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Evaluating the impact of reflective practice groups for nurses in an acute hospital setting

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ABSTRACT

Objective: This study represents phase one of a three-year research project aiming to investigate the impact of reflective practice groups for nurses.

Background: Evidence indicates that increased job demands, and inadequate support contribute to nursing burnout, reduced capacity and workplace attrition. There is some evidence that group interventions may help address such issues.

Study Design/Methods: This study utilised a cross-sectional, quantitative research methodology. Overall, 251 nurses completed questionnaires incorporating 11 validated subscales. Levels of compassion satisfaction, intolerance to uncertainty, inhibitory anxiety, group cohesiveness, psychological distress, and psychosocial safety were evaluated in relation to number of groups attended, for both individual nurses and work groups. The data was then examined alongside existing personal and job resources.

Results: Individual nurses who attended 6–18 reflective practice groups demonstrated increased tolerance to uncertainty and less inhibitory anxiety, whilst those who attended more than 18 groups demonstrated increased compassion satisfaction and group cohesiveness. There was, however, no evidence to indicate more pervasive, work group benefits.

Whilst the second part of the study confirmed that reflective practice group attendance was significantly correlated with increased compassion satisfaction, it was not able to explain changes in levels of burnout, secondary traumatic stress or compassion satisfaction over and above personal factors, job factors and levels of psychological distress.

Conclusion: Professional quality of life involves a complex set of variables. Reflective practice group attendance is correlated with a number of benefits for nurses however cause and effect were not clearly determined. A subsequent study will focus on the more subtle mechanisms and indirect effects of the groups on nurses' personal resources.

Relevance: This research supports the role of person and job factors in explaining professional quality of life for nurses and provides evidence to support a number of positive outcomes for nurses attending reflective practice groups; establishing a foundation for future studies to explore impacts and mediators in greater detail.

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What is already known about the topic?
- Personal and job resources can buffer against job demands to improve Professional Quality of Life (ProQoL).
- Nurses who lack personal resources are more likely to report burnout.

What this paper adds:
- Personal resources of autonomy, self-efficacy and optimism are particularly important for nursing ProQoL.
- Higher levels of RPG attendance are correlated with improved tolerance to uncertainty, reduced inhibitory anxiety, increased compassion satisfaction and improved group cohesion.
- An explanatory link between RPG and variations in ProQoL is still not clear as RPG attendance in itself was not found to account for changes in ProQoL over personal resources, job resources and job demands.
- The study identifies a direction for further research into the role RPG may play in the development of personal resources for nurses.

Keywords: Nursing, group supervision, reflective practice, compassion satisfaction, stress, burnout

INTRODUCTION

Working as a nurse can be both rewarding and demanding. Cumulative stress, moral dilemmas, emotional labour,[1] compassion fatigue,[2] high task demands,[3] and decreased job satisfaction can lead to burnout and cause nurses to leave the profession.[4,5] With a global shortage of nurses predicted, addressing such adverse workplace factors provides an increasing focus for research.[6]

The Job Demands-Resources framework (JDR) proposes that a positive working environment is established by increasing beneficial resources and decreasing unfavourable workplace demands.[7] Excessively high job demands can adversely affect nurses' physical and emotional health and potentially patient care.[3, 8, 9] while job resources relate to "physical, psychological, social, or organisational aspects of the job that are functional in achieving work goals; reduce job demands and the associated physiological and psychological costs; and stimulate personal growth, learning and development." [7 (p. 312)] The JDR model proposes that any increase in beneficial supports within the work environment can help mitigate associated adverse impacts.[7] The 2019 joint position statement by Australia's peak nursing bodies advocates that all nurses and midwives receive regular supervision as one such beneficial support.[10]

This study represents part of a three-year, multi-method evaluation of Reflective Practice Groups (RPG) as a form of group clinical supervision (GCS) for nurses. RPG focus on the interpersonal aspects of nursing care with the aim of providing support with and encouraging participants to explore this element of their clinical work, thereby contributing to positive patient outcomes.[11]

To date, evidence regarding the positive impacts of RPG has largely been qualitative in nature.[11,12] While beneficial, qualitative evidence does not always provide incentive for decision-makers and quantitative measures of these benefits are also required. Professional Quality of Life (ProQoL) represents one such construct that attempts to quantify both the positive (i.e., compassion satisfaction [CS]) and negative (i.e., burnout; secondary traumatic stress [STS]) factors associated with the caring professions. While these negative factors have been identified as issues of concern for nurses worldwide,[13,14] research has also linked the construct of ProQoL to a host of positive personal and organisational outcomes.[15,16.]

