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Focus Group Discussion as a Tool to Assess Patient-Based Outcomes, Practical Tips for Conducting Focus Group Discussion for Medical Students—Learning With an Example

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Abstract

Patient-based outcomes (patient-reported outcomes) of any intervention can change according to factors like age, gender, region, culture, education, and socioeconomic status. Most of the available outcome measuring tools have a surgeon-related bias. Focus group discussion (FGD) is a simple and effective way to assess the outcome of an intervention. In FGD, people from similar backgrounds and experiences discuss a specific topic of interest. Our objective is to discuss the problems of common outcome measuring tools for patient satisfaction and to understand the method of conducting an FGD. We have set our own published article on patient-based outcomes after total knee arthroplasty (TKA) as an example for explaining the method of conducting an FGD. The planning, advantages, disadvantages, practicalities, and problems of conducting an FGD are explained. In conclusion, many of the tools used for assessing patient satisfaction is surgeon-centered. Focus group discussion is simple, cost-effective, requiring a small number of participants, and can be completed in a short period. It is an effective tool for assessing patient-based outcomes in TKA.

Keywords

patient-reported outcomes, focus group discussion, qualitative research methods, total knee arthroplasty

Introduction

The patient satisfaction assessment is very important in medical practice. It helps to improve medical care and make the patient happier (1). A patient's expectation after a procedure is defined as the anticipation of certain events happening during or after surgery (2). Patient dissatisfaction can result either from inappropriate expectations or from a lack of proper information regarding the outcomes. The surgeon gives importance to procedural success. They are usually unaware of patient dissatisfaction. Regional, social, cultural, and economic factors have a bearing on the outcomes of any treatment (3).

Surgical outcomes refer to data regarding operation results, including information about mortality and morbidity, recovery time, operative numbers, and repeat rates (4). This is different from the surgeon's expectations about the outcome which vary with the type of surgery, the seriousness of the condition, the age and fitness of the patient, the experience of the surgeon, and the volume of surgery done. Most of the tools used to find out the outcomes and measure the ability of the surgeon to produce statistically significant data using certain prescribed parameters (5). The surgeon judges the success of surgery based on the anatomical, radiological, and functional outcomes. The majority of the tools used for measuring the outcomes of surgery are based on the fact that the patient and the clinician have a common viewpoint about the outcome. This is not always true as the patient and the doctor have different perceptions about all domains of outcomes. This is true in subjective quality-of-life domains

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Table 1. A Comparison Between the Factors Affecting the Outcomes in a Successful Total Knee Replacement and Patient Satisfaction After a Total Knee Replacement.

Successful TKR	Patient satisfaction after TKR
Based on implant longevity	Based on patient satisfaction
Based on the revision rate	Depends on pain relief and functional improvement
The unrevised implant may not function well	The patient will be symptomatic even when the implant is proper
A third party interpret the outcome	The patient interpret it
Mainly depend on functional and radiological parameters	A variety of factors like functional status, emotional aspect, and social behavior can influence the outcomes
An in-person assessment is necessary	Can be assessed using electronic and social media also
Less costly	Some PRO methods can be costly and some privacy issues

Abbreviation: TKR, total knee replacement.

like emotional and social functioning (6). This may be probably due to the differing priorities of the 2 groups. This discrepancy between patient and clinician in the validation of health-related outcomes has guided the development of many validated patient-related outcome measures like Short Form 36 (SF 36), Eating disorder Quality of life (ED-QOL), Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), Oxford Knee Score, and so on. These tools allow patients to rate their health and they are the center of outcome assessment (7).

Total knee replacement (TKR) is a common surgery done for osteoarthritis (OA) of the knee worldwide. It has a major effect on the activities of daily living. The geographical, social, cultural, economic, and many factors of a population can influence the outcomes of TKR. Expectations after the knee replacement will differ entirely among different populations (8). A successful TKR may not be a satisfactory one for the patient due to differences in factors determining the outcome measures (Table 1). Many previous studies have looked into the patient-reported outcomes of TKR (Table 2).

Focus group discussion (FGD) is a qualitative research method. It can be used for evaluating the outcomes of health care interventions (9). A focused group discussion is an effective way to bring people from similar backgrounds and experiences to discuss a specific topic of interest. This group is guided by a moderator/leader. The moderator introduces the topic for discussion and helps the group to participate in a lively and natural way. The participants should stay on the topic and not wander (10–12).

