

Introduction

- Non-pharmacological approaches like virtual reality (VR) are gaining traction as tools to enhance patient experiences.¹
- Unclear of VR's impact on post operative recovery.²

Objective

- To investigate whether VR administered before and after gynecological surgery would improve the quality of recovery using the QoR-40 score.
- To assess the pain scores, and anxiety before surgery and beyond postoperative 24 hours.

Methods

- Inclusion criteria: 21–70 years old; ASA I or II; no visual impairments.
- Validated questionnaires on quality of life (QoR-40), pain scores and anxiety (VAS-A) were administered before and after surgery (24, 48, 72 hours)
- A sample of 104 was required to achieve 80% power to detect a 15-point difference in QoR-40 that is clinically relevant.³

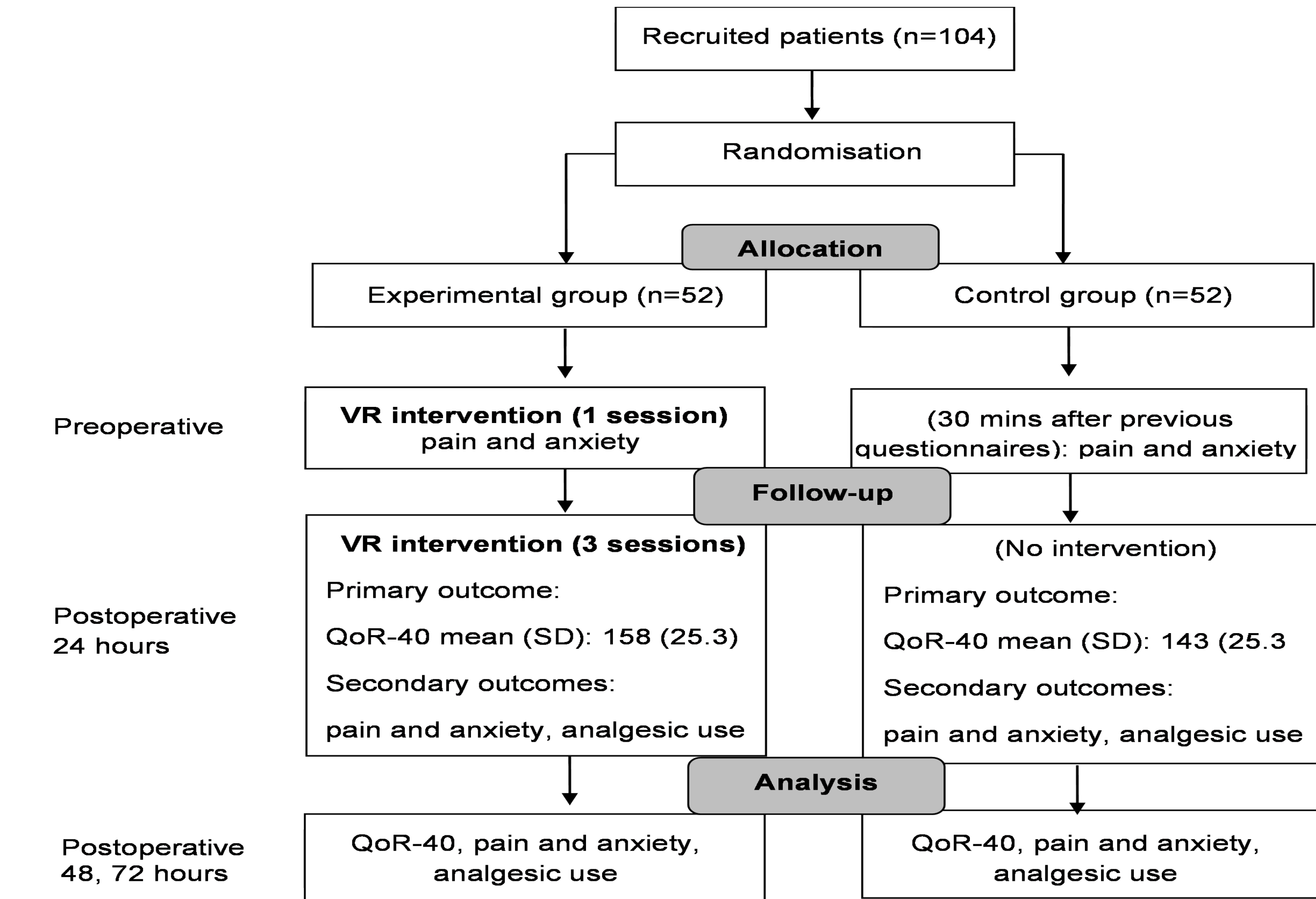


Figure 1 Study flow diagram.

Results

- No significant differences in baseline characteristics except in QoR-40 dimensions of physical independence and physical support.
- QoR-40 total scores at postoperative 24 hrs was significantly greater after third VR intervention MD 7.23, 95% CI 1.44 to 13.02, p = 0.015.