BACKGROUND

JOBS DEMANDS-RESOURCES MODEL/PROQOL

According to the JDR model,[17] there are a number of factors that impact a person's ProQoL in any working situation; job demands, job resources, personal resources, and organisational outcomes. Job demands have been defined as aspects of work that involve emotional or physical effort over a sustained period.[7] Such demands can result in STS and burnout leading to unfavourable work outcomes (e.g., reduced job performance; reduced organisational commitment). Resources can mitigate job demands by assisting attainment of work goals, personal growth, and professional development.[18] In a hospital environment, job resources can include supportive co-workers and opportunities for autonomy. Meanwhile, personal resources may include things such as self-efficacy, optimism, or experience. According to the JDR model, personal and job resources can buffer against job demands to improve ProQoL. Whilst compassion fatigue (CF) combines the negative elements of burnout and secondary traumatic stress (STS)[19], compassion satisfaction (CS) is associated with higher job satisfaction and the feeling of having a positive impact.[19]

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Employers of nurses should have ample incentive to improve ProQoL as unfavourable ProQoL outcomes can be correlated with reduced organisational commitment and increased turnover.[20] Jones estimated that hospitals incur an overall cost ranging between 62,100 and 67,100 USD for every registered nurse that leaves (e.g., training costs; loss of experience).[21.]

Of the resources identified by the JDR, social support has been considered one of the most effective in increasing work engagement and enhancing job satisfaction.[22,23] Social support from colleagues can also enhance staff wellbeing and CS,[24] whilst mitigating burnout and STS.[12, 23, 25] Circenis, Millere, and Deklava, and Stamm note the impact of effective CS on quality of care, possibly because nurses who are supported by their colleagues feel more confident and able to think more critically about their work. [26–28]

Although nurses may benefit from interventions that improve ProQoL, many feel they do not have the time or capacity to participate. For this reason, organisational initiatives and logistical support are important.

REFLECTIVE PRACTICE GROUPS

Reflective practice groups are a form of facilitated group supervision where clinical practice issues are discussed, unpacked, and reconceptualised in a supportive space, with a particular focus on interpersonal aspects of practice.[29] The title RPG reflects a primary focus on reflective practice and aims to decrease resistance from nurses to the term supervision; thereby increasing levels of participation. The group format also aims to assist the development of workplace cohesion and collegial support.[11] According to the JDR framework, RPG could be considered a job resource as they aim to provide a buffer against job demands.

The current literature provides evidence of the benefits of RPG and other forms of group clinical supervision. Factors such as social support and cognitive reappraisal,[16, 24] both important aspects of RPG, have been associated with increased CS. McVey and Jones assessed the value of RPG by interviewing 12 nurses who reported that RPG encourage a safe psychosocial climate, group cohesion and the development of professional skills through thoughtful conversation.[30] Nurses also describe that RPG provide a safe place to discuss non-clinical issues that might be considered inappropriate whilst working. Other studies, however, have not found similar interventions to improve CS.[31,32] In fact, Manning, Cronin, Monaghan, and Rawlings-Anderson observed negative responses to RPG, indicating participants felt uncomfortable with the notion of discussing personal topics in a group; leading to anxiety, moral confusion, and psychological discomfort through forced vulnerability.[12] Ironically, nurses who might choose not to attend RPG for these reasons may stand to benefit the most in the longer term.[30] Edward and Hercelinskyj note that reflective practice and clinical supervision enable nurses to address professional and personal issues [33], and a pilot study of RPG utilising a modified version of the Clinical Supervision Evaluation Questionnaire and focus groups, identified themes such as stress management, team building, and fostering trust.[11, 34] In fact, participants placed importance on the strong supportive characteristics of the group; with mutual respect and openness seen to allow formative and normative aspects of supervision to evolve as the group matured.[35]

METHODOLOGY

INTERVENTION

The intervention under investigation consisted of fortnightly or monthly RPG for nurses. These 60-minute sessions were planned to occur during protected time slots, providing greater opportunity for nurses to attend. RPG in this study had been meeting for between two and ten years. The groups took place in confidential spaces adjacent to clinical work areas. All levels of clinical nursing staff could voluntarily attend the groups, however, whilst RPG attendance was encouraged and supported by management, managers did not attend. Group size generally ranged from four to twelve nurses. The groups were run by an external facilitator; characteristically a nurse from another area, assisted by a co-facilitator from within the workgroup who primarily provided logistical support. Facilitators attend a training workshop and complete a six to twelve month 'apprenticeship' in the model.[29]

ETHICS

Ethical approval was granted by The Prince Charles Human Research Ethics Committee: Reference number; REC/18/QPCH/132. Site-specific approval was obtained from the relevant health service.