There are many advantages to FGD. It can be used to explore the outcomes that cannot be explained statistically. Responses in FGD are spoken open-ended, relatively broad, and qualitative (13). They have more depth and variety. There can be nonverbal communication and group interactions. They can give an idea closer to what people are thinking and feeling. Focus group discussion is a good way to gather in-depth information about the community's thoughts and opinions on a topic (14,15). Focus group discussion can yield a lot of information about a topic in a relatively short time. All these pieces of information may not be relevant. Observations and the opinions we get from FGD have to be mentioned in their own words. It can cause difficulties during translation (16,17). Thematic analysis and constant comparison techniques are used for data analysis (18).

Our objective is to discuss FGD as a tool to assess patient satisfaction. We also want to give some general guidelines for conducting FGD. This is based on our article published in the *Journal of Medical Devices*: *Evidence and Research* "Patient-based outcome analysis is important to determine the success of total knee arthroplasty: the result of a focus group discussion" (19) (We have taken permission from the publisher).

Materials and Methods

Fifty patients were selected for FGD. Among them, 42 patients participated in FGD. The remaining 8 did not participated. We included persons who had completed 2 years after primary TKR. Six FGD sessions was conducted. We included participants who were homogeneous in terms of age, status, class, occupation, and follow-up characteristics. Patients with inflammatory arthritis, secondary OA, posttraumatic arthritis, old high tibial osteotomy, and revision TKR were excluded from our study. Since we aimed to find out the patient-reported outcomes, we used a purposive sampling method. We collected the patient details from our hospital records. We selected a moderator who had no relationship with the patients. The participants were divided into 8 groups, each having 6 members. The allocation was done by simple randomization. After each FGD, we went through the discussions and created new domains and subdomains. Based on this, we prepared new questions for the next sessions. It helped us to discuss a bit deeper into the new domains (19). Proper planning is needed before the conduct of FGD (Appendix A).

The group's composition and the discussion should be carefully planned to create a nonthreatening environment. All participants feel free to talk openly and give honest opinions. There is freedom for the participants to agree or disagree with each other. We have to support them to come out with their own opinions. They are free to express their thoughts and feelings, although their responses are hard or impossible to record on a scale.

Table 2. The List of Few Previous studies to Assess Patient-Reported Outcomes After Total Knee Replacement With the Methods Used for Assessment and Their Conclusions.

References	Method used assessment	Conclusions
Williams DP, Price AJ, Beard DJ, Hadfield SG, Arden NK, Murray DW, et al. The effects of age on patient-reported outcome measures in total knee replacements. The Bone Joint J. 2013;95-B:38-44.	Oxford knee score (OKS) and EuroQoL-5D (EQ-5D)	The early outcome after TKA by OKS and EQ-5D is comparable across all age groups. Patients <55 years are more likely to be dissatisfied with surgery. The OKS and EQ-5D alone might not accurately reflect the true outcome in all age-groups
Lange JK, Yang HY, Collins JE, Losina E, Katz JN. Association between preoperative radiographic severity of osteoarthritis and patient-reported outcomes of total knee Replacement. JB JS Open Access. 2020;5: e19.00073-e19.00073.	WOMAC and KOOS	TKA offers substantial symptomatic relief and functional improvement regardless of the radiographic severity of osteoarthritis.
Wylde V, Blom AW, Whitehouse SL, Taylor AH, Pattison GT, Bannister GC. Patient-reported outcomes after total hip and knee arthroplasty. J Arthroplasty. 2009;24:210-16.	OKS	TKA patients experience a significantly poorer functional outcome than THA patients 5 to 8 years postoperatively.
Collins NJ, Roos EM. Patient-reported outcomes for total hip and knee arthroplasty. Clin Geriatr Med. 2012;28:367-94.		The osteoarthritis-specific and arthroplasty-specific measures like HOOS, KOOS, WOMAC, Oxford Hip, and Knee Scores can more consistently be considered "good" patient-reported outcomes for THA and TKA.
Bin Sheeha B, Williams A, Johnson DS, Granat M, Jones R. Patients' experiences and satisfaction at one year following primary total knee arthroplasty: A focus-group discussion. Musculoskeletal Care. 2020;18:434-49.	FGD	Patient attitudes, expectations, preoperative education, communication with the surgeon, and rehabilitation affect postoperative outcomes.
Kennedy D, Wainwright A, Pereira L, Robarts S, Dickson P, Christian J, et al. A qualitative study of patient education needs for hip and knee replacement. BMC Musculoskelet Disord. 2017;18:413.	FGD	A multimodal patient education tailored to individual preferences and experiences according to age and gender is important before arthroplasty
Ayyar V, Burnett R, Coutts FJ, van der Linden ML, Mercer TH (2012). The influence of obesity on patient reported outcomes following total knee replacement. Arthritis, 2012, 1-6. https://doi.org/10.1155/2012/185208	OKS	There is no significant difference in outcomes of TKA in obese and nonobese patients
Trieu J, Gould DJ, Schilling C, Spelman T, Dowsey MM, Choong PF. Patient-reported outcomes following total knee replacement in patients. J Clin Med. 2020;9:3150.		Pain and functional deterioration start during the second decade after TKA
Ayers DC, Li W, Oatis C, Rosal MC, Franklin PD. Patient-reported outcomes after total knee replacement vary on the basis of preoperative coexisting disease in the lumbar spine and other nonoperatively treated joints. J Bone Joint Surg Am. 2013;95:1833-37.	WOMAC and ODI	Preoperative musculoskeletal pain in the lower extremity joints and low back is associated with poorer physical function at 6 months after total knee replacement.
Feng JE, Gabor JA, Anoushiravani AA, Long WJ, Vigdorchik JM, Meere PA, et al. Payer type does not impact patient-reported outcomes after primary total knee arthroplasty. Arthroplast Today. 2019;5:113-18.	KOOS and Veterans RAND 12 Health Survey	Regardless of insurance type, the surgeon can expect similar patient-reported outcomes if baseline demographics are similar

