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From Burned Out to Ownership: A Participation and Ownership Programme Built on the Listen-Align-Promote Approach for a Multinational Operating Room Team

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ABSTRACT:

Background: Operating room staff work under time pressure, long standing hours and changing lists, and exhaustion in these teams goes together with unplanned absence and weaker safety performance.

Aim: To assess the effect of a Participation and Ownership Programme, built on the Listen–Align–Promote approach, on staff engagement, sick leave and reported safety incidents among operating room staff of different nationalities over twelve months.

Subjects and Methods: A single-group before-and-after interventional study was carried out over twelve consecutive months in the main operating room complex of a tertiary care hospital, and 150 nursing and allied theatre staff completed both assessments. Engagement was measured with the nine-item Utrecht Work Engagement Scale, burnout with an instrument prepared for operating room staff, and teamwork with a short anonymous questionnaire, while sick leave and reported incidents were drawn from existing unit records for the year before and the year during the programme. The programme ran in three phases, listening, alignment and promotion, joined by a Catalyst Lab in which small staff-led groups tested practical changes through short improvement cycles.

Results: Total engagement rose from 28.6 ± 6.3 to 34.2 ± 5.7 ($p < 0.001$). Emotional exhaustion fell from 27.0 ± 7.0 to 21.6 ± 6.4 ($p < 0.001$), depersonalisation fell ($p = 0.002$) and personal accomplishment rose ($p < 0.001$). The total teamwork score rose from 24.0 ± 4.4 to 29.6 ± 3.8 ($p < 0.001$). Sick leave fell from 8.2 ± 3.5 to 7.1 ± 3.0 days ($p = 0.012$) and reported incidents from 1.2 ± 1.1 to 0.7 ± 0.8 per member of staff ($p < 0.001$). The gain in engagement did not differ between nationality groups, roles, experience bands or shift patterns (all $p > 0.05$).

Conclusion: The programme was followed by higher engagement, lower burnout, better teamwork, fewer sick leave days and fewer reported incidents, with gains spread evenly across the multinational team, which supports a unit-level approach that changes how the theatre is run.

INTRODUCTION

The operating room is one of the most demanding places to work in any hospital. Staff move between cases under fixed time pressure, handle lists that change without warning, and carry heavy physical and mental loads through long shifts. Nurses working in theatres describe tiredness that starts before the shift begins and continues after it ends. (Li et al., 2025)

Burnout is described as emotional exhaustion, growing distance from the work itself, and a falling sense of personal achievement. It develops slowly, and colleagues often notice it before the person does. Pooled data gathered during and after the pandemic years showed that a large share of nurses reach levels of exhaustion that affect daily functioning. (Galanis et al., 2021)

Theatre work carries its own sources of strain, which differ from those found on general wards. Measurement tools have been prepared specifically for operating room nurses, covering long standing hours, exposure to conflict during procedures, limited control over the daily list, and the constant need for exact performance without visible reward. (Teymoori et al., 2024)

Exhausted staff do not carry the cost alone. Evidence pooled from a large number of nursing studies links burnout with weaker safety climate, more adverse events, and lower patient satisfaction, and the link holds across age, sex, years of experience and country. The quality of care therefore moves together with the state of the team. (Li et al., 2024)

Burnout also appears in the ordinary records every unit already keeps. Higher burnout scores among hospital staff go together with unplanned absence from duty and with more frequent thoughts of leaving the job. These are the figures a manager reads each month, long before anyone speaks openly about being tired. (Lee et al., 2023)

The wider workforce picture makes each absence heavier than it looks. The global nursing workforce reached about 29.8 million in 2023, while a shortage of roughly 5.8 million remained and was spread unevenly between regions. Where staffing is already tight, one sick day is absorbed by the colleagues who came to work. (World Health Organization, 2025)

Engagement sits at the opposite end of the same scale. Nurses whose managers listen to them, connect their work to a clear purpose and support their growth report more energy and dedication and fewer signs of exhaustion, with job resources and inner motivation carrying much of this effect. Leadership behaviour is therefore a working condition, not an optional extra. (Kohnen et al., 2024)

Many theatre teams are formed of staff from several countries, each with a different first language, training route and habit of addressing seniors. Differences of this kind can slow handovers and keep concerns unspoken, while shared understanding, open forums and mentoring improve teamwork and daily communication inside the same team. (Theron et al., 2025)

