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PATIENT-PERCEIVED SHARED DECISION-MAKING IN NURSE-DELIVERED PRE-ANAESTHESIA COUNSELLING: LEVELS, ITEM-LEVEL GAPS, AND SUBGROUP CONSISTENCY

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Abstract

Aim: *This study aimed to describe the level of patient-perceived shared decision-making after structured pre-anaesthesia counselling, identify the weakest steps of the process, and examine whether perceived shared decision-making differed across patient subgroups.*

Methods: *This is a secondary, descriptive analysis of post-intervention data from a single-group pretest–posttest quasi-experimental study in three tertiary care hospitals in Pakistan. One hundred adults scheduled for elective surgery and eligible for both general and regional anaesthesia received a 15–20-minute nurse-delivered counselling session. Perceived involvement was measured with the 9-item Shared Decision-Making Questionnaire and compared across gender, age, education, physical status, surgery type, and anaesthesia type.*

Results: *The questionnaire showed good reliability (α = .88). The mean score was 78.27 ± 11.40 out of 100 (range 51.11–100), and 33% of patients scored 73.3 or lower. Item means ranged from 4.85 to 4.98 out of 6. Being asked which option the patient preferred was the lowest-rated step, and being told that a decision was needed was the highest. Perceived shared decision-making did not differ by any patient characteristic (all P > .63).*

Conclusion: *Patients perceived a high and uniform level of shared decision-making after structured counselling but asking for the patient's*

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preference was the weakest step. Training anaesthesia nurses and anaesthetists to ask explicitly for patient preference is a simple, targeted improvement.

INTRODUCTION

Shared decision-making (SDM) asks clinicians to do more than obtain consent. They should make clear that a choice exists, explain the options and their trade-offs, ask what the patient prefers, and reach a decision together (de Mik et al., 2018). Anaesthesia is well suited to this approach because general and regional techniques are often equally appropriate, and many surgical patients want a say in which one they receive (Pennington et al., 2023).

In practice, SDM in anaesthesia is often incomplete. Stubenrauch et al. (2017) observed pre-anaesthesia consultations and found that independent raters scored the level of SDM as low, although patients rated the same consultations highly. Qualitative work shows that patients are sometimes guided towards a technique without being asked what matters to them (Graff et al., 2021). The steps of SDM also do not carry equal weight. In a large national survey, satisfaction with health decisions was most closely linked to helping patients understand information, asking about their preferences, and weighing options together (Glass et al., 2012). Identifying the weakest step therefore gives a clearer target for improvement than a single total score.

Almost all of this evidence comes from Europe and North America. In Pakistan and other South Asian countries, preoperative decisions are usually led by clinicians, consultations are short, and patients may defer to doctors for cultural reasons. Nurses are increasingly involved in preoperative education, yet their role in SDM for anaesthesia has rarely been examined. It is not known whether structured counselling can achieve high perceived SDM in this context, which steps patients rate lowest, or whether some groups, such as older or less educated patients, feel less involved than others.

This study is a secondary analysis of a quasi-experimental study of SDM counselling for anaesthesia choice; its effect on satisfaction is reported separately (Blinded for review). This study aimed to (a) describe the level of patient-perceived SDM after structured pre-anaesthesia counselling, (b) identify the SDM steps that patients rated lowest, and (c) examine whether perceived SDM differed across demographic and clinical subgroups.

Methods

Study Design

This is a secondary, descriptive analysis of post-intervention data from a single-group pretest–posttest quasi-experimental study. Only the SDM measurement taken after counselling was used. The study is reported in line with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines (von Elm et al., 2007).

Setting and Sample

The study was conducted at three tertiary care hospitals in Rawalpindi, Pakistan, between April 2026 and July 2026 All sites provided both general and regional anaesthesia. Inclusion criteria were age 20–65 years, elective urological, orthopedic, gynecological, or general surgery for which both techniques were clinically appropriate, ability to communicate in Urdu or English, at least one previous operation, and willingness to give written consent. Patients were excluded if they had a psychiatric or cognitive disorder, a history of substance misuse, current anxiolytic or sedative use, or previous structured SDM counselling at the same hospital.

The sample size of the parent study was calculated with G*Power 3.1 (Faul et al., 2009); with a medium effect size ($d^* = 0.5$), $\alpha = .05$, and power = .80, at least 34 participants were required. Of 132 patients approached, 32 were excluded (22

incomplete questionnaires, 4 lost to follow-up, 2 did not present for surgery, and 4 converted from regional to general anaesthesia), leaving 100 patients with complete data.

Data Collection Tools

Personal information form. This form recorded age, gender, education level, American Society of Anesthesiologists (ASA) physical status, type of surgery, number of previous operations, and the anaesthesia technique chosen.

