

Abstract

Background: Fractures in children mostly from unintentional injuries represent a major public health concern, and 90% occur in low- medium income countries. The prevalence of extremity fractures in children is increasing; these fractures primarily affect the distal radius/ulnar, the distal humerus, and the epiphyseal bones. This underscores the need for high-quality musculoskeletal treatment in sub-Saharan Africa. Although there is growing evidence of greater operational treatment, the majority of these fractures are managed nonoperatively. There is more emphasis locally on technical outcomes as indicator of successful intervention at the expense of functional outcomes using Pediatric Quality of Life (PedsQL). There is paucity of published data locally on this subject and patient reported outcomes in children, highlighting a research opportunity locally at Moi Teaching and Referral Hospital (MTRH), Eldoret. The study will enable guide treatment, educate parents and set expectations about quality of life and return to activities after treatment.

Objective: To describe the patterns, treatment modalities and outcomes of extremity fractures in pediatric patients at Moi Teaching and Referral Hospital? **Methods:** A descriptive prospective study design was conducted at MTRH on children aged 2-14 years with extremity fractures between May 2023 and April 2024. Consecutive sampling was done until a sample size of 478 was achieved. Data was collected via interviewer administered structured questionnaire. Health related quality of life was determined through filling in the PedsQL measurement tool at 6 and 12 weeks. Continuous variables such as age were analyzed using means, median and their corresponding standard deviation and interquartile ranges. Categorical variables such as gender were summarized as proportions or percentages. A p- value < 0.05 was considered statistically significant.

Results: The age range was 2-14 years with a median of 6 (IQR: 4, 10) years. Males were majority (59.8%). However, for children aged 8-12 years, females were a majority 74(51.1%). Majority of fractures occurred at home, with distal radius 191 (30%) being the commonest injured part. Falls 248 (56%) was commonest mechanism of injury. Majority of fractures were treated nonoperatively with casting (63.3%). Lower PedsQL scores were reported at 6 weeks, improving by 12 weeks. Lower limb scores (26.1) were worse than upper limb (40.6) at 6 weeks, and similarly at 12 weeks (86.8 versus 89.3). Girls had lower PedsQL scores than boys. **Conclusion:** Majority of fractures occurred at age 8-12 years at home, with upper limb mostly affected and the commonest mechanism was a fall. Most of the fractures were managed non operatively. Lower extremity fractures had poor PedsQL scores compared to the upper ($p < 0.05$), with girls generally having poorer health related outcomes than boys (with $p < 0.05$).

Recommendations: Safety education should be given to minimize falls. More options of surgical implants should be made available. There is need for more research to address low PedsQL score for injured girls and lower limb fractures to be given more attention in terms of rehabilitation.