A practical way to describe the change being sought is a move from exhaustion towards ownership. Psychological ownership is the feeling that the unit, the work and its results belong to the person doing them. Among hospital nurses, this feeling carried much of the effect of fair working conditions on vigour at work. (El-Gazar et al., 2024)

The same feeling also keeps people in place. Nurses who felt ownership of their profession reported a stronger intention to stay, and this feeling changed how strongly satisfaction with work and family balance influenced that intention. Ownership therefore acts on energy and on retention at the same time. (Nnadozie et al., 2022)

Listening is the first step of the proposed approach, and it means more than sending out a form. Staff in theatres speak about hierarchy, fear of blame and poor timing of debriefing as reasons for staying silent. Unhurried conversation and a safe space to raise a concern are what make feedback honest enough to act upon. (McElroy et al., 2024)

Aligning means joining each person's own goals to the goals of the unit and giving staff a real share in decisions that shape their practice. Where clinical nurses take part through unit-based councils, decisions are reached jointly with management rather than handed down, and both satisfaction and quality of care improve alongside. (Tumala, 2025)

Promoting covers ownership of roles, chances to lead a small project or committee, and steady recognition of effort. In a survey of nurse managers, giving feedback and reward received the lowest score of all leadership behaviours, while leadership overall was related to work engagement ($p < 0.001$). Recognition is often the easiest gap for a unit to close. (Nurmeksela et al., 2025)

Simple recognition habits have already been tested in practice. A short digital exercise asking health care workers to record three good things from their working day produced measurable improvement in emotional exhaustion and mood, at almost no cost and with very little time taken away from the shift. (Gold et al., 2023)

A Catalyst Lab gives this sense of ownership a working form. It is a protected space inside the unit where front-line staff bring a problem from their own shift, shape a small change, test it on a limited scale and decide together whether to keep it. Hospital

staff support labs of this kind when they are built into daily structures, offer protected time and deal with problems met in their own area of work. (Agha-Mir-Salim et al., 2026)

Reviews of workplace programmes for nurses and physicians report benefit from both person-directed and organisation-directed approaches, and note that results depend heavily on how well the programme fits the unit receiving it. Packages copied from elsewhere without adjustment tend to fade within a few months. (Cohen et al., 2023)

Pooled work on burnout programmes for clinical nurses points the same way, with reductions in emotional exhaustion after structured interventions and better results when sessions are repeated over months instead of delivered once. Duration and follow-up appear to matter as much as the content itself. (Lee & Cha, 2023)

How staff think and feel also shapes what a programme can achieve. Emotional intelligence, resilience and a sense of empowerment work together to raise engagement among nurses in high-pressure units, which suggests that a programme should build personal skills as well as change the way the unit is run. (Abualruz et al., 2024)

Most published work describes how common burnout is and which factors travel with it. Far fewer reports follow one operating room team through a named set of steps, with agreed targets and with routine unit data collected before and after. The present work was planned to address that gap in a team made up of several nationalities. (Li et al., 2024)

Aim of the Work

The aim of this work was to assess the effect of a Participation and Ownership Programme, built on the Listen–Align–Promote approach, on staff engagement, sick leave and reported safety incidents among operating room staff of different nationalities over a period of twelve months.

SUBJECTS AND METHODS

Study design

This was a single-group, before-and-after interventional study with a quality-improvement design, carried out over twelve consecutive months. Each participant serves as his or her own control, since the same staff are assessed before the programme begins and again after it was completed.

Conceptual framework

The programme was organised around the Listen–Align–Promote approach, with the Catalyst Lab concept serving as the working link between its three phases. Concerns raised during listening formed the entry list for the lab, changes that succeeded in the lab were passed to the unit council for adoption, and staff who led them received ownership of the change and public recognition.

Each change tested in the lab followed a plan–do–study–act cycle, starting on a small scale, stating the expected result in advance and using data collected over time before any wider use. This structure was chosen so that staff ideas were judged on local evidence rather than on seniority or on the confidence of the person proposing them. (Taylor et al., 2014)

Study setting

The study was conducted in the main operating room complex of a tertiary care hospital serving a mixed adult and paediatric surgical population. The complex runs elective and emergency lists across several surgical specialties, on a three-shift rota that includes nights, weekends and on-call cover. The nursing and technical staff of the complex are of several nationalities and work in fixed and rotating teams.

Study population

All nursing and allied theatre staff working in the operating room complex during the study period are invited to take part, including scrub nurses, circulating nurses, anaesthesia technicians, surgical technologists and support staff assigned to the unit. Participation was voluntary and refusal carries no effect on duty allocation, appraisal or any other aspect of employment.

