

## Effect of Early Mobilization on ICU and Hospital Length of Stay and Its Impact on the Cost of Care in Post-Open Heart Surgery Patients:A Randomized Control Trial (RCT)

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### Abstract

**Introduction:** Early Mobilization (EM) of patients in Intensive Care Unit (ICU) has received considerable attention in scientific literature over the past several years. It has been reported that EM decrease Hospital Length of Stay (LOS).

**Aim of the study:** To explore the effect of early mobilization for post open heart surgery patients on hospital and ICU length of stay and its influence on cost effectiveness.

**Methods:** 41 male and female patients with mean age ( $45.95 \pm 13.3$ ) were recruited from King Faisal Specialist Hospital and Research Center (KFSHRC). Participant were randomly assigned to one of the two groups; Group I (n=21), Early intervention group program started 4-6 hours post extubation as early Cardiac Rehabilitation (CR) intervention, or Group II (n=20), The standard care group to be seen 9-24 hours post extubation as usual standard care of the hospital. Intervention: Both groups had the same intervention of cardiac rehabilitation program that included; Aerobic exercises, strengthen exercises, gait training and education. This program was modified from the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR).

**Outcome measures:** Number of days in Intensive Care Unit Hospital Length of Stay and cost effectiveness were calculated by identifying the average cost of one day in the ICU and in the hospital.

**Results:** Early intervention group (Group I) showed significantly lower number of days in ICUs ( $2.14 \pm 1.03$ ) compared to standard care group ( $5 \pm 0.48$ ),  $p < 0.000$ . Group I, also showed significantly less hospital LOS ( $6.56 \pm 1.63$ ) compared to Group II ( $8.73 \pm 1.67$ ),  $p < 0.000$ . The results of this study showed that the cost saving time spent in the ICU for Group I; 15.327. Group I spent lesser number of days ( $2.14 \pm 0.04$  days) in the ICU as compared to Group II ( $2.86 \pm 0.55$ ) thus saving approximately 45.76% (\$16,511.84) in the cost of hospital care and 53.38% (\$17,538.56) in the cost of ICU care.

**Conclusion:** Study concluded that early mobilization intervention in post-operative open heart surgery patients is safe while positively influencing clinical outcomes, functional recovery, early discharges from the ICUs and the Hospital and ultimately reducing the cost of care.

### Reference:

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### Biography

Dr. Mohammed Abdullah Takroni, a cardiac rehabilitation Consultant, Fellowship program in Cardiopulmonary Rehabilitation at Duke University and Medical (DUMC), North Carolina, USA, 1996. Master's degree in physical therapy from King Saud University 2008, Master degree in Sports Medicine and Rehabilitation, Manchester Metropolitan University (MMU), UK, 2009. Ph.D., in Cardiovascular and Pulmonary Rehabilitation, Glasgow Caledonian University, Glasgow, UK, 2011. Member of the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR), member of the Irish Association of cardiopulmonary rehabilitation (IACR), member of the British Association for Cardiovascular Prevention and Rehabilitation (BACPR), member of Saudi Heart Association (SHA). Develop the Cardiac Rehabilitation programs at King Faisal specialist hospital and research center (KFSH&RC), Riyadh, Saudi Arabia. Currently, head section of cardiac rehab team king Faisal Heart Institute, King Faisal specialist hospital and research center, and the inpatient supervisor, physical therapy department.



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