STUDY AIMS

The current study aimed to quantitatively measure whether attending RPG had a beneficial effect of ProQoL in a sample of nurses (i.e., lower burnout and STS, and higher compassion satisfaction). It also investigated whether RPG were associated with other beneficial outcomes; using a variety of analyses to address the following hypotheses:

1) that nurses who attended a greater number of RPG would have lower burnout (H1) and STS (H2) and higher CS (H3) than their colleagues.
2) that, regardless of level of attendance, nurses who worked in wards with access to RPG might have lower burnout (H4) and STS (H5) and higher CS (H6) than nurses on non-RPG wards (cohort resource effect).
3) that the number of RPG attended would predict decreased burnout (H7) and STS (H8), and increased CS (H9) over and above the effects of existing variables.

To increase the validity of these cross-sectional models, the impact of RPG attendance on ProQoL was analysed in context of potential confounding variables (e.g., age, gender, personal resources, job resources and psychological distress) in an attempt to isolate specific effects that could be attributed to RPG.

DESIGN

The current study was cross-sectional in nature and utilised continuous variables. The first hypothesis used the independent variable of RPG attendance at three levels; low [0–6 groups], medium [7–18], and high [19–31+]). The dependent variables were ProQoL subscales of burnout; STS; CS, along with intolerance to uncertainty and group cohesiveness.

The second hypotheses used the same dependent variables, but the independent variable was altered. For the variable of nurse and ward RPG attendance, participants were combined into three groups using variables of personal RPG attendance (Yes or No) and ward RPG availability (Yes or No) with groupings made as follows: Group 1 (Y/Y), the nurse attended RPG and the ward participated in RPG; Group 2 (N/Y), the nurse did not attend but RPG were available on the ward; or Group 3 (N/N), the nurse did not attend and RPG were not available on the ward. This variable was labelled the cohort resource effect.

The third hypotheses utilised a total of seven control variables (age, self-efficacy, optimism, psychological distress, skill discretion, job autonomy, and job social support) alongside the predictor variable of RPG attendance. The three subscales of ProQoL (i.e., burnout, STS, and CS) were the outcome measures. A priori sample size calculation using G-power for multiple regressions showed a sample of n =109 would be required, and that for ANOVAs (3 groups, medium effect size, fixed effect, omnibus test) a sample of n=159. This indicated the sample (n=251) was sufficient for all aspects of the study.

DATA COLLECTION

RPG facilitators were not present while nurses completed anonymous questionnaires, either during RPG or during in-service sessions, and so the questionnaires were placed in sealed envelopes, ensuring confidentiality. Collected demographic information included gender, age, weekly working hours, years spent nursing, and number of RPG attended at time of measurement, with the questionnaire further including 11 scales measuring concepts prevalent within the literature. After data collection, items were averaged and evaluated using the mean score of the scale.

PARTICIPANTS, SETTING AND RECRUITMENT

A convenience sample of 251 nurses (86% female) was recruited from a range of clinical specialties; including ICU, medical, surgical, midwifery, mental health nursing, paediatrics, oncology and palliative care, at two public tertiary hospitals. One of these hospitals, from which the majority of participants were sourced, had recently been commissioned, meaning that many participants in the study were relatively new to their current context.

Participation in the study was voluntary with participants recruited in person by the researchers either during RPG, if they attended, or during other education times if they did not. Verbal information on the study was provided at the time, and brief written instructions were also included with the survey. Participants were made aware of the non-identifiable nature of their answers and advised that data would be ethically stored onsite at USC. Paper copies of the survey were administered along with participant information and consent form (PICF), withdrawal of consent form, and sealed envelope for completed survey.

Participants ranged in age between 20 and 69 years, with a mean age of 41.59, had worked an average of 33.33 (SD=7.49) hours per week and an average of 14.38 (SD=11.51) years nursing experience. Most reported attending 1–6 RPG (n=108) while relatively fewer attended 7–12 (46), 13–18 (20), 19–24 (8), 25–30 (6), 31+ (20), and 35 had attended no RPG's. Eight did not answer this question and were not included in data analyses. Participants were also excluded from the current sample if they did not consent to their data being used. No incentive was provided for participation. All participants completed the questionnaire apart from a small number (i.e., < 5 nurses) who were called away on urgent clinical business.

MEASURES

Internal consistency reliability for all included measures was considered to be within the acceptable range (see Table 1). As such, the researchers were confident that the scales represented stable underlying constructs.

Self-Efficacy was measured using the 10-item Generalised Self-Efficacy Scale. Items were scored using a four-point Likert scale with anchor points of (1) *not at all true* through to (4) *exactly true*. Items were totalled to obtain an overall score ranging between 10 and 40 with higher scores equalling higher self-efficacy.

