

Safety design of side rails for metal medical beds

Mohammad Abdullah Taha Almandrawy

Assistant Professor, Metal Furniture and Constructions Dept., Faculty of Applied Arts, Helwan University, Egypt

Abstract:

Background: Medicals metal side rails of beds are designed for patients who need protection from risk, falls, entrapment, slipping, sliding and injuries. Side rails are use increasingly after World War II, to forbid patients falling particularly in hospital setting or in nursing homes (a small private hospital, often for old people) or houses. [Reagan R. 2014]. When designing a side rail, there should be a documented comprehensive assessment of medical necessity which has been made by a team of health professionals. The resident patient must consent to the use of restraints. In obtaining consent, the nursing home is required to explain the risks and to benefit from the use side rails. Also requires the approval of the resident's attending physician. [Kuipers 2014]. **Problem:** State various side effects associated with medical metal bed side rails suffered by patients, as seen from the designers and team of health professional's point of view. **Objectives:** The study objective has been to investigate the design of safety elements in medical bed side rails and hence set up certain design rules for the assessment and design according to real patient's needs. It achieves safety of patients both in a hospital, a nursing home and even in their own homes. Research studied some factors as type of bed rails, categories of entrapment and side effects of side rails. And simulating technology was studied. **Results and discussion** showed that the decision to use medical metal bed side rails should be based on a comprehensive assessment according to identification of the patient's needs, which include comparing the potential for entrapment or injury associated with use or non-use of them. By determining the design criteria and rules, a patient is offered a safe bed environment. When there is a definite need for using medical bed side rail, bed rails must be of variable heights or be adjustable enough to allow for ease of use. An alarm system should be implemented to alert medical staff that a patient has moved from their normal position and probably want to get out of bed.

Keywords:

- *Metal medical bed,*
- *Side rails,*
- *Safety design,*
- *Patient.*

<p>Paper received 30th October 2014, Accepted 18nd December 2014 Published 1st of January 2015</p>