Abbreviations: FGD, focus group discussion; HOOS, Hip disability and Osteoarthritis Outcome Score; KOOS, Knee injury and Osteoarthritis Outcome Score; ODI, Oswestry Disability Index; RAND, RAND-36 scales; TKA, total knee arthroplasty; WOMAC, Western Ontario and McMaster Universities Osteoarthritis Index.

The demographic data of the participants were collected. We also checked the knee society score of all the participants before FGD. The FGD sessions were started with a self-introduction session. We gave some time for the participants for getting to know each other. This helped them to alleviate their fear of open discussion. Then the moderator introduced himself and his team. The moderator explained the objective of this discussion and the procedure. Then he initiated the FGD by putting an open general question. Group members were free to talk openly. The groups took more time to respond than individuals. Some group members felt hesitant to speak openly. Participants were actively encouraged to express their own opinions and to respond to other members and questions posed by the leader. The moderator made sure that the discussions revolved around the topic. The group members could often stimulate thought for each other which might not have occurred otherwise. We stopped the sessions when no fresh domains emerged (20,21).

During our FGD, most of the participants were discussing the problems they had before the knee arthroplasty and about

Table 3. The Major and Minor Domains Emerged From our Focus Group Discussion to Assess Patient Satisfaction After Total Knee Replacement.

1. Patient complaints	2. Loss of function
(a) Knee pain	(a) Inability to walk alone
(b) Deformity of the knee	(b) Inability to climb upstairs
(c) Cosmetic properties after surgery	(c) Inability to use Indian toilet
	(d) Inability to do prayer (kneeling)
3. Socioeconomic aspect	4. Delay in surgery.
(a) Restricted to home	(a) Tried alternative modalities of treatment
(b) Dependent on others	(b) High cost of surgery
(c) Mental stress	(c) Not aware of the results of TKR
(d) Inability to go to work	(d) Fear of failure of surgery
	(e) Fear of undergoing surgery
5. Satisfaction level achieved	
(a) Relief from pain	
(b) Increased range of movements	
(c) Social independence: (1) walk alone/(2) go for work	
(d) Reasonable pre-operative expectations	
(e) Preoperative education	
(f) Postop rehabilitation	

Abbreviation: TKR, total knee replacement.

various treatment methods used by them to overcome these difficulties. They discussed about why they were reluctant to come for operative treatment, how they felt after surgery, and their satisfaction after TKR. We created new domains and subdomains after each FGD by making a transcript of the discussions in the patient's own words and carefully analyzing them. No fresh domains or subdomains emerged after the fourth FGD.

During each FGD, the opinions of the participants in their own words were taken down by a person. We used both written and voice recordings of our FGD. The data obtained are analyzed by 2 different individuals who are not part of the FGD. This was to ensure the naturality and credibility of the findings. A thematic analysis of the findings was done. Thematic analysis is a qualitative descriptive method to identify and analyze the narrative materials to report patterns or themes. This method has the flexibility for analysis. These interpretations and observations were combined and a conclusion was made.

We had obtained institutional research committee approval for this study. The patients were informed about the study and that data from the FGD would be submitted for publication and their consent was taken.