Optimism was measured using the revised Life Orientation Test-Revised (LOTR). Items were scored using a five-point Likert scale with anchor points of (1) *strongly disagree* to (5) *strongly agree*. The measure consisted of six items, three of which were reverse scored (i.e., 2; 4; 5). Item one was removed resulting in an improvement in internal consistency reliability.

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Job Social Support was measured using the Job Social Support Scale. Items were scored on a five-point Likert scale with anchor points of (1) *strongly disagree* to (5) *strongly* agree that were totalled to score between four and 20.

Job Autonomy was measured using the Job Autonomy Scale; consisting of four items that were scored using a five-point Likert scale with anchor points of (1) *never* to (5) *always*. Total of all items formed a score of between four and 20.

Skill Discretion was measured using the Skill Discretion Scale. The measure consisted of six items scored using a five-point Likert scale with anchor points of (1) *strongly disagree* and (5) *strongly agree*. Item 4 was removed to improve internal consistency reliability.

Psychological Distress was measured using the 6-item Kessler Screening Scale for Psychological Distress (K6). Items were scored using a five-point Likert-scale with anchor points of (1) *none of the time* and (5) *all of the time. These were* totalled to create a score ranging from five to 30; with higher scores reflecting higher levels of psychological distress.

Professional Quality of Life was measured using the Professional Quality of Life, Version 5 (ProQoL-5),[19] a 30-item measure included three 10-item subscales, namely CS, Burnout, and STS. Items were scored using a five-point Likert scale using anchor points of (1) *never* and (5) *very often*. Items were totalled and converted to *t*-scores with a mean of 50 and a standard deviation of 10. Items 2 and 15 were removed from the overall scale resulting in improvements in the internal consistency and reliability of the STS and burnout subscales.

Intolerance to Uncertainty Scale-12 (IUS-12) was used to measure critical thinking and resilience. This is a shortened version of the 27-item IUS which maintains a high correlation to the original ($r = .96$).[36] Items are rated on a 5-point Likert scale. The 7-item Prospective Anxiety (IUS-PA) subscale and the 5-item Inhibitory Anxiety (IUS-IA) subscale were also measured separately.

Group Cohesiveness Scale (GCS) is a 7-item scale evaluating the two subscales of cohesiveness (2 items) and engagement (5 items) using a 5-point Likert scale with anchor points at (1) *strongly disagree* and (5) *strongly agree;* higher scores indicating a prevalence of stronger group cohesion.

Psychosocial Safety Climate (PSC-12) measures levels of psychological health, safety, and social support; using a 5-point Likert scale with scores ranging from (1) *strongly disagree* to (5) *strongly agree* and higher score indicating greater feelings of psychosocial well-being.

DATA ANALYSIS

Data was evaluated using the Statistical Package for Social Sciences (SPSS) v24™.

The first two hypotheses were tested using univariate ANOVAs to assess significant results between individual RPG attendance groups and ward RPG attendance groups. Outcome scores were averaged and transformed into mean scores for each scale/subscale, creating a standardised measure to allow comparison between this study and other studies.

The final hypothesis was addressed by performing three hierarchical regression models, each using four blocks. The first block encompassed personal factors (i.e., age, optimism, and self-efficacy). The second block consisted of job-related factors (i.e. autonomy, social support, and skill discretion). The third block consisted of psychological distress. The order of these first three blocks reflected the way that variables were seen to relate to each other (e.g. a level of job autonomy cannot change a person's age). The fourth block represented RPG attendance and was considered after the other three

TABLE 1: MEANS, STANDARD DEVIATIONS, AND CORRELATIONS BETWEEN INCLUDED VARIABLES

	M	*SD*	1	2	3	4	5	6	7	8	9	10	11
1	41.59	11.43	(-)										
2	22.37	3.73	.14*	(.84)									
3	31.09	3.63	.10	.46***	(.87)								
4	13.18	2.71	.03	.20**	.12	(.83)							
5	16.13	2.62	-.06	.20**	.11	.41***	(.83)						
6	20.66	2.58	-.03	.23***	.16*	.27***	.38***	(.77)					
7	10.71	3.83	-.23***	-.51***	-.38***	-.23*	-.16**	-.07	(.86)				
8	1.82	1.66	.16*	.12*	.16*	-.12*	.01	.15*	-.07	(-)			
9	50.00	10.00	-.15*	-.41***	-.28***	-.33***	-.25***	-.21**	.56***	-.11	(.75)		
10	50.00	10.00	-.05	-.33***	-.29***	-.11	-.13*	-.02	.61***	-.01	.59***	(.83)	
11	50.00	10.00	.08	.23**	.19**	.35***	.24***	.38***	-.27***	.16*	-.61***	-.15*	(.82)

Note. (1) Age; (2) Optimism; (3) General Self-Efficacy; (4) Job Autonomy; (5) Job Social Support; (6) Skill Discretion; (7) Psychological Distress; (8) Number of RPGs attended; (9) Burnout; (10) Secondary traumatic stress; (11) Compassion Satisfaction. Cronbach's Alpha for each variable is reported on the diagonal in brackets. Variables which were not validated measures were indicated using a dash.