- Notable improvements were seen in the physical comfort and pain dimension of QoR-40.
- VAS-A anxiety scores were significantly lower at 48 and 72hrs post operatively.

Table 1 Baseline patient characteristics.

Variable	VR Intervention (n = 52)	Control (n = 52)
Age (years), mean (SD)	35.5 (7.1)	35.8 (8.0)
Race, n (%)		
Chinese	35 (67.3)	35 (67.3)
Malay	12 (23.1)	12 (23.1)
Indian	1 (1.9)	4 (7.7)
Others	4 (7.7)	1 (1.9)
ASA status, n (%)		
I	49 (94.2)	43 (82.7)
II	3 (5.8)	9 (17.3)
BMI (kg.m ⁻²), mean (SD)	24.6 (4.3)	23.8 (5.0)
Nature of surgery, n (%)		
Cystectomy	25 (48.1)	21 (40.4)
Myomectomy	23 (44.2)	23 (44.2)
Dilatation and curettage	5 (9.6)	1 (1.9)
Hysterectomy	2 (3.9)	3 (5.8)
Others	3 (5.8)	7 (13.5)
Duration of surgery (mins), mean (SD)	119.6 (54.8)	126.6 (60.9)
Preoperative		
Medication, n (%)	13 (25.0)	9 (17.31)
Cervagem	8 (15.4)	5 (9.6)
Cytotec	0 (0)	1 (1.9)
Misoprostol	5 (9.6)	3 (5.8)
STAI state anxiety (20-80), mean (SD)	35.8 (9.0)	37.3 (9.4)
STAI trait anxiety (20-80), mean (SD)	33.2 (8.9)	32.1 (9.1)
STAI total score (40-160), mean (SD)	69.1 (15.3)	69.4 (16.5)
EQ-5D VAS (0-100), mean (SD)	74.7 (24.4)	68.2 (28.5)