Results

We have taken the results from 4 FGD because the opinions plateaued thereafter. There were 24 participants between the ages of 50 to 65 years. Among the 24 participants, 15 were males and 9 females. The average knee society score was 1.18 with a standard deviation of 0.50. Five major domains were evolved after our FGD. From the major domains, many minor domains were also developed (Table 3). From the FGD conducted, we found that the socioeconomic impact of OA of the knee is worse than the clinical and radiological severity of the disease. Patients with high preoperative expectations have low satisfaction levels. Surgeon–patient communication has a major impact on patient-reported outcomes. The patient satisfaction level is different from those measured using objective scoring systems. Patient satisfaction levels are high for pain relief, pain-free movements, and social independence. But they are not satisfied because of their inability to returning to their original occupation and performing activities that require knee flexion.

Discussion

From our analysis, we found that loss of function was a major concern before surgery. The pain and deformity were the next. One patient told us, "Walking caused severe pain that I was restricted to my home. I was unable to squat in the toilet." Some of them even converted their squat toilets to western type of toilets.

The social disabilities due to OA of the knee were far more than we thought. The majority of patients were restricted to their homes. They avoided attending family functions. The majority said they needed help from their children or others in climbing upstairs or for walking long distances. The difficulty to use squat toilets was another social issue. These issues were causing mental stress and depression in some patients. Loss of income due to inability to go to work was another problem. Some stopped going to work while others went to work but were less efficient. They had to take more leaves which led to reduced pay. Most of these patients were belonging to a low- or middle-income group. This affected their daily livelihood. There was a delay of 2 to 3 years before surgery for most of the patients. The affordability of total knee arthroplasty (TKA) was the major issue. They tried different modalities like Ayurveda, massaging, and acupuncture in-between. The majority were unaware of the results of TKR. Some were reluctant to do a TKR due to the fear of undergoing surgery.

Most of them were happy after TKR as they could walk and climb stairs independently. They had minimum pain compared to the preoperative level. Some patients thought they could go for manual work and use the squat toilet after TKR. They opined low satisfaction levels because they couldn't do it after TKR. But some patients were aware of these problems before surgery and their satisfaction level was high. Proper preoperative education and expectations have a bearing on postoperative outcomes. We also came to know that most of the patients were not getting proper postoperative rehabilitation. They were taught about the rehabilitation protocol postoperatively but were not doing it properly. Some said that they were hesitant to flex the knee because they feared something might happen to the implant. Some blamed the doctors for not explaining these things.

Table 4. The Main Questions and the Probes Prepared for Our Focus Group Discussion.

Main questions (open-ended questions)	Probes
What were the problems due to osteoarthritis of the knee?	Pain, deformities, loss of earning, restriction of activities of daily living
Have you taken any treatment for osteoarthritis of the knee?	Modern medicine, Ayurveda, Homeopathy, indigenous treatment modalities, no treatment done
How did you come to know about TKA?	Doctors, friends, magazines
What are the factors that delayed you from undergoing TKA	Economic factors, fear of surgery, apprehension regarding loss/failure to return to the occupation
What were your expectations about TKA?	
Are you satisfied after TKA?	Pain relief, functional improvement, activities of daily living, return to the occupation
Are you dissatisfied after TKA?	Pain relief, functional improvement, activities of daily living, return to the occupation
Did you aware of these limitations before TKA? Did your doctor explain it?	
Have you got instruction regarding postoperative rehabilitation?	
Did you follow the rehabilitation protocol?	

Abbreviation: TKA, total knee arthroplasty.

There are some reasons behind selecting patients after TKR for assessing their satisfaction. The number of patients opting for TKR is increasing in our population. We are working in a government medical college in a developing country. Most of our patients for TKR hail from low socioeconomic status. Most of them are manual laborers and living in rural areas having limited road connectivity to their houses. They have to walk or climb hilly terrains. They have to work on farms or fields to earn their livelihood. They use squat toilets. After TKR, most of them want to return to their prior occupation. They can't change their living conditions. Most patients become aware of the postoperative limitations only after TKR. Many of our patients were unhappy after TKR even when they are clinically and radiologically fine. This prompted us to find out the patient-reported outcome of our patients after TKR. We used FGD as a tool for knowing our patient's satisfaction and opinions regarding TKR. The usually used measuring tools are surgeon-dependent and originate from developed countries.

Practical Problems in Conducting an FGD

As in any research method, finding a representative sample is very important in FGD. Make sure that all the participants are similar in their regional, cultural, educational, language, and socioeconomic status. Otherwise, there can be disparities in their opinions regarding the same issues. For example, if we are conducting an FGD about strengthening public transport and participants from rural and urban areas are included, their perceptions and opinion may vary. The city dwellers may be using their vehicles for travel they may be worried about traffic blocks or pathetic situations on the road, whereas the rural dwellers will be more worried about the number of buses and the making of new roads. In our case, all patients belonged to the same region, similar age-group, same diagnosis, and similar socioeconomic status (22,23).

