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The impact of a preoperative information leaflet on expectation management, satisfaction and patient outcomes in patients undergoing knee arthroscopy

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ABSTRACT

Background: This study examined the effects of a patient information leaflet on outcomes related to patient satisfaction following knee arthroscopy.

Methods: Cohort study of patients listed for knee arthroscopy under the care of a single surgeon over a nine-month period (May 2017–January 2018) following the introduction of an information leaflet as an adjunct to the consent process. Outcome data was collected postoperatively through telephone follow-up. Outcome measures included feelings of involvement with decision-making, expectations being met, satisfaction, postoperative pain numerical rating scales and the Forgotten Joint Score-12.

Results: Fifty-five patients were consented by the operating surgeon, of which 28 (50.9%) received a leaflet and 27 (49.1%) did not. Patients who received the information leaflet felt more involved in and informed about the decision to have an operation than patients who did not ($p = 0.016$), however there were no differences in any other outcomes between patients who did and did not receive a leaflet ($p > 0.05$).

Conclusions: The use of an information leaflet as an adjunct to the preoperative consultation is an effective way of helping patients feel more involved in the surgical decision-making process, however this does not influence overall outcome or satisfaction metrics.

1. Introduction

Arthroscopic knee surgery has been indicated in the management of mechanical knee injuries and trauma for over 20 years [1,2]. It is thought to be the most common orthopaedic procedure in the world, and performed over two million times each year [3]. Success following an operation has traditionally been measured by lack of complications, however recently patient-reported outcome measures that capture the patient's impression of success have become prominent [4], with patient satisfaction with outcome seen as the single overarching metric of most importance. Work in lower limb arthroplasty has highlighted three main factors that determine satisfaction following surgical intervention: (1) meeting preoperative expectations, (2) achieving sat-

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isfactory pain relief and (3) having a satisfactory hospital experience [4]. It is broadly accepted that this translates to knee arthroscopy and across the spectrum of orthopaedic interventions [5–8].

Meeting preoperative expectations has a clear conceptual link with postoperative satisfaction and this is commonly targeted by patient education interventions [5–9]. This is commonly through preoperative educational hand-outs [10,11], web-based education [5,8] or extensive discussion in person prior to surgery [7,9].

Information leaflets are a cheap intervention that are thought to facilitate the patients' recall of information which can aid in the consent process [12]. Whether the provision of a leaflet has any further impact on patient feelings of inclusion with the surgical decision-making process or influences patient expectations and postoperative satisfaction is less well defined. The aim of this study was to evaluate if giving patients an information leaflet as an adjunct to the surgical consultation prior to knee arthroscopy affected feelings of preoperative involvement, feelings of having expectations met, overall satisfaction, pain and clinical outcome scores.

2. Methodology

2.1. Participants

Following local ethical and management approvals we reviewed all patients who underwent knee arthroscopy by a single high-volume knee surgeon over a nine-month window (May 2017 to January 2018 inclusive) following the implementation of an information leaflet (Supplementary material). The leaflet contained general information on knee arthroscopy and what to expect following the operation. Patients planned to undergo simple arthroscopic procedures via the standard portals (Evaluation under anesthetic (EUA) ± partial meniscectomy) were provided with the handout; more involved procedures such as those involving ligamentous repair were excluded from this project due to differing local management and follow-up plans. Under the care model at the study centre, patients could be consented for surgery by the operating surgeon, surgical registrar or extended scope physiotherapist practitioner. For logistical reasons, the additional hand out was provided only to patients consented by the operating surgeon. Though patients were not formally randomised to receive the information leaflet or not, the handout was alternately utilised in consecutive outpatient clinics (either all or no patients received the leaflet at that clinic) with no purposeful bias as to who did or did not receive it.

2.2. Data collection

All eligible patients, who had undergone surgery in the study timeframe and were at least three months post-intervention, were invited to complete a questionnaire. Response was by telephone interview by a single researcher (external to the surgical team), as this survey mode typically has the highest response rate [13]. Data was collected over nine days between April 2018 and May 2018 using an interview schedule and question proforma to enhance consistency of the interview and of reporting. Demographic data was obtained for the patient's age, sex, and socioeconomic denominators using the Scottish Index of Multiple Deprivation (SIMD) [14]. The SIMD is a national statistic based on postcode. It combines data on 38 indicators across 7 domains, namely: income, employment, health, education, skills and training, housing, geographic access and crime. We applied the 2016 SIMD national dataset, and report quintiles (from least deprived to most deprived; the 5th quintile representing the most deprived patients). We employed the 'datazone' approach where quintile cut-points are identified based on the potential scores in the national SIMD dataset.

