



Service Priorities and Programmes
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Submitting author: Mr SUNG HOK NG

Post title: Registered Nurse, UCH, KEC

Designing an OSIM Electric High Chair for Patients with Hemiarthroplasty to Improve Patient Care Quality

NG SH, Wong CK, Kong CY

Orthopaedic and Traumatology, United Christian Hospital

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Introduction

Hip fracture is the most common orthopedics injury which requires hospitalization. A specialty ward was established for geriatric hip fracture patients aimed to improve care outcome in United Christian Hospital. Majority of the geriatric hip fracture patients undergo operation and most of them receive partial hip replacement (hemiarthroplasty). Patients should be aware of hip dislocation along their lives if receiving hip joint replacement. Other than mobility training and modifications of living activities, an appropriate choice of chair is crucial to regain their ability to mobilize and prevent bed ridden.

Objectives

1. Enhance patient safety and care quality
2. Engage staff in cultrate environment and occupational safety

Methodology

SWOT Analysis

Weakness and Threats

The existing standardized high chair provides very limited range of hip flexion and it is not able to fit each individual's characteristics. These might lead to hip dislocation and also limit patients' comfort when seated. Moreover, the non-adjustable height of chair also limits the patients ability to raise themselves during transfer which discourages patients' active participation on daily care. These limitations are most likely to affect the nursing care process, time consumption, manpower and deliver results.

Strengths and Opportunities

There was an opportunity to replace high chairs and involve in the design for patient care quality and safety. When designing the electric high chair, several components including neck and back contour, hip flexion, femoral length, tibia length, ankle joint, and arm flexion were highly concerned. An ergonomic design based on the aforementioned concerns effectively allows adjustment of appropriate levels and position of high chair for each geriatric patient. The newly designed chair allows geriatric patients to rise up themselves so as to promote their participation in rehabilitation and minimize sick role. Safety measure is also concerned on both patient side and staff side. Other than the presence of safety belt to prevent patient fall,

the control for the chair adjustment has a safety lock to avoid inappropriate adjustment by the patient. For staff safety, electric operation minimizes occupational hazards to carers.

Result

The new designed chair enables adjustment to provide appropriate seat posture for individual patient and safety accessories installed minimize potential hazards to patients. Patients could be engaged in rehabilitation after operation. In addition, staff engagement in the design process cultrate caring environment and occupational safety.