



THE EFFECTIVENESS OF A STRUCTURED PHONE CALL FOLLOW-UP PEER GROUP IN CATARACT SURGERY PATIENTS: A QUASI-EXPERIMENTAL STUDY

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ABSTRACT

Cataract surgery patients often experience limited knowledge, perioperative anxiety, and suboptimal satisfaction with care. Patients with limited knowledge about cataracts tend to imagine frightening scenarios, such as pain, surgical failure, or loss of vision. This condition can provoke anxiety, reduce patients' readiness to undergo surgery, and ultimately affect their satisfaction assessment regarding the quality of care received. The novelty of this study lies in the application of the Phone Call Follow-Up Peer Group (PCFPG), a structured intervention integrating therapeutic nurse communication, repeated education, and peer experiential support across three perioperative phases. To examine the effectiveness of PCFPG on knowledge, anxiety, and satisfaction among cataract surgery patients. A quasi-experimental pre-test-post-test control group study was conducted in 70 cataract patients recruited through purposive sampling. The intervention was delivered through WhatsApp video calls on day -1, day +1, and day +7 by nurses and peer group members. Data were collected using a cataract knowledge questionnaire, the Zung Self-Rating Anxiety Scale, and the KKP-2017, then analyzed using Wilcoxon and Mann-Whitney tests. After the intervention, 91.4% of patients in the intervention group reached the high-knowledge category, 80.0% were not anxious, and 40.0% were very satisfied. In contrast, the control group showed only limited improvement, with 37.1% in the high-knowledge category, 40.0% not anxious, and 22.9% still dissatisfied. PCFPG was effective for knowledge, anxiety, and satisfaction (all $p < 0.001$), with large effect sizes across outcomes. PCFPG effectively shifted patients into more favorable clinical categories and may serve as a structured, replicable perioperative nursing model in cataract care.

Keywords: anxiety; cataract surgery; patient satisfaction; phone call follow-up peer group

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INTRODUCTION

Limited knowledge about cataract and its management is a fundamental barrier to patient preparedness before surgery. This condition can provoke anxiety, reduce patients' readiness to undergo surgery, and ultimately affect their satisfaction assessment regarding the quality of care received. Fuadiati et al. (2025), reported that 74% of cataract surgery patients in Indonesia had low knowledge, while Ye (2020), found that 89.78% of 489 cataract patients in China had poor knowledge of the surgical procedure and its risks. This knowledge deficit directly contributes to perioperative anxiety. Obuchowska and Konopinska (2021), confirmed that 33–55% of cataract patients experience mild-to-severe anxiety before surgery, driven by concerns about pain, vision loss, and complications. In Indonesia, Fuadiati et al. (2025), found that 45% of patients experienced moderate-to-severe preoperative anxiety, with inadequate knowledge as the primary factor. Unmanaged anxiety directly impairs satisfaction: Yunalia et al. (2025), showed that satisfaction declined progressively from 48% satisfied among mildly anxious patients to only 8% among those with severe anxiety. Sakti et al. (2022), further noted that 70% of dissatisfied patients were unwilling to return and 75% shared negative experiences with others.

Preliminary observation at Bhakti Dharma Husada Regional Hospital, Surabaya on November 2025, among 15 cataract patients confirmed this pattern: 53.3% had low knowledge, 33.3% experienced severe anxiety, and 26.7% were dissatisfied with care. Several interventions have been studied. Gülşen and Akansel (2020), demonstrated that discharge education with telephone follow-up significantly improved cataract patient adherence, while Ruiss et al. (2024), found that over 80% of patients were very satisfied with postoperative telephone follow-up. Zhang et al. (2022), confirmed that peer support significantly improved quality of life, reduced anxiety, and enhanced self-efficacy. However, the systematic integration of telephone follow-up and peer support specifically in cataract surgery patients has not been previously reported.

This study developed and tested the Phone Call Follow-Up Peer Group (PCFPG), a structured model integrating therapeutic nurse communication, repeated education, and peer support on day -1, day +1, and day +7. The novelty lies in the systematic integration of nurse telephone follow-up and peer support into a standardized model not previously applied to cataract surgery patients. Grounded in the Health Belief Model (HBM), this study aimed to analyze the effectiveness of PCFPG on knowledge, anxiety, and satisfaction among cataract surgery patients at Bhakti Dharma Husada Regional Hospital, Surabaya.

