Offer of a bandage versus rigid immobilisation in 4- to 15-year-olds with distal radius torus fractures: the FORCE equivalence RCT

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Declared competing interests of authors: Daniel C Perry is a National Institute for Health and Care Research (NIHR) Clinician Scientist and a member of the Commissioning Board for NIHR Health Technology Assessment (HTA) (2016–present). James M Mason was a member of the NIHR Health Services and Delivery Research Funding Committee (2017–20), the NIHR HTA End-of-Life Care and Add-on Studies (2015–16) and the NIHR HTA Efficient Study Designs – 2 (2015–16). Damian T Roland is the chairperson of Paediatric Emergency Research United Kingdom and Ireland (PERUKI), which was a partner organisation for the study. Shrouk Messahel receives financial support from the NIHR Research Scholar North West Coast and is the secretary of PERUKI. Matthew L Costa is a NIHR Senior Investigator and a member of the NIHR HTA General Committee (2016–21).

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Plain English summary

The FORCE equivalence RCT

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Plain English summary

Background

Torus fractures (also called buckle fractures) of the wrist are the most common type of broken bone in children, affecting 60,000 children in the UK per year. They are the mildest form of broken bone, in which the bone crushes (or buckles). Despite these fractures being so common, there is no 'standard treatment'. The traditional treatment is to use a plaster cast and arrange outpatient follow-up. Recent medical research has suggested that wearing a bandage, or even having no treatment, might result in similar healing.

In this study, we looked into whether or not a bandage (which was optional to wear) and no further follow-up resulted in the same recovery as a hard splint and usual follow-up.

A total of 965 children aged 4–15 years from 23 emergency departments in the UK took part in the study. Children were evenly divided between the bandage and hard splint groups in a process called randomisation. Prior to the study, families told us that managing pain after injury was the most important issue to them. We asked children and their families to tell us about pain, recovery using the arm, quality of life, complications encountered and school absences. We also looked at the financial costs to families and the NHS.

What did the trial find?

The two treatments resulted in the same outcomes. The majority of those offered a bandage chose to wear it immediately. There was no difference at all in the levels of pain between those treated with a hard splint and usual outpatient follow-up and those offered a bandage and discharge (i.e. no further follow up) from hospital the same day. Similarly, there was no difference in the recovery using the arm, quality of life, complications encountered or school absences. There was a very slight increase in pain killer use in the bandage group at day 1, but not at any other time point. Overall, the cost of the offer of a bandage was slightly lower for families and the NHS.

In conclusion, the findings of this study support offering a bandage to be used at the discretion of families to treat children with a torus fracture of the wrist.

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This report

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