9-item Shared Decision-Making Questionnaire (SDM-Q-9). The SDM-Q-9 is a patient-reported measure of involvement in a clinical decision (Kriston et al., 2010). Each of its nine items reflects one step of SDM and is rated from 1 (*completely disagree*) to 6 (*completely agree*). Item scores were summed and converted to a 0–100 scale, with higher scores indicating greater perceived involvement. The SDM-Q-9 has shown high reliability and a single-factor structure in several populations (Rencz et al., 2019). In this study, Cronbach's α was .88 (95% CI [.84, .91]) (Tavakol & Dennick, 2011).

Intervention

Each patient received one face-to-face counselling session lasting 15–20 minutes, delivered by the first author, a registered nurse with master's-level training, under the supervision of a consultant anaesthetist. The session had five steps: (a) a balanced description of general and regional anaesthesia, including what the patient would experience; (b) a comparison of risks and benefits tailored to the patient and the procedure; (c) time for questions and concerns, answered in plain language; (d) a teach-back check of understanding; and (e) a joint decision combining clinical suitability with patient preference. The structure drew on published approaches to SDM in anaesthesia (Flierler et al., 2013; Stubenrouch et al., 2017).

Data Collection

The personal information form was completed at the pre-anaesthesia clinic 24–48 hours before surgery. The SDM-Q-9 was self-completed in Urdu or English immediately after the counselling session, principle researcher administered the questionnaire and counselling.

Statistical Analysis

Data were analyzed using IBM SPSS Statistics version 26 (IBM Corp., Armonk, NY, USA). Item and total scores were summarized as mean and standard deviation (*SD*). For description, total scores were grouped into tertiles (low ≤73.3, moderate 73.4–84.4, high >84.4). Internal consistency was assessed with Cronbach's α. The total score was normally distributed (Shapiro–Wilk $W = 0.98$, $P = .14$). Differences across two-group variables (gender, age ≤40 vs. >40 years, ASA status, anaesthesia type) were tested with independent-samples *t* tests, and across four-group variables (education, type of surgery) with one-way analysis of variance (ANOVA). Levene's test confirmed homogeneity of variance (all $P > .17$). Statistical significance was set at $P < .05$ (two-tailed).

Ethical Considerations

Approval was obtained from the institutional review board of Armed Forces Post Graduate Medical Institute Rawalpindi (Approval No: 699-AAA-ERC-AFPGMI Date: 16th April 2026) and from the participating hospitals. The study followed the Declaration of Helsinki. All patients gave written informed consent, participation was voluntary, and patients could withdraw at any time without any effect on their care. The final choice of anaesthesia remained with the patient and the clinical team. Data were anonymized and stored securely.

Results

The mean age of the 100 patients was 44.62 ± 14.19 years; 62.0% were women and 62.0% were older than 40 years. Education was none or primary in 13.0%, secondary in 35.0%, undergraduate in 37.0%, and postgraduate in 15.0%. Half were ASA I (51.0%). Surgery was orthopedic (31.0%), general (29.0%), urological

(21.0%), or gynecological (19.0%). After counselling, 53.0% chose regional and 47.0% chose general anaesthesia. All patients had at least one previous anaesthetic.

The mean SDM-Q-9 total score was 4.91 ± 0.57 on the 1–6 scale, or 78.27 ± 11.40 on the 0–100 scale (range 51.11–100). By tertile, 33.0% of patients reported comparatively low SDM (≤73.3), 40.0% moderate SDM, and 27.0% high SDM (>84.4).

All item means were above 4.8 out of 6 (Table 1). The highest-rated step was being told that a decision had to be made (Item 1; 4.98 ± 0.77). The lowest-rated step was being asked which option the patient preferred (Item 6; 4.85 ± 0.81), followed by being asked how the patient wanted to be involved (Item 2; 4.88 ± 0.76) and being told that there were different options (Item 3; 4.88 ± 0.83). Item 8, selecting an option together, showed the widest spread of responses (*SD* = 0.89).

Perceived SDM did not differ significantly by gender, age group, ASA status, anaesthesia type, education, or type of surgery (all $P > .63$) (Table 2). Group means differed by no more than about 2 points on the 0–100 scale.

Discussion

After a short, structured counselling session, patients in a Pakistani tertiary care setting reported a high level of SDM, with a mean of 78 out of 100. This level was similar across gender, age, education, ASA status, type of surgery, and the technique chosen. The step that patients rated lowest was being asked which option they preferred.

A mean of 78 shows that structured SDM can be delivered within 15–20 minutes in a busy, traditionally clinician-led system. This is important because lack of time is the barrier to SDM most often reported by anaesthetists (Stubenrouch et al., 2017). The present mean was lower than the median of about 92% reported for the SDM-Q-9 in a Dutch pre-anaesthesia clinic, and one-third of our patients scored 73 or below (Stubenrouch et al., 2017). High patient ratings should, however, be read with caution. In the Dutch study, observer-rated SDM in the same consultations was low. Patients who are grateful, deferential, or unfamiliar with SDM may rate any respectful conversation highly. Our scores therefore show how involved patients felt, not how much SDM objectively took place.