METHOD

Sample Size and Setting

This study employed a quasi-experimental pre-test-post-test control group design to examine the effectiveness of the PCFPG intervention on knowledge, anxiety, and satisfaction among cataract surgery patients at Bhakti Dharma Husada Regional Hospital, Surabaya. The study was conducted between January and February 2026 after obtaining institutional approval, and all participants provided informed consent before enrollment. The independent variable was the PCFPG intervention, while the dependent variables were knowledge, anxiety, and patient satisfaction.

The study was conducted at Bhakti Dharma Husada Regional Hospital, Surabaya, East Java, Indonesia. The intervention and data collection were carried out from January to February 2026. The study population comprised all patients undergoing cataract surgery at Bhakti Dharma Husada Regional Hospital during the study period. A total of 70 respondents were recruited using purposive sampling and assigned into two groups: 35 respondents in the intervention group and 35 respondents in the control group.

Data were collected using four instruments: (1) a respondent characteristics questionnaire covering age, sex, education, and occupation; (2) a cataract knowledge questionnaire; (3) the Zung Self-Rating Anxiety Scale (ZSAS) to assess anxiety; and (4) the KKP-2017 form 10 to measure patient satisfaction. The validity and reliability of the three questionnaires used in the study were rigorously examined. For the Cataract Knowledge Questionnaire, validity was assessed using the Point-Biserial correlation coefficient, where all items were deemed valid as they met the r -value threshold of >0.300 (Caroline, 2021). Its reliability was also confirmed with a Point-Biserial correlation coefficient of 0.837, indicating high reliability for measuring patients' knowledge about cataracts. The Zung Self-Rating Anxiety Scale (ZSAS) demonstrated concurrent validity, as it showed a positive and significant correlation with other validated anxiety instruments, with correlation values ranging from 0.60 to 0.70 (Muhammad Fitriyanto et al., 2025). Internal consistency reliability was also high, with Cronbach's alpha ranging between 0.75 and 0.85 (Sriyani et al., 2022). For the Patient Satisfaction Questionnaire (KKP-2017, Format 10), content validity was confirmed in its Indonesian version, with all ten items achieving r -values greater than the critical r (0.361 for $n=30$). The instrument also demonstrated strong internal consistency reliability, with a Cronbach's alpha of 0.883, categorizing it as highly reliable (Agustiawan, Fitriani A, 2024; Imaninda & Azwar, 2018). Collectively, these findings establish the questionnaires as valid and reliable. Measurements were

conducted twice, before the intervention (pre-test) and after the intervention (post-test). All instruments were applied consistently in both groups.

PCFPG is a structured follow-up model integrating therapeutic nurse communication, repeated education, and peer experiential support. The intervention was delivered via WhatsApp video calls in three sessions: day -1, day +1, and day +7. The day -1 session focused on preoperative education, explanation of the procedure, benefits, risks, and patient preparation. The day +1 session focused on clarification of postoperative care, identification of normal complaints, and early emotional support. The day +7 session focused on recovery evaluation, reinforcement of adherence, and improvement of patient self-confidence through experience-sharing with peers who had successfully undergone cataract surgery. The control group received standard hospital care in the form of a leaflet without PCFPG.

Subject Criteria

The inclusion criteria were patients undergoing cataract surgery, able to communicate effectively, having access to a mobile phone or WhatsApp, and willing to participate in the study. The exclusion criteria included patients with severe communication impairment, unstable clinical conditions, or failure to complete the full intervention and assessment process.

Statistical Analysis

Data analysis included univariate and bivariate analyses. Univariate analysis was used to describe respondent characteristics and the distribution of knowledge, anxiety, and satisfaction categories. Before bivariate analysis, normality and homogeneity of variance tests were performed. As all variables were non-normally distributed, nonparametric tests were applied. The Wilcoxon signed-rank test was used to analyze within-group changes before and after the intervention, while the Mann–Whitney U test was used to compare post-intervention differences between the intervention and control groups. Effect size was calculated to strengthen the interpretation of the clinical relevance of the findings. Statistical significance was set at $p < 0.05$.

