



**Service Priorities and Programmes**  
**Electronic Presentations**

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**Active Rehabilitation with Smartphone QR Code – Experience on Post-Operative Breast Cancer Patients**

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**Introduction**

Physiotherapy and exercise are vital for rehabilitation of post-operative breast cancer (CaB) patients. Post-operative CaB patients commonly experienced problems include wound pain, scar adhesion and shoulder stiffness, which in particular is a major concern as it may delay subsequent treatments like radiotherapy.

Poor exercise practice and home compliance due to poor memorization of exercise are identified contributing factors to sub-optimal outcomes. Trial use of QR code to facilitate rehabilitation in total knee replacement patients has been carried out in PYNEH since 1Q 2017 and has achieved a positive result. Therefore, use of QR code, which allows patients to gain access to exercise videos outside hospital, was extended to CaB patients. Its effect on patients' rehabilitation was examined.

**Objectives**

- (1) To improve CaB patients' shoulder range after operation;
- (2) To improve CaB patients' home exercise compliance;
- (3) To examine the effect of use of QR code in their rehabilitation

**Methodology**

Exercise videos were produced by physiotherapists and then uploaded to HA internet by IT department. QR codes were then created to allow access to the videos on patients' personal mobile devices. Patients who attended physiotherapy and performed the exercises properly were given the QR codes and pamphlets. Shoulder range was measured pre-operatively, 2-week post-operation and 5-week post-operation. Questionnaires were used as a subjective outcome measure.

## **Result**

From October 2017 to January 2018, 18 female patients were recruited. There was a statistically significant decrease in shoulder flexion range (167.5 to 144.44,  $p=0.002$ ) at 2 weeks post-operatively. However, after exercise was introduced, there was a statistically significant improvement (144.44 to 163.33,  $p<0.001$ ) at post-operation 5 weeks. 80.9% of patients practiced home exercise daily and 95.2% agreed that QR code was useful in exercise revision.

## **CONCLUSION**

The program provided positive results for both subjective and objective measures. QR code exercise videos not only empowered patients' role in rehabilitation, but also allowed access to exercise videos at patients' convenience, eliminating the time and place factors. In this world of fast growing technology, QR code mediated exercise video can be used as an adjunct rehabilitation delivery tool.