Data on patient satisfaction, feeling of expectations being met and of inclusive preoperative involvement in the clinical decision-making process were assessed with single item metrics. All questions were scored using a 5-point response scale (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree). These descriptive answers were replaced with numerical terms for analysis with higher numbers representing more positive responses. Specifically, patients were asked; 'Do you agree with the statement': (1) My expectations about the operation, and the period after the operation have been met? (2) I felt involved and informed about the decision to have the operation? and (3) I feel satisfied about how my symptoms have changed following the operation?

Global knee pain severity was assessed using an 11 point (0–10) numerical rating scale (NRS), where 0 represents no pain and 10 the worst possible pain. Separate assessments were made of 'worst pain' and 'perceived mean daily pain' to provide more realistic and meaningful measurements of pain intensity [15].

The Forgotten Joint Score-12 (FJS-12) was employed as a single postoperative time point outcome metric [16,17]. FJS-12 assesses joint awareness during the activities of daily living (climbing stairs, walking for more than 15 min, in bed at night etc.). It consists of 12 questions assessed using a five-point Likert response format. Item scores are summed and linearly transformed to a 0 to 100 scale, a high value reflecting the ability of the patient to forget about the affected/replaced joint during the activities of daily living.

2.3. Statistical analysis

Data are presented as mean or median with standard deviation or interquartile range as a measure of dispersion according to underlying data distribution. Between-group differences were assessed using t-tests, Mann–Whitney U and chi-square tests as appropriate. Primary analysis was of leaflet vs no leaflet in the operating surgeon listing group, with sensitivity analysis evaluating data by listing professional. Significance was accepted at $p = 0.05$. Data were assessed using SPSS V.23.0 [18].

3. Results

One hundred seventy-six patients were placed on the operating surgeon's knee arthroscopy list during the nine months between May 2017 and January 2018. Of these, 12 procedures were cancelled and 164 of the planned arthroscopies took place. One hundred fifty-four (94%) of the 164 patients who underwent knee arthroscopy were eligible for the study. Ten patients (six percent) were excluded; seven patients were operated on by a different surgeon for operational reasons, two patients had a more recent knee surgery on the same knee (prior to collection of study outcome data) which would bias the responses and one patient did not have a clinic note that recorded who preoperatively consented for the arthroscopy. 124 (81%) patients completed the questionnaire and 30 (19%) were unable to be contacted (patient participation flowchart, Figure 1). Of the 124 patients who completed the questionnaire 55 (44.4%) individuals were consented for surgery by the operating surgeon 28 (50.9%) received a leaflet and 27 (49.1%) did not. Sixty-nine (55.6%) patients were consented by other healthcare professionals for surgery by the operating surgeon. These individuals did not receive the information leaflet, but outcomes were evaluated for sensitivity analysis (Figure 1).

Patients consented by the operating surgeon were on average 46.0 (14.6) years, with an approximately 2:1 male to female sex distribution (Table 1). Age, sex and deprivation index were similar between groups however those that received the leaflet were younger (10.2 years; $p = 0.009$). Patients receiving the leaflet reported a significantly higher score for feelings of preoperative