Inclusion criteria

Staff are included if they hold a permanent or long-term contract in the operating room complex, have completed at least three months of service in the unit before the baseline assessment, and remain assigned to the unit for the whole twelve-month period. Participants must be able to read the questionnaires in English or in a validated translation.

Exclusion criteria

Staff on temporary assignment of less than three months, those on extended leave covering more than half of the study period, and those who transfer out of the complex before the final assessment are excluded from the paired analysis. Staff who decline written consent are also excluded, although unit-level records remain part of the routine data.

Study tools

A personal and occupational data sheet was used to record age, sex, nationality group, professional role, qualification, total years of nursing experience, years in theatre work, shift pattern and marital status. Records of unit sick leave and of reported safety incidents are collected from the existing administrative and quality systems and are not created for the study.

Work engagement was measured with the Utrecht Work Engagement Scale in its short nine-item form, which covers vigour, dedication and absorption, and which has been used widely in nursing samples of this kind. (Nurmekeela et al., 2025)

Burnout was measured with an instrument designed for the three recognised components, namely emotional exhaustion, depersonalisation and reduced personal accomplishment, using a version prepared for operating room staff so that the sources of strain specific to theatre work are captured. (Teymoori et al., 2024)

Perceived teamwork, openness of communication and readiness to raise a concern are assessed with a short structured questionnaire completed anonymously, and are supported by open questions in the listening sessions to capture points that a rating scale cannot reach. (Theron et al., 2025)

The programme

The programme was applied in three phases across the twelve months, and each phase runs alongside normal clinical duty without additional unpaid time. Sessions are scheduled at the start of the shift or during protected time agreed with the surgical lists, so that attendance does not depend on staff staying beyond their working hours.

In the listening phase, an anonymous survey and a series of small focus groups of six to eight staff are held during the first two months, with groups arranged so that mixed nationalities and mixed roles sit together. Short individual check-ins of about ten minutes are then held with each member of staff and repeated at intervals through the year.

In the alignment phase, each member of staff sets two personal goals for the year in a brief meeting with the unit leadership, and these goals are written against the stated goals of the unit and the department. Staff representatives from each nationality group and each role join a unit council that reviews practice decisions, rota problems and equipment issues on a monthly basis.

In the promotion phase, staff are invited to take ownership of a defined area of the unit, such as instrument sets, stock control, orientation of new staff, infection prevention rounds or audit of a single safety measure. Recognition was delivered through a monthly short meeting, a written note of thanks and a visible board that records completed work by name.

The Catalyst Lab ran across the three phases from the third month onward. A lab group of eight to ten staff, mixed by nationality, role and shift pattern, met for forty-five minutes every two weeks in protected time, and membership rotated every three months so that every member of staff had the chance to take part during the year.

Ideas reached the lab from the listening sessions, the individual check-ins and an open idea board placed in the staff area. Each idea was written as a single problem statement, given one named owner and a small partner group, and tested for two to four weeks on one list, one theatre or one shift before any wider use.

At each meeting, the group reviewed simple run data from the test, such as minutes of delay, missing items or gaps in handover, and chose to adopt, adapt or abandon the change. Adopted changes were presented to the unit council for approval, and the name of the owner and the result were added to the recognition board.

Data collection

Baseline data are collected during the month before the programme starts, and the same measures are repeated during the twelfth month. Sick leave days and reported safety incidents are extracted for the twelve months before and the twelve months during the programme. Questionnaires are distributed in sealed envelopes and returned to a locked box to protect anonymity.

Attendance at listening sessions, alignment meetings and Catalyst Lab sessions was recorded in a single attendance log, and the total number of sessions attended by each member of staff formed the programme attendance figure used in the correlation analysis. The lab also kept a log of each idea tested and of the decision taken on it.

Ethical considerations

Approval was obtained from the institutional research and ethics committee before any data are collected. Written informed consent was taken from every participant after an explanation of the purpose, the voluntary nature of the work and the right to withdraw at any point. Questionnaires carry a code number instead of a name, and no individual result is shared with line management or linked to appraisal.

Data were stored on a password-protected device accessible only to the research team, and are reported at group level throughout.

Statistical analysis

Data were entered and analysed using standard statistical software. Quantitative variables are presented as mean and standard deviation when normally distributed and as median with range when they are not, while qualitative variables are presented as number and percentage. Normality was checked with the Shapiro–Wilk test before any comparison was made.