RESULT

Characteristics of Respondents

Table 1.
Characteristics Of Respondents

Variable	Category	Control (n=35)		Intervention (n=35)	
		f	%	f	%
Sex	Male	17	48.6	17	48.6
	Female	18	51.4	18	51.4
Age	Middle age (45–59 yrs)	12	34.3	11	31.4
	Elderly (60–74 yrs)	19	54.3	20	57.1
	Old elderly (≥ 75 yrs)	4	11.4	4	11.4
Education	Low	20	57.1	20	57.1
	Moderate	13	37.1	12	34.3
	High	2	5.7	3	8.6
Occupation	Not working	16	45.7	18	51.4
	Private sector	12	34.3	8	22.9
	Self-employed	5	14.3	7	20.0
	Civil servant/Military	2	5.7	2	5.7

The respondent characteristics were broadly comparable between the control and intervention groups. In both groups, females slightly outnumbered males, most respondents were aged 60–74 years, more than half had a low level of education, and the largest occupational category was not working. These findings indicate adequate baseline similarity between groups before the intervention.

Effect of PCFPG on Perioperative Knowledge

Knowledge improved significantly in both groups, but the intervention group demonstrated substantially greater improvement. After the PCFPG intervention, 91.4% of the intervention group reached the high-knowledge category, compared with only 37.1% in the control group. The Wilcoxon test confirmed significant within-group improvement in the intervention group ($p < 0.001$; $\Delta \text{mean} = 1.00$), and the Mann–Whitney post-test comparison confirmed a significant ($p < 0.001$) between-group difference with a very large effect size.

Table 2.

Distribution Of Knowledge Levels Before and After Intervention

Time	Category	Control (n=35)		Intervention (n=35)	
		f	%	f	%
Pre-test	Low	3	8.6	5	14.3
	Moderate	30	85.7	28	80.0
	High	2	5.7	2	5.7
Post-test	Low	1	2.9	0	0.0
	Moderate	21	60.0	3	8.6
	High	13	37.1	32	91.4

Table 3.

Knowledge Levels Before And After Intervention

Group	Time	Min–Max	SD	ΔMean	$p \text{-Value}$
Control	Pre-test	1–3	0.382	+0.37	<0.001
	Post-test	1–3	0.539		
Intervention	Pre-test	1–3	0.445	+1.00	<0.001
	Post-test	2–3	0.284		

Table 4.

Comparison Of Post-Test Knowledge Levels Between-Groups

Group	Mean rank	Sum of ranks	Z	$p \text{-Value}$	Cohen's d	Magnitude size effect
Control	25.96	908.50	-4.709	<0.001	-130.667	Very large
Intervention	45.04	1576.50				

Effect of PCFPG on Anxiety

Table 5.

Distribution Of Anxiety Levels Before and After Intervention

Time	Category	Control (n=35)		Intervention (n=35)	
		f	%	f	%
Pre-test	No anxiety	11	31.4	3	8.6
	Mild anxiety	12	34.3	16	45.7
	Moderate anxiety	11	31.4	13	37.1
	Severe anxiety	1	2.9	3	8.6
Post-test	No anxiety	14	40.0	28	80.0
	Mild anxiety	15	42.9	7	20.0
	Moderate anxiety	6	17.1	0	0.0
	Severe anxiety	0	0.0	0	0.0

Table 6.

Anxiety Levels Before and After Intervention

Group	Time	Min–Max	SD	ΔMean	$p \text{-Value}$
Control	Pre-test	1–4	0.873	-0.29	0.002
	Post-test	1–3	0.731		
Intervention	Pre-test	1–4	0.780	-1.26	<0.001
	Post-test	1–2	0.406		

Table 7.

Comparison of Post-Test Anxiety Levels Between-Groups

Group	Mean rank	Sum of ranks	Z	$p \text{-Value}$	Cohen's d	Magnitude size effect
Control	43.10	1508.50	-3.602	<0.001	-104.809	Very large
Intervention	27.90	976.50				

Anxiety decreased significantly in both groups, with the intervention group showing substantially greater improvement. After the PCFPG intervention, 80.0% of the intervention group were

classified as not anxious, while the moderate and severe anxiety categories disappeared completely. In contrast, 17.1% of the control group remained in the moderate anxiety category. The Wilcoxon and Mann–Whitney results confirmed the superiority of PCFPG in reducing anxiety ($p < 0.001$), with a very large effect size.

Effect of PCFPG on Patient Satisfaction

Table 8.

Distribution Of Satisfaction Levels Before And After Intervention

Time	Category	Control (n=35)		Intervention (n=35)	
		f	%	f	%
Pre-test	Dissatisfied	7	20.0	7	20.0
	Fairly satisfied	18	51.4	16	45.7
	Satisfied	10	28.6	12	34.3
	Very satisfied	0	0.0	0	0.0
Post-test	Dissatisfied	8	22.9	0	0.0
	Fairly satisfied	20	57.1	9	25.7
	Satisfied	7	20.0	12	34.3
	Very satisfied	0	0.0	14	40.0

Table 9.