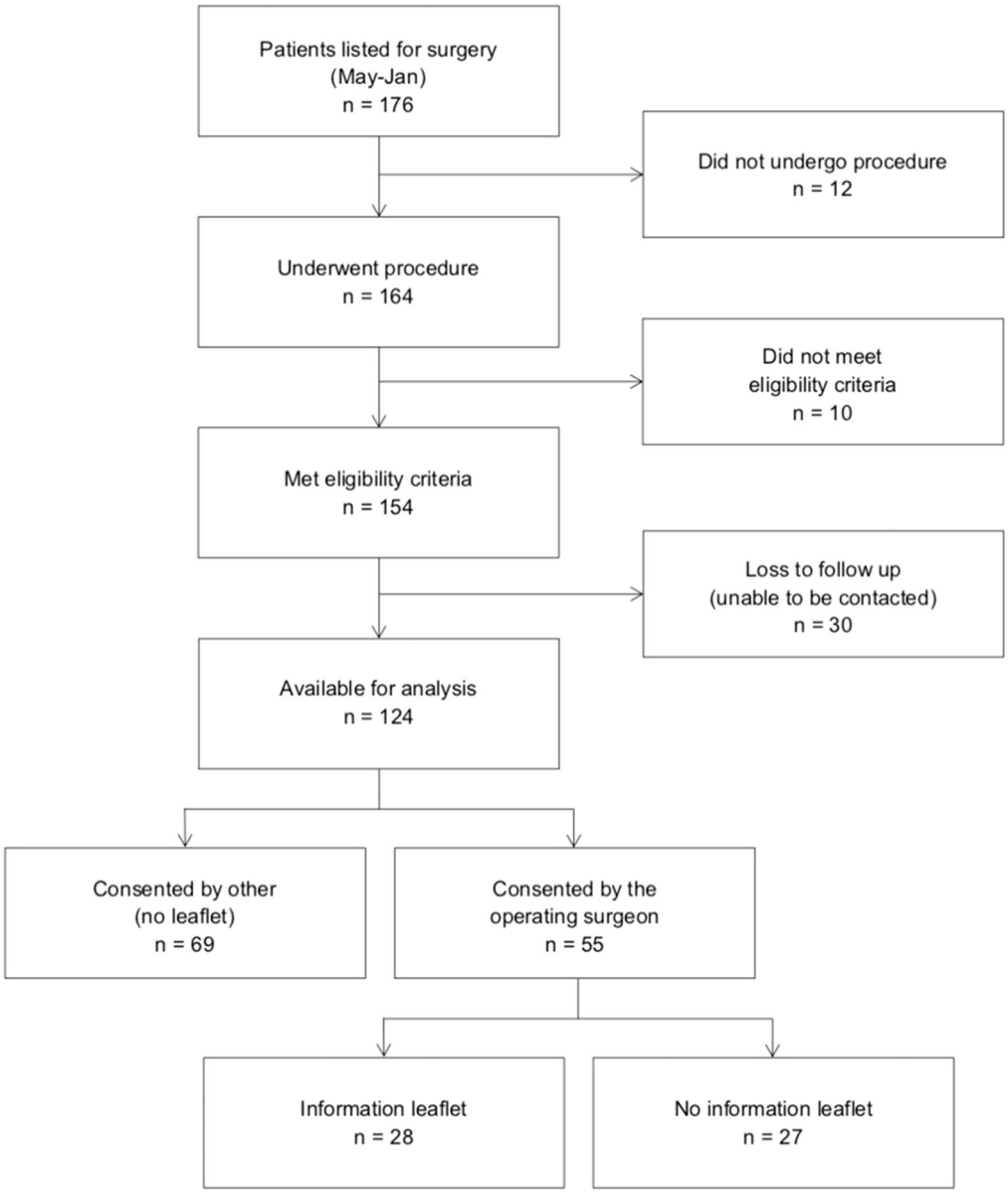

Figure 1. Patient inclusion flowchart.

Table 1
Demographic details of patients consented by the operating surgeon by information leaflet provision.

Group	N (%)	Age Mean (SD)	SIMD quintile Med (IRQ)	Male sex n (%)	Days since operation Mean (SD)
Consented by operating surgeon	55 (100%)	46.0 (14.6)	4.00 (3)	35 (63.6%)	199.7 (63.2)
Leaflet	28 (50.9%)	41.0 (13.2)	3.00 (3)	16 (57.1%)	212.3 (67.3)
No leaflet	27 (49.1%)	51.2 (14.4)	4.00 (2)	19 (70.4%)	186.6 (57.0)
Sig.		0.009*	0.108‡	0.260†	0.132*

* T-test.
‡ Mann–Whitney U test.
† Chi-square.

involvement compared to those who did not ($p = 0.016$) and a higher median score in meeting of expectations (+1.00; $p = 0.327$) however this did not lead to differences in reported satisfaction with outcome. In terms of postoperative outcome metrics, there were no differences in FJS-12 score or pain metrics (Table 2 and Figure 2).