The paired t test was used to compare engagement and burnout scores before and after the programme when the distribution allows it, and the Wilcoxon signed rank test was used when it does not. Sick leave rates and incident counts before and after are compared with the appropriate test for paired counts.

Differences between nationality groups, roles, experience bands and shift patterns are examined with one-way analysis of variance or the Kruskal–Wallis test, followed by the relevant post-hoc comparison. Correlation between engagement scores and sick leave days was assessed with the Pearson or Spearman coefficient according to distribution, and a p value below 0.05 was taken as statistically significant.

RESULTS

Table 1: Demographic and Occupational Characteristics of the Study Participants (N = 150)

Variable	Category	n	%
Age group	24–30 years	38	25.3
	31–40 years	62	41.3
	41–50 years	39	26.0
	> 50 years	11	7.3
Sex	Male	53	35.3
	Female	97	64.7
Nationality	Filipino	38	25.3
	Indian	30	20.0
	Egyptian	22	14.7
	Jordanian	15	10.0

	Saudi	15	10.0
	South African	12	8.0
	Sudanese	10	6.7
	Pakistani	8	5.3
Professional role	Scrub Nurse	45	30.0
	Circulating Nurse	38	25.3
	Anaesthesia Technician	30	20.0
	Surgical Technologist	22	14.7
	Support Staff	15	10.0
Qualification	BSN	48	32.0
	Diploma in Nursing	36	24.0
	BSc Health Science	28	18.7
	Associate Degree	22	14.7
	MSN	16	10.7
Theatre experience	1–5 years	52	34.7
	6–10 years	48	32.0
	> 10 years	50	33.3
Shift pattern	Fixed Day	50	33.3
	Fixed Night	50	33.3
	Rotating	50	33.3
Marital status	Single	44	29.3
	Married	88	58.7
	Divorced	18	12.0

Table 1 presents the personal and occupational characteristics of the 150 operating room staff who completed both assessments. The majority of the sample were female (64.7%) and aged between 31 and 40 years (41.3%). Eight nationalities were represented, with Filipino staff forming the largest group (25.3%), followed by Indian (20.0%) and Egyptian (14.7%). Scrub nurses made up the largest professional group (30.0%), and nearly one third of the sample held a Bachelor of Science in Nursing. Theatre experience was spread fairly evenly across the three bands, and shift patterns were distributed in equal thirds across fixed day, fixed night and rotating schedules.

Table 2: Work Engagement Scores Before and After the Programme (UWES-9)

Variable	Pre Mean $\pm$ SD	Post Mean $\pm$ SD	Mean Diff	t / Z	p-value
UWES-9 Total (0–54)	28.6 $\pm$ 6.3	34.2 $\pm$ 5.7	5.6	8.42	< 0.001*
Vigour (0–18)	9.3 $\pm$ 2.6	11.1 $\pm$ 2.3	1.8	6.91	< 0.001*
Dedication (0–18)	9.9 $\pm$ 2.5	11.7 $\pm$ 2.2	1.8	7.14	< 0.001*
Absorption (0–18)	9.4 $\pm$ 2.7	11.4 $\pm$ 2.4	2.0	7.38	< 0.001*

* Statistically significant at $p < 0.05$. Paired t-test used for all comparisons.

Table 2 shows the comparison of work engagement scores measured by the Utrecht Work Engagement Scale (short form) before and after the twelve-month programme. The total UWES-9 score rose from 28.6 ± 6.3 at baseline to 34.2 ± 5.7 at the final assessment, representing an increase of 19.6% that exceeded the pre-set target of ten per cent ($p < 0.001$). All three subscales showed a parallel pattern, with vigour, dedication and absorption each rising by approximately two points.

Table 3: Burnout Subscale Scores Before and After the Programme

Burnout Subscale	Pre Mean $\pm$ SD	Post Mean $\pm$ SD	Mean Diff	t / Z	p-value
Emotional Exhaustion (0–54)	27.0 ± 7.0	21.6 ± 6.4	–5.4	7.56	$< 0.001^*$
Depersonalisation (0–30)	9.0 ± 3.7	7.5 ± 3.1	–1.5	–3.12†	0.002^*
Personal Accomplishment (0–48)	32.8 ± 5.1	36.0 ± 4.7	3.2	6.23	$< 0.001^*$

* Statistically significant at $p < 0.05$. Paired t-test for EE and PA; † Wilcoxon signed-rank test for DP.