* p < .05; ** p < .01; *** p < .001.

in an attempt to identify any direct variance in ProQoL from attending RPG as measured against three dependent variables: burnout, STS and CS.

RESULTS

HYPOTHESIS ONE: INDIVIDUAL RPG ATTENDANCE

A series of univariate ANOVAs were performed to locate significant differences between three groupings of individual RPG attendance. Levene's test of homogeneity reported no significance, indicating a homogenous sample with similar group variation. The assumption of independence was satisfied through the segregation of the independent variable of RPG participation and there being no coercion for participation.[37,38] Due to the large sample size, any deviations from normality were considered acceptable and no data transformations were conducted.

Compassion Satisfaction. A pair-wise comparison using the Bonferroni adjustment showed that nurses who attended the most RPG (Group 3) had significantly higher CS than those who attended limited RPG (Group 1), t (155) = 2.94, p = .011. The remaining pair-wise comparisons were not significant.

Group Cohesiveness

A pair-wise comparison using the Bonferroni adjustment showed that nurses who attended the most RPG (Group 3) reported significantly higher group cohesiveness compared to those who attended limited RPG (Group 1), t (182) = 2.63, p = .027, and those who attended a moderate amount of RPG (Group 2), t(88) = 2.62, p = .028. The remaining pair-wise comparison was not significant.

Intolerance to Uncertainty

A pair-wise comparison using the Bonferroni adjustment showed that the nurses who attended a moderate number of RPG (Group 2) had significantly lower intolerance to uncertainty than those who attended limited RPG (Group 1), t (182) = 2.69, p = .025. The remaining pair-wise comparisons were not significant.

Inhibitory Anxiety

A pair-wise comparison using the Bonferroni adjustment showed that the nurses who attended a moderate number of RPG (Group 2) had significantly lower inhibitory anxiety than those who attended limited RPG (Group 1), t (182) = 3.06, p = .007. The remaining pair-wise comparisons were not significant.

HYPOTHESIS TWO: THE COHORT RESOURCE EFFECT

A series of univariate ANOVAs were completed to assess ifany significant differences between ward RPG attendance groups occurred. Assumption testing found that Levene's test of homogeneity was non-significant for all ANOVAS. A significant result would indicate that wards had different population variances and may not be directly comparable, however non-significance indicated similar group variation and further comparisons were able to be pursued. The assumption of independence was satisfied through the segregation of the independent variable of RPG participation by ward and the promotion of no coercion between groups.[36] This was achieved by researchers distributing and describing the questionnaire separately to each ward and promoting anonymity of responses.

TABLE 2: MEANS, STANDARD DEVIATIONS, AND ANOVA RESULTS FOR THE OUTCOMES OF INDIVIDUAL NURSE'S PARTICIPATION IN RPGS

Outcomes	Group 1: 0–6 RPG sessions attended (n = 124)		Group 2: 7–18 RPG sessions attended (n = 60)		Group 3: 19–31+ RPG sessions attended (n = 31)		F(2,211)	η^2	Observed Power
	M	SD	M	SD	M	SD			
Compassion Satisfaction	3.93	0.45	4.04	0.41	4.17	0.35	4.62*	.042	.776
Burnout	2.39	0.49	2.34	0.55	2.19	0.47	2.33†	.022	.469
Secondary Traumatic Stress	2.09	0.55	1.98	0.65	1.97	0.64	1.22	.011	.265
Intolerance to Uncertainty – Global Scale	2.36	0.67	2.06	0.67	2.21	0.69	3.76*	.035	.682
Intolerance to Uncertainty – Prospective Anxiety Subscale	2.59	0.70	2.34	0.73	2.55	0.74	2.17	.020	.441
Intolerance to Uncertainty – Inhibitory Anxiety Subscale	2.04	0.76	1.66	0.73	1.73	0.72	5.75**	.052	.863
Group Cohesiveness Scale	3.88	0.52	3.83	0.52	4.16	0.54	3.99*	.037	.710
Psychological Distress - K6	1.85	0.65	1.66	0.57	1.64	0.71	2.51†	.023	.499
Psychosocial Safety Climate	3.01	0.74	3.03	0.79	2.90	0.90	0.46	.004	.124

Note. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

The test of normality was observed to be violated using a variety of measures through the Kolmogorov-Smirnov and Shapiro-Wilk tests. Procedures to transform the data to a normal distribution were used, although the results showed the same patterns so analysis used the untransformed data.