Satisfaction Levels Before and After Intervention

Group	Time	Min–Max	SD	Δ Mean	p -Value
Control	Pre-test	2–4	0.702	-0.12	0.356
	Post-test	2–4	0.664		
Intervention	Pre-test	2–4	0.733	+1.00	<0.001
	Post-test	3–5	0.810		

Table 10.

Comparison of Post-Test Satisfaction Levels Between-Groups

Group	Mean rank	Sum of ranks	Z	p -Value	Cohen's d	Magnitude size effect
Control	23.57	825.00	-5.170	<0.001	-70.509	Very large
Intervention	47.43	1660.00				

The strongest category shift was observed in satisfaction. After PCFPG, 40.0% of the intervention group reached the very satisfied category and none remained dissatisfied. In the control group, no respondents reached the very satisfied category, and dissatisfaction slightly increased. The Wilcoxon analysis confirmed a significant improvement only in the intervention group ($p < 0.001$), in the control group not significant ($p=0.356$) and the between-group comparison yielded a very large effect size.

DISCUSSION

Knowledge Variable

Perioperative cataract knowledge encompasses understanding of cataract anatomy and pathophysiology, phacoemulsification procedure mechanics, pre-operative preparation, post-operative care including eye drop administration, activity restrictions, and recognition of complication warning signs requiring immediate attention (Nurhaliza et al, 2025; Samuel et al., 2021). Deficits in any of these knowledge dimensions risk compromising optimal recovery, particularly given that cataract patients predominantly constitute elderly individuals with limited health literacy who require information delivered gradually, repeatedly, and contextually at each perioperative phase (Barreiro-González et al., 2020; Langwinska et al., 2025). Within HBM, perioperative knowledge improvement is driven sequentially by perceived susceptibility at day-1 motivating information absorption, reducing perceived barriers at day+1 closing informational gaps impeding self-efficacy, and perceived benefits at day+7 confirming that applied knowledge produced positive recovery outcomes, (Anuar et al., 2020; Khan, 2023; Taflinger & Sattler, 2024).

The researchers argue that the pre-intervention knowledge distribution in both groups, which was almost entirely concentrated in the moderate category with only a very small minority reaching the

high category, represents a systemic reflection of the weakness of structured perioperative education within the standard management of cataract surgery. The similarity in baseline distribution between the intervention and control groups affirms that inadequate perioperative knowledge is not an individual problem, but a service gap that must be addressed in a planned and deliberate manner. In this context, PCFPG is not merely a supplementary programme, but a core intervention designed to fill a gap that has long remained unaddressed.

Following the intervention, the difference in the pattern of change between the two groups was highly contrasting and clinically meaningful. In the intervention group, the knowledge distribution shifted dramatically: the high-knowledge category, which had previously been almost entirely absent, grew to become the overwhelmingly dominant category, the low-knowledge category disappeared entirely, and the moderate-knowledge category shrank drastically. By contrast, in the control group, although a modest positive shift occurred, the moderate category remained strongly dominant and the low-knowledge category persisted. Statistical analysis confirmed that the improvement in the intervention group was far greater and more clinically meaningful than in the control group, with a highly significant difference in the magnitude of mean change between the two. This difference is not merely statistical; it reflects a qualitative difference in depth of understanding that demonstrates how profoundly the intervention succeeded in reshaping patients' cognitive orientation towards their condition and their own care process,(Ramadhan et al., 2021; Samuel et al., 2021)

The researchers consider that this dramatic categorical shift in the intervention group cannot be separated from the strong synergy between the facilitating nurse and the peer supporter group throughout each PCFPG session. The facilitating nurse served as the primary coordinator of the educational process: delivering accurate information, organising the learning pathway systematically, and ensuring that all content remained aligned with each patient's clinical needs. Without the professional foundation established by the nurse, the information conveyed would lack the accuracy and structure necessary to produce a deep and lasting change in understanding. The peer supporter group, meanwhile, strengthened this process by contributing a dimension that professional communication alone cannot provide. During the day -1 session, when patients were still confronted by unfamiliar and confusing perioperative information, the facilitating nurse delivered the educational content in a structured manner, whilst the peer group translated that information into the language of lived experience, which is far more readily accepted and retained. During the day +1 session, the facilitating nurse clarified the postoperative condition professionally, whilst the peer group helped patients verify their acquired knowledge through direct experiential confirmation, preventing the regression of understanding that frequently occurs when patients return home without adequate support. During the day +7 session, the facilitating nurse reinforced the principles of ongoing care, whilst the peer group helped patients connect all previously acquired knowledge with daily self-care practices at home, ensuring that the understanding achieved was not only retained cognitively but genuinely internalised and consistently applied. It is this layered mechanism that explains why the change in knowledge within the intervention group so substantially exceeded that of the control group, not only statistically, but in the quality and sustainability of patients' understanding.