Table 3 displays the change in the three burnout subscales over the study period. Emotional exhaustion fell by 5.4 points, a reduction of 20.0% from the baseline level ($p < 0.001$). Depersonalisation decreased from 9.0 ± 3.7 to 7.5 ± 3.1 ($p = 0.002$), and personal accomplishment rose from 32.8 ± 5.1 to 36.0 ± 4.7 ($p < 0.001$).

Table 4: Perceived Teamwork and Communication Scores Before and After the Programme

Teamwork Domain	Pre Mean $\pm$ SD	Post Mean $\pm$ SD	Mean Diff	t	p-value
Open Communication	2.9 ± 0.8	3.7 ± 0.7	0.8	9.14	$< 0.001^*$
Readiness to Raise Concern	2.8 ± 0.9	3.6 ± 0.7	0.8	8.72	$< 0.001^*$
Trust in Team	3.1 ± 0.8	3.8 ± 0.7	0.7	8.10	$< 0.001^*$
Handover Quality	3.0 ± 0.8	3.7 ± 0.7	0.7	7.86	$< 0.001^*$
Cross-Cultural Understanding	2.9 ± 0.9	3.6 ± 0.7	0.7	7.54	$< 0.001^*$
Conflict Resolution	3.0 ± 0.8	3.7 ± 0.7	0.7	7.92	$< 0.001^*$
Psychological Safety	3.1 ± 0.8	3.8 ± 0.7	0.7	8.20	$< 0.001^*$
Overall Teamwork	3.2 ± 0.8	3.9 ± 0.6	0.7	8.56	$< 0.001^*$
Total Score (8–40)	24.0 ± 4.4	29.6 ± 3.8	5.6	12.30	$< 0.001^*$

* Statistically significant at $p < 0.05$. Paired t-test used for all comparisons.

Table 4 presents the eight teamwork and communication domains assessed before and after the programme. Every domain showed a statistically significant increase (all $p < 0.001$). The total teamwork score rose from 24.0 ± 4.4 to 29.6 ± 3.8 . The domains with the largest improvement were open communication and readiness to raise a concern, both of which gained 0.8 points on the five-point scale. These two domains reflect the core intent of the listening phase of the programme, during which staff were given structured opportunities to speak about problems without fear of blame. Cross-cultural understanding also improved, which is relevant to the multinational composition of the team.

Table 5: Sick Leave and Reported Safety Incidents Before and After the Programme

Outcome	Pre (12 months)	Post (12 months)	Change	Z	p-value
Sick leave days (Mean $\pm$ SD)	8.2 ± 3.5	7.1 ± 3.0	–1.1 (↓ 13.4%)	–2.51	0.012^*
Sick leave days (Median, IQR)	8 (5–11)	7 (5–9)	–1		
Safety incidents (Mean $\pm$ SD)	1.2 ± 1.1	0.7 ± 0.8	–0.5 (↓ 41.7%)	–3.82	$< 0.001^*$
Safety incidents (Median, IQR)	1 (0–2)	1 (0–1)	0		
Staff with zero incidents, n (%)	52 (34.7%)	78 (52.0%)	+26 (+17.3%)		$< 0.001^\ddagger$

* Statistically significant at $p < 0.05$. Wilcoxon signed-rank test; ‡ McNemar test for proportions.

Table 5 compares sick leave days and reported safety incidents for the twelve months before and the twelve months during the programme. The mean number of sick leave days fell from 8.2 ± 3.5 to 7.1 ± 3.0 , a reduction of 13.4% that met the pre-set target of ten per cent ($p = 0.012$). The mean number of safety incidents per person fell from 1.2 ± 1.1 to 0.7 ± 0.8 , a reduction of 41.7% ($p < 0.001$). The proportion of staff who recorded zero safety incidents over the year rose from 34.7% to 52.0% ($p < 0.001$), moving the unit closer to the stated goal of maintaining a position on the zero-harm safety board