The item-level pattern is the most practical finding of this study. Patients rated the informational steps highly, such as being told a decision was needed, understanding the information, and weighing the options. They rated the preference-related steps lowest, namely being asked which option they preferred and how they wanted to be involved. The differences between items were small (0.13 points on a 6-point scale) and should not be overinterpreted. Even so, this ordering is consistent with known patterns in anaesthesia, in which clinicians often explain options well but then recommend one rather than inviting the patient to choose (Graff et al., 2021). It also matters for outcomes, because eliciting preferences is one of the three SDM steps most strongly linked to satisfaction with health decisions (Glass et al., 2012). Flierler et al. (2013) similarly found that patients who received less involvement than they wanted were the least satisfied.

Older, less educated, and higher-risk patients were expected to report lower involvement, as is often assumed in South Asian settings. This was not the case, as all subgroup differences were within about 2 points. A standardised script with a teach-back step may reduce the variation that arises when clinicians adjust their communication to their own assumptions about a patient. This uniformity should be confirmed in larger samples, because this study could not detect small differences between the four education levels.

These findings have implications for anaesthesia nursing. First, counselling protocols should include an explicit preference question once the options have been explained, for example: "Having heard about both options, which would you prefer, and why?" Second, counselling in this

study was delivered by a nurse under anaesthetist supervision, which supports a defined role for anaesthesia nurses in pre-anaesthesia education and SDM. Such a role could reduce pressure on anaesthetists in understaffed services, but it would require clear training standards, competency assessment, and scope-of-practice guidance. Third, the SDM-Q-9 item profile can serve as a simple audit tool to monitor which steps of SDM are being missed.

Study Limitations

This study has several limitations. First, SDM was measured only by patient report, without an observer-rated measure such as OPTION-5 or a clinician-reported measure. Second, the counselling was delivered by a member of the research team, which may have encouraged favourable ratings. Third, high scores and narrow item ranges suggest a ceiling effect, which limits the ability to detect differences. Fourth, there was no comparison with usual care, so the increase in perceived SDM attributable to counselling cannot be estimated. Fifth, all patients had previous surgical experience and may therefore have been more confident participants than first-time surgical patients. Finally, the subgroup analyses had limited power and were not adjusted for multiple testing.

Conclusion and Recommendations

Structured pre-anaesthesia counselling produced a high and uniform level of perceived SDM across patient groups in a Pakistani tertiary care setting. Asking patients directly which option they prefer was the weakest step and is a simple target for staff training. Anaesthesia nurses are well placed to deliver this counselling. It is recommended that future studies compare patient-reported with observer-rated SDM, include a usual-care comparison group, include patients facing surgery for the first time, and test whether improving preference elicitation improves patient outcomes.

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Table 1. SDM-Q-9 Item Scores After Counselling (*N* = 100; Scale 1–6)

SDM-Q-9 item (SDM step)	Mean	*SD*
1. Made clear that a decision needs to be made	4.98	0.77
7. Thoroughly weighed the options together	4.97	0.76
5. Helped me understand all the information	4.95	0.80
9. Reached an agreement on how to proceed	4.92	0.75
4. Explained the advantages and disadvantages of the options	4.90	0.81
8. Selected a treatment option together	4.89	0.89
2. Wanted to know how I want to be involved	4.88	0.76
3. Told me there are different options	4.88	0.83
6. Asked me which option I prefer	4.85	0.81
Total score (1–6 scale)	4.91	0.57
Total score (0–100 scale)	78.27	11.40

Note. Items are sorted from highest to lowest mean; numbers are the original SDM-Q-9 item numbers, and wording is abbreviated. SDM = shared decision-making; SDM-Q-9 = 9-item Shared Decision-Making Questionnaire; *SD* = standard deviation.

Table 2. Comparison of SDM-Q-9 Total Scores (0–100) by Patient Characteristics

Characteristic	Group (*n*)	Mean ± *SD*	Test statistic	*P*
Gender	Male (38)	78.13 ± 10.75	$t = -0.09$	.93
	Female (62)	78.35 ± 11.86		
Age	≤40 years (38)	77.66 ± 11.96	$t = -0.41$	.68
	>40 years (62)	78.64 ± 11.12		
ASA status	I (51)	77.73 ± 11.57	$t = -0.48$	.64
	II (49)	78.82 ± 11.30		
Anaesthesia chosen	General (47)	78.11 ± 12.20	$t = -0.13$	.90
	Regional (53)	78.41 ± 10.75		
Education	Four levels	76.66–78.83	$F = 0.06$	.98
Type of surgery	Four types	77.32–78.83	$F = 0.09$	.96

Note. t = independent-samples t test ($df = 98$); F = one-way ANOVA ($df = 3, 96$). ANOVA = analysis of variance; ASA = American Society of Anesthesiologists; SDM-Q-9 = 9-item Shared Decision-Making Questionnaire; *SD* = standard deviation.