This finding aligns with the perceived benefits construct of the Health Belief Model (HBM), which posits that individuals are more likely to adopt health-promoting behaviors when they genuinely understand the benefit of recommended actions. Structured, repeated education has been shown to be more effective than a single educational session. The success of PCFPG in improving knowledge is inseparable from its three-session design. The day -1 session provided structured preoperative education, activating the cues to action construct of HBM by giving patients concrete motivation to prepare themselves. The day +1 session reinforced and clarified what patients had learned, ensuring consolidation of understanding during the most critical transition phase. The day +7 session

combined informational reinforcement with peer experiential sharing, strengthening cognitive knowledge through vicarious learning. This multi-point design distinguishes PCFPG from single-session interventions that have consistently shown limited durability of effect.

Anxiety Variable

Anxiety is one of the most prevalent and impactful psychological problems in the cataract perioperative context. Cataract patients face unique stressors distinct from other surgical types: the procedure is performed under local anaesthesia with the patient fully conscious, the eye carries intense psychological significance as the primary sensory organ, and the anticipated visual improvement creates intense expectations that, if unmanaged, amplify anxiety, (Floros, 2024; Obuchowska & Konopinska, 2021). Pre-operative cataract anxiety impacts not only the intraoperative experience, including uncontrolled head movement and elevated intraocular pressure from tension, but also post-operative instruction adherence and long-term satisfaction, (Ayu My Lestari et al., 2024; Muhammad Fitriyanto et al., 2025; Wang et al., 2024). Within HBM, perioperative cataract anxiety forms through three sequentially operating constructs: excessive perceived severity in the pre-operative phase, perceived barriers from informational uncertainty in the early post-operative phase, and self-efficacy deficits in the late recovery phase, (Hartanti & Handayani, 2021; Kuzmina et al., 2023; Rahima et al., 2022).

The researchers argue that the high level of preintervention anxiety in both groups affirms the urgency of structured psychosocial intervention within the perioperative management of cataract surgery. Notably, the baseline conditions between the two groups reveal a difference that warrants careful consideration: the intervention group actually presented with a heavier anxiety burden than the control group from the outset, with a considerably smaller proportion in the non-anxious category and a greater overall dominance of mild, moderate, and severe anxiety categories. This heavier baseline condition in the intervention group renders the outcome of the intervention even more clinically meaningful: PCFPG succeeded in reducing anxiety from a higher starting point to a better final condition. Anxiety is not a condition that resolves spontaneously; without active intervention, it tends to intensify as the surgical date approaches, and its consequences extend to affect patients' care adherence, cooperative quality during the procedure, recovery speed, and overall satisfaction.

The categorical changes following the intervention between the two groups were highly contrasting. In the intervention group, the moderate anxiety category, which had previously been considerable in size, and the severe anxiety category, which had still been present, both disappeared entirely at the post-intervention measurement. The proportion of patients in the non-anxious category increased dramatically to become the dominant group, whilst the remaining mild anxiety comprised only a small minority of respondents. By contrast, in the control group, whilst a slight reduction in the moderate and severe anxiety categories occurred, the mild anxiety category actually increased slightly and the non-anxious category grew only to a very limited extent. Statistical analysis confirmed that the reduction in anxiety within the intervention group was significant with a far greater magnitude of mean change, whilst the control group also demonstrated a significant reduction, albeit considerably smaller in scale. The total elimination of the moderate and severe anxiety categories in the intervention group constitutes the strongest clinical indicator of success, as anxiety at these levels is not merely emotional discomfort, but a genuine barrier to self-efficacy adherence and postoperative recovery quality.