Post-hoc evaluation as to the influence of the individual who consented the patient for surgery was carried out as a sensitivity analysis to evaluate potential bias in patient selection. Sixty-nine patients were consented by other medical professionals without the use of the preoperative leaflet. This data was contrasted with those consented by the operating surgeon. There were no differences in any demographic or outcome parameters between the patients who were consented by the operating surgeon and those consented by the wider team (Supplemental material).

4. Discussion

This study highlights that patients who received an information leaflet as an adjunct to the consent process felt more involved in the decision to have the operation than patients who did not, however this did not influence postoperative satisfaction, pain or functional scores.

The enhanced feeling of preoperative involvement reported by the group that received the adjunct information may be due to improved understanding of the process facilitating greater involvement in the decision-making process. It is well known that patients wish greater involvement in clinical decision-making [19]. This is fundamental to patient-centred care [20] and ensures the consenting process is performed comprehensively [21].

The feeling of greater inclusion we report contradicts the derisory suggestion that medical leaflets are “nothing more than proof for the surgeon of information provision to the patient” [22], and this simple handout may actually have a valuable role in clinical practice. Providing a leaflet at time of preoperative consultation may be a cheap and effective way of helping patients feel more involved in and informed about the decision-making process.

We anticipated that the leaflet would facilitate realistic patient expectations of outcome. Patients receiving the leaflet were more likely to report meeting of preoperative expectations, however this difference did not reach statistical significance. Despite the known generic link between expectation management and satisfaction there was no difference in postoperative metrics between groups. No clinical outcome differences were observed in terms of pain report scores or joint awareness, suggesting a consistent operative outcome.

The primary weakness of this study was the lack of preoperative data. This was unavoidable due to the retrospective nature of the study design but is mitigated by our patient selection process recording all cases that were performed in the study window. The high response rate of 81% is reassuring that the data we present reflects the wider population. This study reflects the role of an information leaflet on an individual surgeons' practice at a single geographical location. Wider generalisability is assumed but unconfirmed. The provision of the information leaflet to patients was not randomised but based on feasible logistics through the outpatient clinics. There was no purposeful patient selection, with all clinic attendees suitable for arthroscopy either receiving the handout or not as a block of patients. The demographics of those that did and didn't receive the adjunct information was similar in all parameters bar patient age. Though this was notably different between groups it is unlikely to be influencing feelings of involvement. The sensitivity analyses contrasting the operating surgeon consented patients with those by other healthcare professionals' eases concerns as to potential selection bias as there were no differences apparent in any demographic or outcome parameter we assessed.

Table 2
Outcomes data of patients consented by the operating surgeon by information leaflet provision.

Group	N (%)	Expectations Med (IRQ)	Involvement Med (IRQ)	Satisfaction Med (IRQ)	Max pain Med (IRQ)	Ave pain Med (IRQ)	FJS-12 Mean (SD)
Consented by operating surgeon	55 (100%)	4.00 (1)	5.00 (1)	4.00 (2)	3.84 (2.62)	2.09 (1.96)	41.9 (31.8)
Leaflet	28 (50.1%)	5.00 (1)	5.00 (0)	4.00 (2)	3.82 (2.78)	2.07 (2.05)	44.9 (29.5)
No Leaflet	27 (49.1%)	4.00 (2)	5.00 (1)	4.00 (2)	3.85 (2.49)	2.11 (1.89)	38.8 (34.3)
Sig.		0.327‡	0.016‡	0.558‡	0.966‡	0.941‡	0.480*

* T-test.
‡ Mann–Whitney U test.