Table 6: Correlations Between Key Study Variables at Post-Programme Assessment

Variable Pair	r	p-value	Direction
Post UWES-9 Total Post EE	-0.54	< 0.001*	Negative (higher engagement, lower exhaustion)
Post UWES-9 Total Post PA	0.61	< 0.001*	Positive (higher engagement, higher accomplishment)
Post UWES-9 Total Post Teamwork Total	0.48	< 0.001*	Positive
Post UWES-9 Total Post Sick Leave Days	-0.32	< 0.001*	Negative (higher engagement, fewer sick days)
Post EE Post Sick Leave Days	0.38	< 0.001*	Positive (higher exhaustion, more sick days)
Post Teamwork Total Post Safety Incidents	-0.29	< 0.001*	Negative (better teamwork, fewer incidents)
Change UWES-9 Change EE	-0.46	< 0.001*	Negative
Change UWES-9 Change Sick Leave	-0.27	0.001*	Negative
Programme attendance (sessions) Change UWES-9	0.34	< 0.001*	Positive (more attendance, greater improvement)

* Statistically significant at $p < 0.05$. Pearson r for normally distributed pairs; Spearman rho for non-normal pairs.

Table 6 shows the correlation matrix for the main study variables measured at the end of the programme. Work engagement was negatively correlated with emotional exhaustion ($r = -0.54$, $p < 0.001$) and positively correlated with personal accomplishment ($r = 0.61$, $p < 0.001$), confirming that engagement and burnout moved in opposite directions within the same individuals. Higher engagement was also associated with better teamwork scores ($r = 0.48$, $p < 0.001$) and fewer sick leave days ($r = -0.32$, $p < 0.001$). The change in engagement was correlated with programme attendance ($r = 0.34$, $p < 0.001$), indicating that staff who attended more sessions gained more benefit. Teamwork scores were negatively correlated with safety incidents ($r = -0.29$, $p < 0.001$), linking better communication with fewer reported events.

Table 7: Subgroup Comparison of Change in Work Engagement Score

Subgroup	Category	n	UWES Change Mean $\pm$ SD	Test	p-value
Nationality	Filipino	38	6.3 ± 4.8	ANOVA	0.41
	Indian	30	4.9 ± 5.1		
	Egyptian	22	6.0 ± 4.6		
	Jordanian	15	5.7 ± 4.9		
	Saudi	15	4.6 ± 5.3		
	Others	30	5.6 ± 5.0		
Role	Scrub Nurse	45	6.4 ± 4.7	ANOVA	

	Circulating Nurse	38	5.0 ± 5.0		
	Anaesthesia Tech.	30	5.1 ± 5.2		
	Surgical Tech.	22	5.3 ± 4.8		
	Support Staff	15	5.7 ± 5.4		0.58
Theatre experience	1–5 years	52	6.1 ± 4.9	ANOVA	
	6–10 years	48	5.2 ± 5.0		
	> 10 years	50	5.4 ± 4.8		0.52
Shift pattern	Fixed Day	50	5.4 ± 4.7	Kruskal-Wallis	
	Fixed Night	50	5.6 ± 5.2		
	Rotating	50	5.8 ± 4.9		0.73

One-way ANOVA or Kruskal-Wallis test as appropriate. No statistically significant difference between subgroups.

Table 7 examines whether the improvement in engagement differed according to nationality group, professional role, years of theatre experience and shift pattern. None of the between-group comparisons reached statistical significance (all $p > 0.05$). The mean change in UWES-9 total score ranged from 4.6 to 6.4 across all categories, with overlapping confidence intervals throughout. This finding indicates that the programme reached all subgroups of the multinational team without leaving any single nationality, role or shift pattern behind.

DISCUSSION

Burnout in the operating room grows out of conditions that are built into the work itself rather than out of any single event, and staff describe heavy lists, long standing hours, limited emotional support and little sense of progress as the main sources of strain (Li et al., 2025). When exhaustion settles into a theatre team it does not stay with the individual, since pooled evidence from a large body of nursing research links burnout with a weaker safety climate, more adverse events and lower nurse-rated quality of care (Li et al., 2024).

Exhaustion also shows itself in the ordinary records a unit already keeps, because higher burnout scores among hospital staff carry higher odds of unplanned absence from duty (Lee et al., 2023).

The present study set out to assess the effect of a Participation and Ownership Programme, built on the Listen–Align–Promote approach, on staff engagement, sick leave and reported safety incidents in a multinational operating room team followed over twelve months. The reasoning behind the programme was that engagement is shaped by what managers do and by the resources they place around staff, and that leadership behaviour therefore acts as a working condition rather than as an optional addition (Nurmeksela et al., 2025), and that a sense of ownership over the unit is one of the paths through which fair working conditions reach a nurse's daily energy (El-Gazar et al., 2024).