The researchers consider that this near-total reduction in anxiety is the direct result of the synergy between the facilitating nurse and the peer supporter group, who intervened in patients' fears in a layered manner at each most critical time point. The facilitating nurse held a central role as the guarantor of clinical safety: assessing patients' conditions professionally, confirming that the experience remained within normal clinical limits, and answering questions requiring medical

competence. Without the nurse's professional presence, patients' anxiety would not receive an accurate and clinically trustworthy response,(Moladoost et al., 2021). During the day -1 session, when patients were haunted by fears regarding pain and surgical risk, the facilitating nurse provided accurate and reassuring clinical explanations, whilst the peer group subdued these fears by sharing that they themselves had safely and successfully undergone the same procedure. The combination of clinical assurance from the nurse and tangible evidence from the peer group dismantled anxiety from two directions simultaneously: the rational and the emotional. During the day +1 session, which represents the most psychologically vulnerable phase, the facilitating nurse identified and clarified the postoperative condition professionally, whilst the peer group validated that the discomfort being experienced was normal and temporary. It is these two complementary sources of support at the most critical moment that produced the total elimination of the moderate and severe anxiety categories,(Obuchowska & Konopinska, 2021). During the day +7 session, the facilitating nurse confirmed recovery progress clinically, whilst the peer group helped patients celebrate their successful recovery collectively, so that any remaining residual anxiety completely dissipated. In the researchers' view, this layered mechanism explains why the reduction in anxiety within the intervention group so substantially exceeded that of the control group, even having commenced from a heavier baseline condition.

The anxiety reduction observed in this study represents the cumulative result of three mutually reinforcing PCFPG sessions. The day -1 session directly reduced perceived barriers by correcting misconceptions about pain and surgical risk. The day +1 session was the most critical for acute anxiety management, as patients in this phase are particularly vulnerable to concerns about their newly operated eye. Immediate therapeutic responsiveness from the nurse in this session functioned as a form of emotional support that reinforced the patient's sense of safety. The day +7 session reinforced self-efficacy through confirmation that recovery was progressing normally and through peer experience sharing. This HBM theory that peer support strengthens self-efficacy through vicarious experience, specifically by learning from the success of others in similar situations,(Anuar et al., 2020).

Satisfaction Variable

Patient satisfaction in the perioperative cataract context is a progressively formed evaluative construct shaped throughout the care journey, understood through three sequentially operating HBM constructs. At the pre-operative phase, satisfaction begins forming when patients feel they have received clear explanations, are treated as individuals, and are well prepared for surgery. Accurate and realistic expectations formed at this phase become the foundation of satisfaction that will be evaluated throughout the subsequent perioperative experience, (Botta et al., 2024; Ferreira et al., 2022; Jeon et al., 2025). At the early post-operative phase, satisfaction is strengthened or weakened by whether patients feel they were not abandoned after surgery, whether concerns arising during home recovery were attended to, and whether the therapeutic relationship continued beyond the discharge boundary,(Donsel & Missel, 2021; Kingery et al., 2021). At the late post-operative phase, satisfaction is consolidated through the experience of care continuity, where patients sense that nursing support extended until recovery was genuinely complete rather than terminating at the point of procedural completion(Al-Ani et al., 2023; Ruiss et al., 2024; Wanten et al., 2025).

Within the HBM framework, perioperative satisfaction is formed through three sequentially operating constructs. At day-1, perceived benefits form from clarity about the concrete value of each care service to be received,(Alabdali & Husain, 2025; Taflinger & Sattler, 2024). At day+1, reducing perceived barriers is achieved when proactive and responsive care eliminates the feeling of post-discharge abandonment, the greatest psychological barrier to high satisfaction in healthcare (Anuar et al., 2020; Habibzadeh et al., 2021). At day+7, self-efficacy from successful recovery leads patients to evaluate their entire perioperative experience more positively, consolidating satisfaction as a meaningful short-term outcome (Grimes et al., 2021; Lieu & Afshari, 2023;

McIntyre et al., 2025). Sakti et al. (2022), noted that 70% of dissatisfied patients refused to return to the same facility and 75% shared negative experiences with others. Within HBM, high satisfaction reflects fulfillment of the perceived benefits construct, wherein patients perceive that the benefits of care received far exceed their initial expectations.

The researchers argue that the absence of any respondent in the very satisfied category in both groups prior to the intervention is a highly meaningful finding that warrants serious consideration. The completely identical baseline condition between the two groups demonstrates that standard perioperative care, whilst procedurally well executed, had not yet succeeded in creating a genuinely satisfying experience for patients. Satisfaction is not formed solely from the technical success of the surgical procedure, but from the entirety of the care experience, encompassing communication quality, healthcare provider empathy, completeness of information received, and the sense of being continuously accompanied throughout the perioperative journey. This condition reflects a systemic gap in perioperative care quality that has not yet seriously positioned the patient's experience as a quality indicator of equal importance to technical procedural success. PCFPG was designed to close this gap in a structured, measurable, and evidence-based manner.