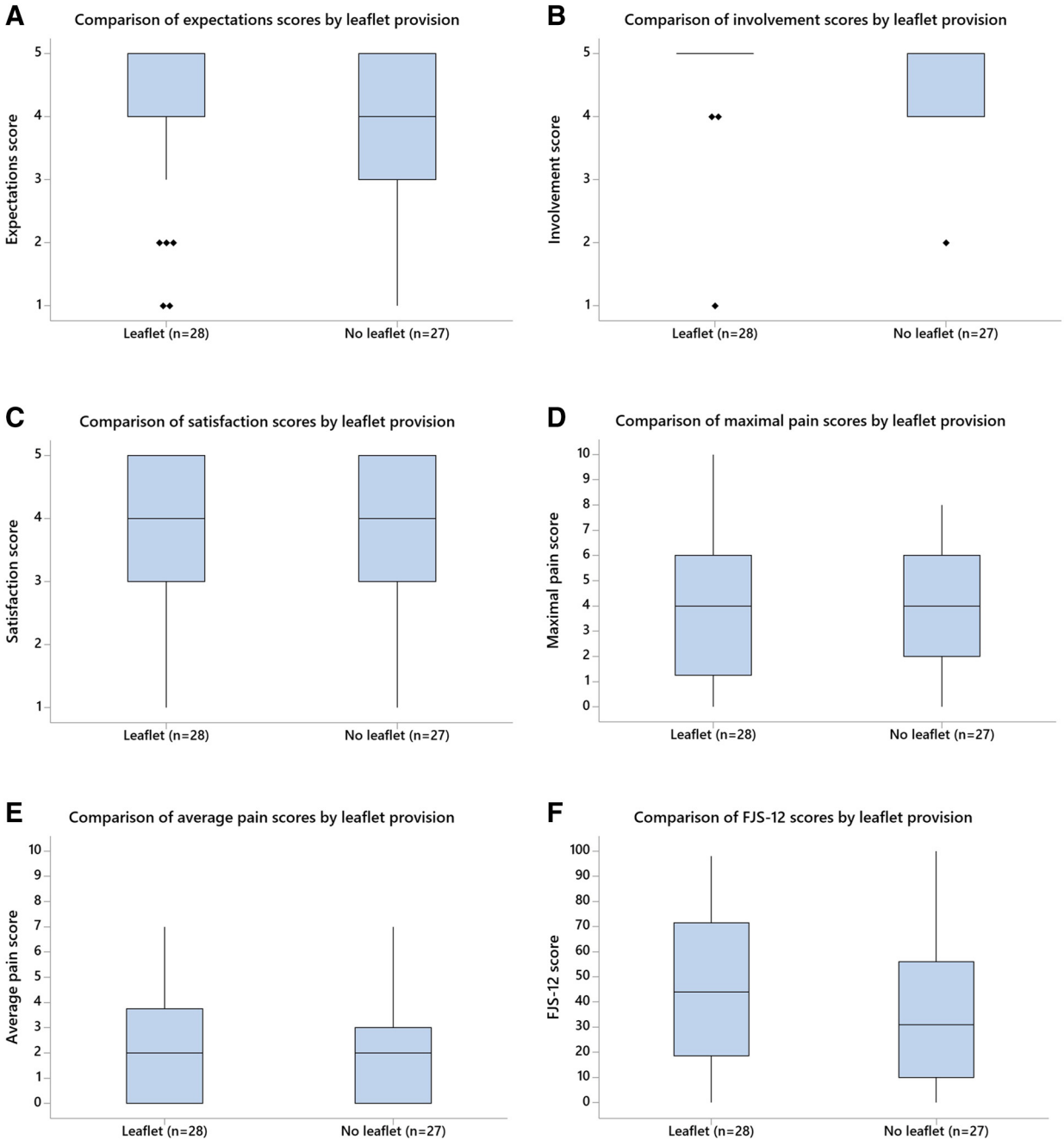

Figure 2. Outcome scores by leaflet provision.

This was a small single centre study and not specifically powered to detect differences in postoperative outcome scores. A larger multicentre study may be able to evaluate any influence on postoperative outcomes more thoroughly, however the distribution of data across the outcome metrics suggest that a very large number of patients would be required. While statistical significance may hypothetically be gained with very large numbers, it is doubtful that clinically meaningful differences would be apparent.

In conclusion, patients who receive an information leaflet at time of preoperative consultation feel more involved in the decision to have the operation than patients who do not receive a leaflet, however this is not reflected in higher satisfaction scores or postoperative outcome metrics.

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Declaration of Competing Interest

We declare no conflict of interests.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.knee.2019.06.011.

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