The means, SDs and F values for ward participation are shown in Table 3. No significant findings were located between any of the three groups, due to low power in the analyses and the small effect sizes, as shown by the partial eta squares. This suggests there were no generalised workplace benefits for wards with RPG's.

HYPOTHESIS THREE: RELATIONSHIP BETWEEN RPG ATTENDANCE AND OTHER VARIABLES

Regression model for Burnout

Block 1 (personal factors such as age, optimism, and self-efficacy) added significantly to the explanatory model for burnout, $F(3,225) = 17.53$, $p < .001$, $R^2 = .204$. Block 2 (job-related factors such as autonomy, social support and skill discretion) added further significant variance, $\Delta R^2 = .065$, $F(3,222) = 6.49$, $p < .001$. Block 3 (psychological distress) also added significant variance, $\Delta R^2 = .134$, $F(1,221) = 48.50$, $p < .001$. However, Block 4 (RPG attendance) did not add significantly, $F(1, 220) = 0.18$, $p = .676$. Self-efficacy and optimism explained reduced burnout in the first step. Job autonomy explained burnout in the second, third, and fourth steps. Psychological distress mediated the effect of optimism on burnout in the third step. In the final model, burnout was explained by psychological distress and job autonomy.

Regression model for Secondary Traumatic Stress

Block 1 added significantly to the model for STS, $R^2 = .154$, $F(3,225) = 12.89$, $p < .001$. Whilst Block 2 did not add further to the model, $F(3,222) = 1.26$, $p = .288$, Block 3 added significantly to the model, $R^2 = .236$, $F(1,221) = 86.52$, $p < .001$. Block 4 did not add significantly to the model to explain STS, $F(1,220) = 0.18$, $p = .669$. Self-efficacy and optimism explained a reduction in STS in the first two steps of the model. Psychological distress significantly explained increased STS in the third step of the model and mediated the effects of self-efficacy and optimism. In the final model, psychological distress alone explained STS.

Regression model for Compassion Satisfaction

Block 1 added significantly to the model for CS, $R^2 = .067$, $F(3,225) = 5.40$, $p = .001$. Block 2 added further significant variance, $\Delta R^2 = .173$, $F(3, 222) = 16.82$, $p < .001$. Block 3 also added significant variance to explain CS, $\Delta R^2 = .020$, $F(1,221) = 5.86$, $p = .016$. Despite a significant correlation, Block 4 (RPG attendance) did not add significant variance to CS, $F(1,220) = 1.15$, $p = .286$. Optimism explained CS in the first block before being fully mediated in the second step. Autonomy and skill discretion significantly explained increased CS in the second step. Psychological distress explained decreased CS in the third step of the model. In the final model, job autonomy, skill discretion, and psychological distress explained changes in CS.

TABLE 3: MEANS, STANDARD DEVIATIONS AND ANOVA RESULTS FOR OUTCOMES OF WARD ATTENDANCE AT RPG

Outcomes	Group 1: Ward Provides RPG/ Individual Attends (n = 170)		Group 2: Ward Provides RPG/ Individual Does Not Attend (n = 14)		Group 3: Ward does not provide RPG/ Individual Does Not Attend (n = 34)		F (2,211)	η^2	Observed Power
	M	SD	M	SD	M	SD			
Compassion Satisfaction	4.01	0.03	3.98	0.12	3.95	0.08	0.434	0.004	.120
Burnout	2.34	0.04	2.36	0.14	2.34	0.09	0.015	0.000	.052
Secondary Traumatic Stress	2.08	0.05	1.95	0.16	1.93	0.10	1.002	0.009	.223
Intolerance to Uncertainty – Global Scale	2.29	0.05	2.20	0.18	2.14	0.12	0.663	0.006	.161
Intolerance to Uncertainty - Prospective Anxiety Subscale	2.56	0.06	2.36	0.19	2.41	0.12	1.080	0.010	.238
Intolerance to Uncertainty - Inhibitory Anxiety Subscale	1.92	0.06	1.99	0.20	1.77	0.13	0.457	0.004	.124
Group Cohesiveness Scale	3.94	0.04	3.63	0.14	3.87	0.09	2.429†	0.022	.486
Psychological Distress - K6	1.76	0.49	1.79	0.17	1.73	0.11	0.075	0.001	.061
Psychosocial Safety Climate	3.02	0.06	3.01	0.21	2.94	0.14	0.223	0.002	.085

Note. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

DISCUSSION

HYPOTHESIS ONE: INDIVIDUAL RPG ATTENDANCE

Nurses who attended between 7–18 RPG sessions reported significantly lower intolerance to uncertainty and less performance hindering anxiety than those who attended 0–6 RPG. These findings align with what we know about the concept of resilience, defined as one's ability to positively adapt to adversity.[39] A study of 482 Australian mental health nurses found that clinical supervision improved resilience levels within nurses and other research has previously linked resilience to interventions similar to RPG.[33, 40] Previous findings have also shown that reflective practice stimulates critical thinking.[41] If attending a moderate number of RPG is associated with a reduction in behaviour restraining anxiety and increased ability to respond to unexplainable scenarios, this could indicate that similar benefits may be gained from attending regular RPG that encourage critical reflection in a social support setting.