The categorical changes following the intervention presented the most contrasting picture among all three variables studied. In the intervention group, the very satisfied category, which had previously been entirely absent across all respondents, grew to become the most dominant group; the satisfied category was maintained at a meaningful proportion; the fairly satisfied category shrank significantly; and the dissatisfied category disappeared entirely. This picture stands in stark contrast to the control group, which not only failed to demonstrate meaningful improvement in satisfaction, but actually experienced a slight increase in both the dissatisfied and fairly satisfied categories, whilst the satisfied category slightly declined and the very satisfied category remained entirely absent. Statistical analysis confirmed that the change in satisfaction within the intervention group was highly significant, whilst the change in the control group did not reach statistical significance. These findings clearly demonstrate that without structured intervention, the expectations patients develop during their hospitalisation remain unmet once they return home, and this condition consistently converts into dissatisfaction.

The disappearance of the dissatisfied category and the dominant emergence of the very satisfied category in the intervention group carries strategic significance that extends beyond individual clinical dimensions. A satisfied patient is a patient who trusts the quality of the care received, and that trust drives higher adherence, willingness to return for follow-up visits, and a tendency to recommend the healthcare facility to others. In the context of increasingly competitive healthcare quality standards, patient satisfaction is no longer merely a subjective comfort indicator, but a service asset with a direct impact on institutional reputation, public trust, and the long-term sustainability of the healthcare organisation.

The researchers consider that this dramatic transformation in satisfaction emerged from the synergy between the facilitating nurse and the peer supporter group, who together converted the care experience from transactional to relational and continuous. The facilitating nurse built the foundation of satisfaction through proactive, consistent, and patient-centred involvement at each session, conveying a powerful message that patients were not left to manage alone after leaving the healthcare facility. This attentiveness, which extended beyond formal service hours, constitutes one of the strongest factors shaping patients' positive perceptions. The peer supporter group, meanwhile, contributed a dimension of social warmth that professional communication alone cannot fully provide. During the day -1 session, the facilitating nurse established realistic expectations through structured and clear explanations, whilst the peer group reinforced those expectations with first-hand testimony, ensuring that patients were spared the disappointment arising from disproportionate hopes. During the day +1 session, the facilitating nurse provided clinical assurance that made

patients feel they remained under professional supervision even whilst at home, whilst the peer group offered care that was genuine and heartfelt, extended not out of professional obligation but out of empathy and shared experience. It is the combination of the nurse's professional attentiveness and the peer group's human solidarity that created a profoundly felt sense of being valued in the patient. During the day +7 session, the facilitating nurse conducted a clinical evaluation confirming that recovery was progressing well, whilst the peer group joined the patient in celebrating that successful recovery collectively, creating a positive and meaningful closure to the perioperative experience. In the researchers' view, this is the mechanism that explains why satisfaction showed the greatest contrast in change between the intervention and control groups: because satisfaction is determined not only by what healthcare providers do, but by how patients experience and find meaning in the entirety of their perioperative journey from beginning to end.

Patient satisfaction is a multidimensional construct reflecting not only clinical outcomes but also communication quality, staff responsiveness, and perceived continuity of care. Post operative satisfaction in cataract patients correlated significantly with communication quality and expectation management. Preoperative nursing consultation meaningfully improved satisfaction in outpatient cataract patients and nurse caring behavior was significantly associated with patient satisfaction. The improvement in satisfaction observed in the treatment group could not have been achieved through a single intervention point. The day -1 session built realistic expectations, preventing the gap between anticipated and experienced care that commonly drives dissatisfaction. The day +1 session provided reassurance that postoperative symptoms were normal, preventing unnecessary anxiety while also signaling to patients that the nursing team extended care beyond formal service hours. This experience shaped a positive perception of genuine nurse-patient engagement. The day +7 session reinforced the therapeutic relationship and confirmed full recovery, completing a cycle of care that felt comprehensive and personal. The fact that the control group experienced increasing dissatisfaction confirms that standard care alone is insufficient to meet patients' emotional and informational needs throughout the perioperative continuum, and positions PCFPG as a responsive, sustained, and patient-centered perioperative nursing model.