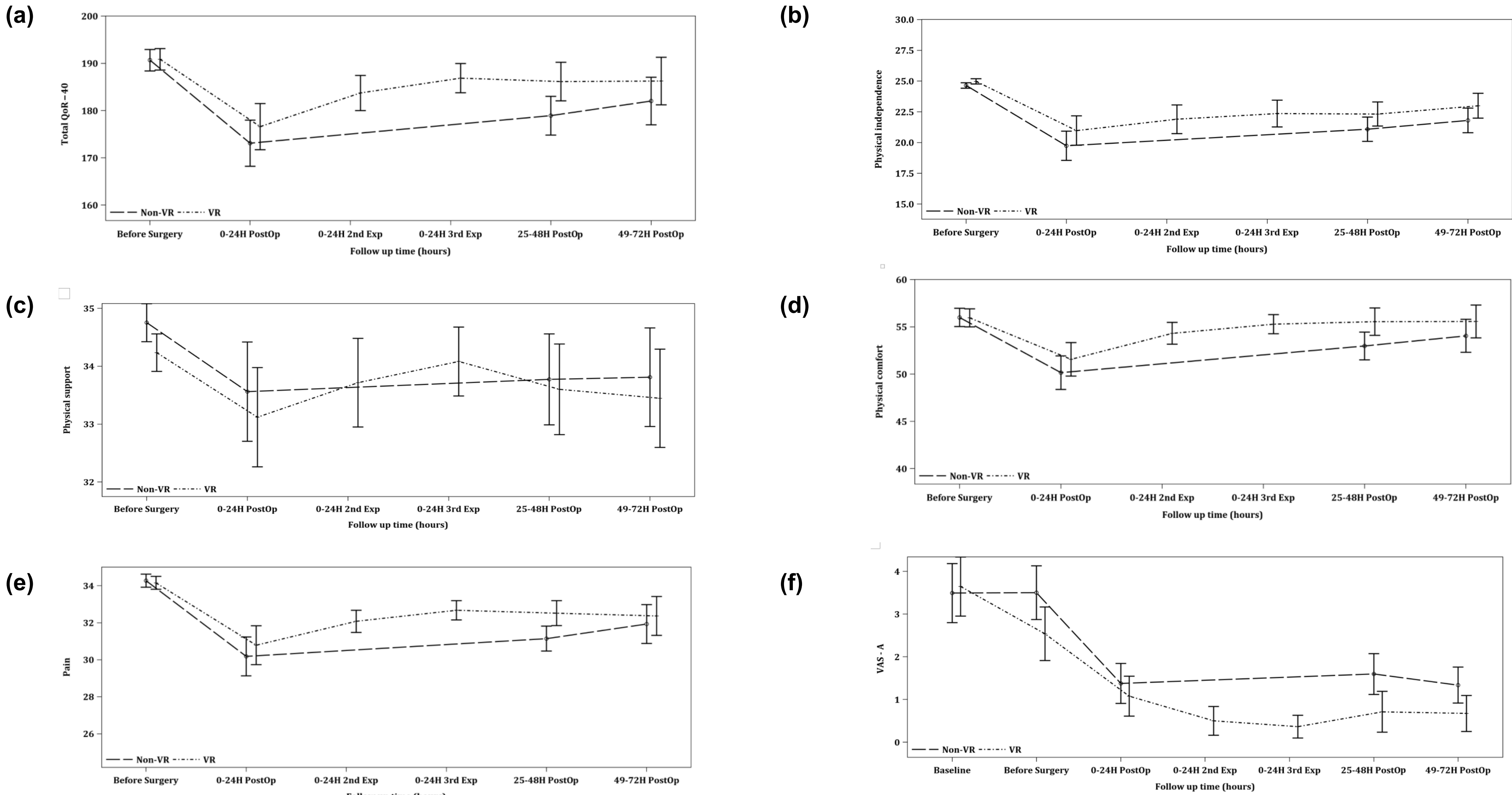


Figure 2 Pain and psychological measures before and after surgery between VR and non-VR intervention. (a) Total QoR-40; (b) QoR-40 physical independence; (c) QoR-40 physical support; (d) QoR-40 physical comfort; (e) QoR-40 pain; and (f) total VAS-A scores.

Discussion

Quality of Recovery

- Improvement in QoR-40 domains of physical comfort and pain after third VR intervention suggest a cumulative benefit with repeated interventions.
- Potential for VR to divert attention, reduce stress.

Reduce Anxiety

- Blue followed by green-themed scenarios are the most popular.
- Different color themes may have varying effects on psychological states.

- VR may modulate pain neural pathways and enhance coping strategies.

Pain scores

- No significant difference in pain score – however patients required fewer analgesia in first 24hrs, possibly due to distraction.

Conclusion

- VR is a promising non pharmacological adjunct to improve quality of recovery postoperatively.

References

- Li A, et al. Virtual reality and pain management: current trends and future directions. Pain Manag. 2011;1(2):147-57.
- Hong SH, et al. Assessment for the Quality of Recovery from General Anesthesia in Patients with Gynecologic Surgery. Korean Journal of Anesthesiology. 2008;54
- Chan JJI, et al. The use of pre-operative virtual reality to reduce anxiety in women undergoing gynecological surgeries: a prospective cohort study. BMC Anesthesiol. 2020;20(1):261