Nurses who attended 19 or more RPG sessions reported significantly higher compassion satisfaction than those attending 0–6 RPG, indicating greater satisfaction in performing professional duties. This finding might highlight a benefit from attending RPG over time. One hundred and forty neonatal nurses in Barr's study had similar levels of CS to nurses with little or no RPG attendance in the current study.[24] In addition, long term RPG attendees in this study had higher CS than 500 Latvian nurses and 463 nurses in Stamm's original study, also potentially highlighting the benefit of longer-term RPG attendance. [26, 27]

Nurses who attended 19 or more RPG sessions also reported significantly higher group cohesion within their ward than those who attended 0–6 and 7–18 RPG. These results align with the literature, indicating that the opportunity for nurses to discuss experiences within a supportive group setting promotes an improved perception of workplace efficiency and teamwork.[11,29,42,43] Although RPG attendance appears to have improved group cohesion within the current context, other studies report stronger overall group cohesion from interventions.[30] This might be explained by differences in group makeup, task and goals influencing participant perceptions of cohesiveness.[8]

HYPOTHESIS TWO: COHORT RESOURCE EFFECT

The second hypothesis pertained to the inter-relatedness of personal attendance and ward availability of RPG and revolved around the premise that there might be a more pervasive effect from running RPG in work areas; even for nurses who did not attend. The resulting data analysis returned no significant variance between attendance groups, supported by the low power, F-ratios and the small effect sizes as seen in Table 2.[44] Therefore, the results from the current study do not indicate that RPG had a more pervasive impact on the workplace.

Despite the findings in this study, it is still possible that RPG may have ward-wide benefits, as suggested by previous research relating to social support and psychosocial climate.[23] One possible reason for non-significant results is the inconsistency of group sizes, especially the small cohort ($n = 14$) in Group 2. Although results may be considered if a sample size is equal or greater than 12, the central limit theorem states a sample is considered robust only if the group is 30 participants or above.[37,38] The unequal variance created by such different group sizes may have influenced the significance of these findings.

HYPOTHESIS THREE: RELATIONSHIP BETWEEN RPG ATTENDANCE AND OTHER VARIABLES

Regression model for burnout

Nurses who lacked the personal resources of optimism and self-efficacy were more likely to report burnout, which supports the existing literature.[45,46] Additionally, consistent with the findings of Jang et al., nurses who had jobs that allowed for autonomy were less likely to report burnout. [47] This seems logical as nurses who can alter their working conditions in response to overwhelming stressors may be less likely to burn out. This finding also implies that employers of nurses might reduce burnout by providing more autonomy.

The addition of psychological distress fully mediated the effects of self-efficacy, and optimism. It also partially mediated the effect of job autonomy. This suggests that nurses who experience psychological distress are at increased likelihood of burnout regardless of how they feel about their abilities or their level of optimism. This provides an incentive for organisations to manage the psychological distress of their employees, as the contribution of psychological distress to burnout is consistent with the current literature.[48]

The number of RPG that nurses attended did not appear to indicate further variation to burnout above personal resources, job resources, and psychological distress. It could be argued that this finding is in contrast to previous studies that report reductions in burnout due to clinical supervision or stress management interventions, [31, 49] however the clinical supervision was delivered individually, and the stress management intervention involved provision of general information rather than specific clinical issues. As such, differences between interventions and samples may partially account for the differing results. Koivu evaluated clinical supervision groups for nurses over a four-year period and found improvements in wellbeing related to increased self-efficacy for a majority of nurses but that this did not mitigate the risk of burnout for otherwise vulnerable nurses.[22]

Consistent with the JDR model,[7, 18] the personal resources of self-efficacy and optimism appeared to act as a buffer against the impact of job demands to reduce burnout. The job resource of autonomy also explained reduced burnout. The introduction of a further job resource, RPG, was not found

to directly provide additional buffering above the existing effects of personal and job resources.