Focus group discussion can be a powerful tool for gathering data on experiences, beliefs, attitudes, and perceptions. Asking sensitive questions is not at all a problem in the FGD. As all the participants belong to the same cohort, hence the topic of discussion becomes very simple for them (24). Usually, 1 or 2 questions for the starting of the discussion are needed. Usually, they are simple and general questions. Sometimes, new questions will be added which are emerging from the analysis of previous FGD. The questions are formed by the participants and the answers of which come from themselves. We have not come across any difficult situations where we have a problem with asking a sensitive question. We have prepared a set of questions for our FGD (Table 4).

Recruiting participants is not a difficult task in FGD. In most cases, we can find out the participants from the cohort. We can collect the details of the participants from the outpatient clinic, from community nurses, hospital records, or from registries (25). We have obtained the details about our participants from the hospital records. We contacted them over telephones. One of our residents was given the charge of contacting the participants before each session.

Language barrier can be a problem. The participants and the moderator need to be well-versed in the language in which they are conducting FGD. Analysis of data and their interpretations also becomes difficult if they are not using the same language. We conducted the FGD in our mother tongue Malayalam. We did have some difficulty in translating certain colloquial terms into the English language during the publication of our results.

Maintaining quality and consistency during each session is very important (26). The audio or video recording of the FGD sessions helps to maintain the quality of the procedure.

Quality control is the responsibility of the moderator. We had an audio recording of all our proceedings. And the moderator had full control of the whole team during the entire session.

Our Experiences

Our journey started by searching the literature for a simple but practical method for assessing patient satisfaction after TKA. After deciding to conduct FGD, we collected patients from the hospital records. They were randomly allocated to 6 groups. The date, time, and place of each session were decided. There was a delay of 10 days between each FGD. The moderator, a person for writing, and another one for recording were identified. Two senior doctors from our department were assigned for data analysis. A table with 7 chairs was arranged for the moderator and team members. All the data collected were handed over to the team leader after the end of each session. Each session lasted for about 1.5 to 3 hours. We can surely say that the success of our project is the result of teamwork not only among the persons involved in the conduct of the FGD but also among all the participants. Since there are no interventions involved in this research, there is little to worry about the safety aspect of the researcher and participants. But great care was taken to protect the identity of the participants. Our greatest difficulty was in translating the data during publication.

Assessment of patient-reported outcomes is important in any health care intervention. This helps the treating doctor to make necessary modifications in their practices which will ultimately help the community. The regional, cultural, social, and economic status of the patients have a bearing on their level of satisfaction. It is better to develop tools that can be used for various populations. From our experience, we think that FGD is a very effective tool for measuring patient-reported outcomes/satisfaction. It can be conducted with a minimum number of participants. Planning and preparations are less cumbersome. As we are ensuring the homogeneity of the participants, we can get an emic perspective about the subject. Even information about certain sensitive issues can be obtained during FGD. As there are no interventions involved, it is well accepted and cost-effective. We found that patient-based outcomes of TKR differ from the Knee Society Score. Focus group discussion is a simple and surgeon-friendly tool for measuring patient-reported outcomes after TKR.

Conclusion

Patient-based outcome measurements are important for the evaluation of any intervention. Focus group discussion is a simple and effective way to find out the patient-based outcomes. Focus group discussion is a simple and surgeon-friendly tool for measuring patient-reported outcomes after TKR.

Appendix A

Important Points to Be Noted While Planning a Focus Group Discussion

- Decide the number of groups*
- Make sure all participants are homogenous
- Assign the place, date, time of each focus group discussion (FGD)
- Inform the participants early regarding the FGD**
- Find out a moderator who is knowledgeable in the topic and knows the vernacular language
- Ask the moderator to prepare some leading questions***
- Arrange a person for writing and arrange an audiovisual team.

*Better to create small groups and 5 to 6 groups are enough. Too many participants make it difficult to control them during FGD, also the discussion can get going out of context.
**So that they can come on time.
***These questions should be based on the experiences of the moderator and also from the previously published literature about the topic.

Authors' Note

The corresponding author Balaji Zacharia contributed to conceptualize the idea, helped in collecting data, analyzing, statistics, writing, and editing the manuscript. The coauthors helped in collecting data, analysis, statistics, writing, and editing the manuscript.

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Declaration of Conflicting Interests

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