The present study found that the team was made up mainly of female staff in the early middle years of their careers, drawn from eight nationalities, with Filipino staff forming the largest group and scrub nurses the largest professional group, and with theatre experience and shift patterns spread almost evenly across the categories. This profile is close to the workforce described in the Gulf region, where mixed-nationality theatre and ward teams are the normal arrangement rather than the exception, and where staff work daily with colleagues trained in different systems and speaking different first languages (Theron et al., 2025).

The present study found that total work engagement rose by nearly one fifth over the twelve months, which passed the target of ten per cent set before the programme began ($p < 0.001$), and that vigour, dedication and absorption each moved upward by a similar margin (all $p < 0.001$). These findings align with Yue et al. (2024), who delivered a nurse–manager dualistic programme to burned-out intensive care nurses and reported higher work engagement and job crafting in the intervention group at the end of the programme ($p = 0.016$ for engagement), with the change driven by building both personal and work resources rather than by training staff alone. The findings are also in agreement with Nurmeksela et al. (2025), who measured engagement with the same short scale and found that nurses' evaluations of their managers' transformational behaviour were

related to engagement, while giving feedback and reward scored lowest of all the leadership behaviours assessed. The parallel rise across all three subscales in the present work fits that picture, since the programme worked on listening, shared decisions and recognition at the same time rather than on one of them.

The present study found that emotional exhaustion fell by one fifth ($p < 0.001$), depersonalisation fell as well ($p = 0.002$), and personal accomplishment rose ($p < 0.001$). The reduction in exhaustion and depersonalisation is in agreement with Lee and Cha (2023), whose pooled analysis of burnout programmes for clinical nurses supported reductions in these two dimensions, and whose results were stronger where sessions were repeated over months rather than delivered once. The improvement in personal accomplishment, however, is in contrast with the same review, which did not find evidence that interventions could lift low personal accomplishment, and whose authors explained this by saying that personal accomplishment depends on the work environment and is hard to shift in the long term. The present programme gave staff a named area of the unit to own, a place on a council that reviewed practice decisions, and public recognition of completed work, so the environment itself was changed rather than only the coping skills of the individual, which offers a reasonable account of why accomplishment moved here. The overall reduction in burnout is also in agreement with Hadi et al. (2026), who ran an eight-week caring-based quality of working life programme for hospital nurses and found lower burnout scores after the programme ($p = 0.003$) together with better professional performance.

The present study found that every teamwork and communication domain improved (all $p < 0.001$), and that the total teamwork score rose over the year. Open communication and readiness to raise a concern gained the most ground, while trust in the team, handover quality, cross-cultural understanding, conflict resolution, psychological safety and overall teamwork all improved by a similar margin. These findings align with Hassan et al. (2024), who applied a structured teamwork programme in a single-group before-and-after design and reported significant gains in nurses' teamwork perceptions and safety culture that were still present two months later. The two domains that moved most in the present study speak directly to the listening phase, and this pattern is in agreement with Soyer Er and Gül (2024), who studied surgical nurses and found that teamwork climate acted on safety climate, which in turn acted on the willingness to speak up about safety concerns and about unprofessional behaviour ($p < 0.01$). The gain in cross-cultural understanding is in agreement with Theron et al. (2025), who described shared forums, mentoring and open discussion as the practical facilitators of communication in a culturally mixed nursing workforce, and who identified language differences and unspoken hierarchy as the main barriers.

The present study found that sick leave days fell by more than one tenth ($p = 0.012$), meeting the target set for this outcome, and that reported safety incidents per member of staff fell by more than two fifths ($p < 0.001$), while the share of staff with no recorded incident over the year rose from about a third to about half ($p < 0.001$), which brought the unit closer to its stated aim of holding a place on the zero-harm safety board. The movement in absence is in agreement with Lee et al. (2023), who found that higher burnout scores, and exhaustion in particular, carried higher odds of unplanned absenteeism among hospital staff, so a unit that lowers exhaustion would be expected to see attendance follow. The movement in reported incidents is in agreement with Li et al. (2024), whose pooled analysis of eighty-five studies linked nurse burnout with a lower safety climate and with more adverse events, medication errors and falls, and reported that these associations held regardless of age, sex, years of experience or country.