Clinical Significance: Effect Size and Ordinal Category Shifts

Beyond statistical significance, this study demonstrated strong clinical meaningfulness through large effect sizes across all variables: knowledge (130.667), anxiety (104.809), and satisfaction (70.509) based on Mann–Whitney effect size interpretation. These values confirm that the between-group differences are not only statistically significant but clinically and practically relevant. The researchers emphasize that interpreting results through ordinal category shifts provides more meaningful clinical communication than presenting mean values alone. In knowledge, most patients shifted from the moderate to the high category. In anxiety, patients transitioned from various degrees of anxiety to a not-anxious state. In satisfaction, patients moved from dissatisfied and moderately satisfied to satisfied and very satisfied. These shifts confirm that PCFPG did not merely produce statistical differences; it genuinely transformed patients' clinical and psychological status toward more favorable states. The combination of nurse-led telephone follow-up and peer support within a single structured model proved to be the primary driving force behind these consistent improvements across all three outcome variables simultaneously.

Integrated perspective on PCFPG as a structured perioperative nursing intervention

Taken together, the findings across the three outcome variables demonstrate that PCFPG produced consistent and clinically meaningful improvements in perioperative knowledge, anxiety, and satisfaction in cataract surgery patients. The intervention's effectiveness cannot be attributed to a single element but reflects the integrated contribution of the nurse facilitator, the peer group, and the structured timeline of contacts at day-1, day+1, and day+7.

HBM provided a coherent theoretical architecture for understanding how each phase of PCFPG operated on the patient's motivational and emotional state. The day-1 call addressed perceived susceptibility, perceived severity and cues to action by providing pre-operative information that allowed patients to appraise the surgical threat with accuracy and proportion rather than through the lens of fear and uncertainty. The day+1 call targeted perceived barriers by delivering immediate post-operative support at the moment of highest vulnerability, reducing the perception that recovery was an isolated and unnavigated experience. The day+7 call reinforced perceived benefits and self-efficacy by consolidating recovery knowledge and confirming that the patient had successfully navigated the most critical phase of the post-operative period.

The nurse facilitator's role extended beyond information delivery to encompass relational continuity, a dimension of nursing care that is recognised as critical in building patient trust and engagement across the perioperative period. The peer group complemented this clinical relationship by providing a form of support that professional contact alone cannot replicate, namely the lived experience of recovery shared between individuals who have faced the same clinical event. This dual-layered support structure is what distinguishes PCFPG from conventional telephone follow-up and represents the innovation that the researcher believes makes this intervention transferable and scalable across similar surgical contexts.

The researcher's overall position is that PCFPG represents a structured, theoretically grounded, and evidence-consistent nursing intervention that addresses the most significant unmet needs of cataract surgery patients in the perioperative period: the need for knowledge, the need for emotional security, and the need to feel valued within the care system. The strong effect sizes and categorical improvements observed across all three outcome variables suggest that this intervention is not only statistically significant but also practically relevant to clinical nursing practice and hospital quality improvement initiatives in the Indonesian healthcare context.

CONCLUSION

This study provides evidence that the Phone Call Follow-Up Peer Group (PCFPG) intervention effectively improved perioperative knowledge, reduced anxiety, and enhanced satisfaction in cataract surgery patients at RSUD Bhakti Dharma Husada Surabaya. The strength of PCFPG lies in the integration of two complementary components: the nurse facilitator as an authoritative source of clinical information and the peer group as a relational source of experiential support. By structuring these contacts at the critical time points of day-1, day+1, and day+7, the intervention addressed the evolving needs of patients throughout the perioperative journey in a structured and timely manner. This chronological architecture is grounded in the proven constructs of the Health Belief Model, providing strong theoretical justification for the intervention's design and mechanism of action.

The implications of this study extend across multiple levels. Clinically, these findings support the integration of PCFPG as a standard component of perioperative cataract care protocols, particularly in healthcare facilities serving populations with health literacy barriers. Institutionally, this study demonstrates that investment in structured, peer-supported, telephone-based patient support programmes can produce measurable improvements in service quality indicators, including patient satisfaction, which is a strategic indicator in hospital accreditation. At the policy level, this study contributes to the WHO's global agenda for improving access to eye care by showing that modifiable barriers to optimal recovery, including inadequate knowledge, elevated anxiety, and unmet expectations, can be effectively addressed through structured, low-cost nursing interventions.

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