Regression model for STS

Nurses who reported low self-efficacy and optimism were considered at increased risk of developing STS. This suggests that nurses who reported little belief in their abilities or pessimistic views are more likely to be adversely affected by the traumatic stress of their patients. As per the JDR model, optimism and self-efficacy can be considered personal resources that buffer against work demands to reduce the likelihood of developing STS symptoms. This effect remained after accounting for job factors indicating that personal resources may be more important than the job in explaining STS, the variance accounted for by psychological distress fully mediated the effects of both self-efficacy and optimism. In other words, nurses who develop psychological distress were also identified as more likely to develop STS regardless of their level of self-efficacy and optimism. Organisations intending to avoid STS in nursing staff should, therefore, prioritise the management of psychological distress.

The addition of RPG attendance resulted in no further variation in STS after accounting for person factors, job factors, and psychological distress. This is consistent with the findings of Grundlingh et al., who found no difference in STS between violence researchers randomised to group debriefs or a control group,[50] but contradictory to the findings of Morrison and Joy,[14] where nurses qualitatively reported that debriefs were helpful in managing STS. Such variations may illustrate differences between qualitative and quantitative methodology and sample size, as much as between nurses and violence researchers.

Regression model for CS

Nurses who scored high on optimism demonstrated increased CS. This makes intuitive sense as interpreting work events as positive would likely allow nurses to gain more satisfaction from their roles. The effect of optimism was, however, fully mediated by the effects of job autonomy and skill discretion. This suggests that nurses who have freedom of choice in their work and can utilise their skills to solve challenging problems tend to gain more satisfaction from helping others even if they are not optimistic. This is an important point as it implies that an organisation can foster CS in all nurses by altering the nature of their role. Nurses who experienced psychological distress were more likely to have low CS.

Whilst there was a significant correlation between the number of RPG that nurses attended and higher CS, it was not possible to explain this over and above person factors, job factors, and psychological distress. In other words, optimistic nurses who have a good job that allows for autonomy and skill discretion, and who report low psychological distress were not noted to obtain further increases in CS from attending RPG. This finding is consistent with the studies of Wallbank and Hatton and Wood et al., [31,32] who found no change in CS following a stress management intervention and clinical supervision, respectively, but appears to conflict with Barr and Măirean who found that social support and cognitive reappraisal were positively associated with CS.[16,24] Whilst RPG attendance seems to be related to increased CS in some way, this needs to be considered in relation to person factors, job factors, and psychological distress.

Although RPG attendance did not explain increased CS, decreased burnout or STS after accounting for variances in person factors, job factors, and psychological distress; the indirect influence of RPG attendance on these factors now needs to be considered.

LIMITATIONS

One consideration with this study is that the majority of data originated from a newly commissioned hospital that had only recently been built. Staff were still undergoing transition into the new hospital during the research period and this may be considered a confounding variable. More than half the nurses in the study had attended less than six RPG sessions, with less than one-fifth attending more than 18 groups, potentially making it more difficult to ascertain the true impact of RPG on personal resources over time, as was done in Koivu's study.[22]

Another methodological limitation associated with cross-sectional survey design is self-report bias. The researchers attempted to combat this by clearly explaining to participants that responses would not be seen by members of their organisation at any point and by using hierarchical regression. Despite these measures, a longitudinal design should provide more robust findings and it is recommended that further evaluations be performed when more of the cohort has had the opportunity to attend a greater number of RPG.

CONCLUSION

This study provides some evidence supporting the benefits of social support and reflective group supervision interventions. Findings indicate the presence of a 'dose effect'; as nurses who attend more RPG's were more likely to have greater positive resource factors. Moderate levels of RPG attendance (6–18 groups) were correlated with decreased intolerance to uncertainty and inhibitory anxiety while longer-term attendance (19+ groups) was linked to increased compassion satisfaction and group cohesion.

Despite previous research suggesting the possibility of broader workplace benefits from the introduction of social support resources, analysis of data regarding the 'cohort resource' effect in this study has found it non-significant.

This study supports the predictions of the JDR theory that personal and job resources explain improvements in ProQoL,[9] by indicating that individual resources, job resources and demands are significant variables influencing ProQoL for nurses. Whilst findings from the regression analysis support the correlation between RPG and CS, they were not able to explain increased CS above personal and job resources. Similarly, the study was unable to identify an explanatory link between RPG attendance and variations in either burnout or STS.

Overall, the findings of this study provide further evidence linking RPG with positive outcomes for individual nurses; however, the mechanisms involved are still not clear. The study provides a foundation from which future research can explore the correlation between RPG attendance and personal/job resources exploring the more subtle, indirect effects that RPG might have on the development of these resources over time.

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- Contributing to the conception & design of this work
- Drafting & revising the work critically
- All parties have given final approval of the version to be published.
- All parties agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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