimen, more than half of the respondents expressed negative impact of the treatment regimen. According to them, they had disturbance in sleeping. The findings are consistent with the study where one of the most common complaints after total joint replacement is difficulty sleeping[6].

Three of them reported they had swollen legs which have not been relieved after the operation. The findings are consistent with the report where swelling has been related to increased pain, decreased range of motion of the knee, gait alteration, decreased quadriceps strength and delayed recovery[7].

Two participants (2/7) reported they have noises at knees while moving legs. This finding is supported by Cluett which showed noises can come from a number of possible sources, including the metal and plastic implants, tendons, and fluid around the knee. Many patients who undergo knee replacement surgery will describe noises that come from their replaced joint8.

MOBILITY ISSUES

Almost all participants had difficulty sitting on floor and more than half had difficulty standing up out of a seat. Majority of the participants had difficulty climbing stairs. These findings are consistent with one of the study findings which showed TKA successfully reduces pain and provides a functional range of motion for patients with a severe knee OA[9].

One study showed TKA predominantly serves to reduce clinically important pain in the index knee, beyond which it may serve to stabilize function, although not restoring it to predisease levels by Dusad et al[10]. A study conducted in functional disabilities and patient satisfaction in Korean patients after TKA with a follow-up longer than 12 months reported the severe functional disabilities were difficulties in kneeling, squatting, sitting with legs crossed and recreational activities. Twenty-three out of twenty-six (18.8%) patients dissatisfied with their replaced knees had more severe functional disabilities than the patients satisfied for most activities[11].

TREATMENT MODALITIES

Almost all participants avoided activities like crossing legs while seated on floor and squatting positions. This finding of the study is consistent with the study by Narayan et al. where all patients who received a standard knee replacement were followed-up regularly at 1, 3, and 6 months and annually thereafter. The functional result and range of motion of the knee were assessed at a minimum period of 12 months post surgery by an independent surgeon. The function of the knee was assessed using the Knee Society Score[12]. Four of them avoided hanging feet down and elevated their feet on some height. The findings are consistent with news paper report of Caillier, on how to help swollen leg which reported when sitting, the feet should be propped up on a chair or stool. Allowing the legs to hang down allows gravity to further collect fluid around the feet and ankles. While lying down, a pillow placed under the heels or legs can keep the feet elevated[13].

Precautions were taken by the participants as avoiding excessive climbing stairs, walking carefully and taking a walking stick for a long walk. Some of them avoided walking in unfamiliar place and traveling on the bike. Reasons for physical activity limitation included patients' fear of damaging their knee and a lack of confidence in their implanted knee[14]. The majority of the participants tried with the home management for the problems with their operated knee. After the failure of the home remedies, few of them visited the hospital. This finding is similar to the study where the management by health professionals for people on the waiting list for joint replacement was minimal. However, participants spoke of 'hiding' their symptoms from health professionals and were trying to 'self-manage' their symptoms[15].

SUPPORTIVE ENVIRONMENT

Study on the importance of patient satisfaction with care in predicting osteoarthritis-specific health-related quality of life one year after total joint arthroplasty by showed that satisfaction with the immediate care after surgery is a good predictor of achievement of patients' expectations one year after the surgery and is an important indicator for patients' self-reported health[16]. For more than half of the participants, homemaking was their principal social role and primary source of physical activity. All the participants were homemakers but out of seven, three reported that household chores were not compulsion to them due to presence of maid and daughter-in-law. However, they reported that TKR improved their ability to perform those roles when necessary which is similar to the study of physical activity and experience of TKR in patients 1-4 years post-surgery in the Dominican republic: a qualitative study reporting all patients with improved roles in household activities after TKR[14].

INADEQUATE HEALTH COUNSELING

In regard with the dissatisfaction with the health care providers, one participant reported inadequate information regarding the physiotherapy following the surgery. This report is similar to study findings where several patients recalled recommendations to walk after TKR but most did not recall receiving any exercise guidelines. Patients most commonly reported physician instructions to avoid falls and to take care of the knee or oneself[14]. All participants had performed physiotherapy after the second day of operation regularly for 2-3 months by the physiotherapist. After the time period, there is discontinuation in the recommended exercise by the respondents. These findings are supported by one of the study which showed persistent impairments and functional limitations 6 months after TKA with standard rehabilitation suggest that more intensive therapeutic approaches may be necessary to restore the function of patients following TKA to the levels of healthy adults[16].

CONCLUSION

The results indicated that most of the participants reported positive outcome of TKR surgery with able to walk independently, perform household chores and in traveling. Despite those positive results, there were major issues in sitting down and climbing up stairs. The five themes from the thematic analysis: impact of the treatment regimen, mobility issues, treatment modalities, supportive environment and inadequate health counseling revealed that although there is mixed result of treatment outcome, all respondents are satisfied with the surgery as they got rid of the continued severe knee pain; hence, the respondents are following some safety and precaution measures for the better outcome.

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