The present study found a consistent pattern in the correlation analysis. Engagement at the end of the programme was negatively related to emotional exhaustion ($r = -0.54$, $p < 0.001$) and positively related to personal accomplishment ($r = 0.61$, $p < 0.001$), showing that the two constructs moved in opposite directions inside the same people. Engagement was also positively related to teamwork ($r = 0.48$, $p < 0.001$) and negatively related to sick leave days ($r = -0.32$, $p < 0.001$), while exhaustion was positively related to sick leave ($r = 0.38$, $p < 0.001$) and teamwork was negatively related to safety incidents ($r = -0.29$, $p < 0.001$). The change scores behaved in the same way, with the gain in engagement related to the fall in exhaustion ($r = -0.46$, $p < 0.001$) and to the fall in sick leave ($r = -0.27$, $p = 0.001$), and with programme attendance related to the size of the engagement gain ($r = 0.34$, $p < 0.001$). The link between engagement and exhaustion is in agreement with El-Gazar et al. (2024), who followed nurses across two waves and found that psychological ownership carried part of the effect of fair working conditions on vigour at work, which supports the idea that ownership is the mechanism sitting between what the unit offers and how much energy staff bring to the shift. The relation between teamwork and fewer incidents is in agreement with Soyer Er and Gül (2024), whose surgical nurses reported a positive relation between safety climate and the willingness to voice

a concern, and the relation between attendance and benefit is in agreement with Lee and Cha (2023), who found stronger effects for programmes delivered repeatedly over time.

The present study found that programme attendance, which included Catalyst Lab sessions, was related to the size of the engagement gain ($r = 0.34$, $p < 0.001$), and that personal accomplishment rose alongside open communication and readiness to raise a concern, the two teamwork domains that gained most. The Catalyst Lab offers a practical account of this pattern, since it turned concerns raised during listening into small changes that staff designed, tested and owned themselves. This is in agreement with Agha-Mir-Salim et al. (2026), who found that hospital staff support innovation labs that are embedded in hospital structures, focus on workflow problems in their own area and provide protected time, and that staff prefer flexible roles to commitments extending beyond clinical hours. The short, small-scale test cycles used in the lab also follow the features that Taylor et al. (2014) set out for sound use of the plan–do–study–act method, namely iterative cycles, small initial tests and use of data over time, which that review found missing from most published improvement work.

The present study found no difference in the size of the engagement gain between nationality groups ($p = 0.41$), professional roles ($p = 0.58$), bands of theatre experience ($p = 0.52$) or shift patterns ($p = 0.73$), with the mean change falling within a narrow range across every category. This even spread is in agreement with Li et al. (2024), who reported that the association between burnout and care outcomes was consistent across nurse age, sex, work experience and geography, which suggests that the mechanisms involved are shared rather than specific to one group. It is also in agreement with Tumala (2025), who studied shared professional governance at unit-council level in a multinational Gulf workforce and found that decisions were reached jointly between clinical nurses and management, with differences appearing by educational qualification ($p = 0.001$) and by nursing unit ($p = 0.010$) rather than by background. Taken together with the improvement in cross-cultural understanding reported here, the absence of subgroup differences indicates that the programme reached the whole team and did not leave any nationality, role or rota pattern behind.

LIMITATIONS

This work was carried out in a single operating room complex with one group and no parallel control, so improvements over the year cannot be separated with certainty from other changes in the hospital, from seasonal variation in surgical activity or from the effect of being observed. Engagement, burnout and teamwork were self-reported, which leaves room for social desirability and for the tendency of participants to answer a second questionnaire in the light of the first, and sick leave and incident figures were drawn from administrative and voluntary reporting systems, where a more open climate may itself alter how much is recorded. In addition, the Catalyst Lab ran alongside the other programme components, so its own share of the observed change cannot be separated from that of listening, alignment and recognition.

CONCLUSION

The present study showed that a twelve-month Participation and Ownership Programme built on listening, alignment and promotion, and put into practice through a staff-led Catalyst Lab, was followed by higher work engagement across all three of its components, lower emotional exhaustion and depersonalisation, higher personal accomplishment, better perceived teamwork and communication in every domain assessed, fewer sick leave days and fewer reported safety incidents, with more staff completing the year without any recorded event. Both pre-set targets for engagement and for sick leave were met, the gains were spread evenly across nationality groups, roles, experience bands and shift patterns, and staff who attended more sessions gained more. The results support a unit-level approach that changes how the theatre is run rather than one that asks staff to cope better with unchanged conditions, and they suggest that giving each member of a multinational team a named share of the work, a voice in decisions, a protected space to test their own ideas and steady recognition is a practical way to move a unit from exhaustion towards ownership.

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