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The effect of animated video instruction combined with practical demonstration video on postoperative functional exercise compliance and efficacy in patients undergoing arthroscopic shoulder surgery

Submission date
20/01/2026

Recruitment status
No longer recruiting

Registration date
22/01/2026

Overall study status
Completed

Last Edited
18/09/2026

Condition category
Injury, Occupational Diseases, Poisoning

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
Shoulder arthroscopy is commonly used to treat rotator cuff injury and shoulder impingement. After surgery, patients need to perform rehabilitation exercises and use shoulder braces correctly but many find this difficult. This study aims to examine whether educational videos can improve patients' understanding of rehabilitation and support recovery after shoulder arthroscopy.

Who can participate?
Adults aged 18–75 years undergoing arthroscopic shoulder surgery for rotator cuff injury or acromial impingement syndrome.

What does the study involve?
Participants are randomly assigned to receive either routine nursing care or additional animated and practical demonstration videos explaining brace use and rehabilitation exercises. Participants are followed for 6 months after surgery.

What are the possible benefits and risks of participating?
Participants may better understand rehabilitation exercises and feel more confident during recovery. No additional risks beyond standard postoperative care are expected.

Where is the study run from?
Beijing Jishuitan Hospital, Capital Medical University (China)

When is the study starting and how long is it expected to run for?
The study started in January 2024 and was completed in January 2025, with six months of follow-up for each participant.

Who is funding the study?
Nursing Research Fund of Beijing Jishuitan Hospital, Capital Medical University (China)

Who is the main contact?
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Contact information

Type(s)
Principal investigator, Public, Scientific

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Study information

Scientific Title
The effect of animated video instruction combined with practical demonstration video on postoperative functional exercise compliance and shoulder function recovery in patients undergoing arthroscopic shoulder surgery: a randomized controlled trial

Acronym
AVPD-ASS

Study objectives
To investigate the impact of animated video instruction combined with practical demonstration video on postoperative functional exercise compliance, correct brace usage, and shoulder function recovery in arthroscopic shoulder surgery patients, , and to explore its potential role in alleviating postoperative kinesiophobia, providing evidence for optimizing rehabilitation protocols.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 19/09/2023, Ethics Committee of Beijing Jishuitan Hospital (Beijing Jishuitan Hospital, Capital Medical University, No. 68, Huinan North Road, Huilongguan, Changping District, Beijing, 102208, China; +86 (0)1057801206; kyc_jst@163.com), ref: K2023-330-00

Primary study design
Interventional

Allocation
Randomized controlled trial

Masking
Open (masking not used)

Control
Active

Assignment
Single

Purpose
Supportive care

Study type(s)

Health condition(s) or problem(s) studied
Rotator cuff injury and acromial impingement syndrome in patients undergoing arthroscopic shoulder surgery

Interventions
Stratified block randomization was used with stratification by injury type (rotator cuff injury /acromial impingement syndrome) and age (<60 years/≥60 years), and block size = 4. SPSS 26.0 was used to generate random sequences, and an independent statistician assigned patients to groups.

Control Group: Conventional Nursing Intervention
Verbal education: Responsible nurses explained brace usage and exercise key points (15–20 minutes/session)
Paper manual: Provided illustrated rehabilitation guidelines (including brace fitting diagrams and exercise plans)
Routine follow-up: Weekly telephone reminders for training, with no video resources or remote guidance

Experimental Group: Combined Video Nursing Intervention
Animated video instruction: 8–10 minute 3D animated videos covering:
1. Shoulder anatomical structure (rotator cuff muscles, subacromial space)
2. Postoperative brace fitting principles (e.g., biomechanical mechanism of abduction braces maintaining 30° shoulder abduction-neutral position)
3. Identification of pressure injury risk points (bony prominences such as acromion and greater tuberosity)

Practical demonstration videos: Standardized videos demonstrating brace fitting steps (e.g., adjusting abduction brace tightness, cervical wrist sling length) and functional exercises (pendulum exercise, wall climbing training, etc), with voice guidance and subtitle prompts.

Implementation: Videos were viewed via tablet within 24 hours postoperatively, once daily for 3 consecutive days; QR codes were provided for repeated access; rehabilitation therapists remotely verified brace fitting and training via APP weekly.

Intervention Type
Behavioural

Primary outcome(s)
1. Exercise compliance measured using (actual weekly training sessions/planned sessions) × 100% based on daily rehabilitation logs and APP records; ≥80% was defined as "good compliance"; at the end of the follow-up period

2. Correct brace usage rate measured using 10 items (e.g., abduction angle deviation ≤5°, tightness allowing 1 finger insertion, pressure point protection); ≥8 correct items = "correct usage"; correct brace usage rate = (Number of patients with correct brace usage / Total patients using sports medicine braces) × 100%; at 1 week and 4 weeks postoperatively

3. Shoulder function (CMS) measured using Constant-Murley Score, including pain (15 points), range of motion (40 points), muscle strength (25 points), and activities of daily living (20 points), with a total score of 100 points (higher scores indicating better function), at 6 weeks, 3 months, and 6 months postoperatively

Key secondary outcome(s)
1. Shoulder range of motion measured using a goniometer for forward flexion, external rotation, and abduction angles at 6 weeks/3 months/6 months postoperatively

2. Complication rate measured using recording of adverse events (joint adhesion, rotator cuff re-tear, pressure injury) at 6 months postoperatively

3. Nursing satisfaction measured using Newcastle Satisfaction with Nursing Scales (NSNS), including 19 items (e.g., "nurse’s explanation style") on a 5-point Likert scale (1=very dissatisfied, 5=very satisfied), with total scores ranging from 19–95, at 6 weeks postoperatively

Completion date
17/12/2025

Eligibility

Key inclusion criteria
1. Aged 18–75 years, diagnosed with rotator cuff injury or acromial impingement syndrome (confirmed by MRI)
2. First-time arthroscopic shoulder surgery (e.g., rotator cuff repair, acromioplasty)
3. Postoperative requirement for sports medicine specialized braces (shoulder abduction brace or cervical wrist sling)
4. Clear consciousness and ability to cooperate with rehabilitation training and data collection
5. Voluntary participation

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Upper age limit
75 Years

Sex
All

Total final enrolment
140

Key exclusion criteria
1. Comorbid severe osteoarticular diseases (e.g., rheumatoid arthritis, fractures) or nerve injuries
2. Cognitive impairment or history of mental illness
3. Previous shoulder surgery or severe shoulder deformity
4. Inability to complete 6-month follow-up

Date of first enrolment
01/01/2024

Date of final enrolment
01/01/2025

Locations

Countries of recruitment
China

Sponsor information

Organisation
Beijing Jishuitan Hospital

ROR
https://ror.org/035t17984

Funder(s)

Funder type

Funder Name

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		15/09/2026	18/09/2026	Yes	No