

Purpose

The aim of this pilot research study was to determine the feasibility, usability, and acceptability of a low-cost feeding chair for children with disabilities in low resourced settings.

Background

- Assistive technology is an important tool to support children with disabilities to maintain proper positioning during mealtime, but only 5-15% of people with disabilities in low-income countries have access to the assistive devices they need (UNICEF, 2015)
- 89% of children with disabilities have a persistent feeding problem that interferes with safe eating (Rabaey, 2017) and puts them at increased risk for poor health, development, and early childhood mortality.
- Proper positioning is necessary for safe feeding, eating, and swallowing (Alghadir et al., 2017; Borowitz & Borowitz, 2018)
 - Improves functioning of multiple body systems
 - Decreases risk for aspiration
 - Improves responsive feeding practices
- Difficulty during mealtime can lead to social and health consequences, including caregiver stress and burnout (Bonsall, 2013; Snider et al., 2011)

Design and Methods

20 caregiver/child pairs with cerebral palsy
EDAC score of 3, 4, or 5

Quantitative data :

- Parent subsection of the Feeding Impact Scale
- Chair observation form
- Pre/post scores of:
 - Non-communicating Children's Pain Checklist
 - Assessment of Feeding Position (Rabaey, 2020)

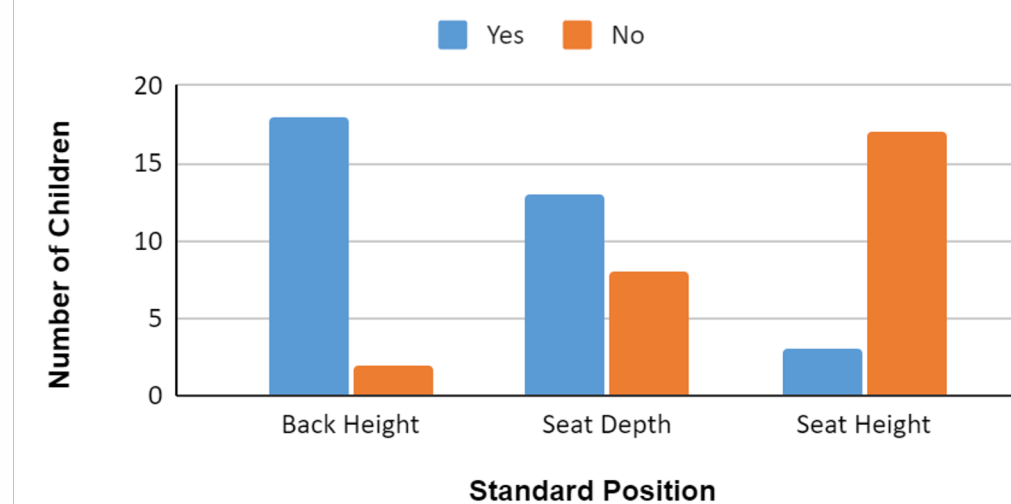
Qualitative data:

- Focus groups with caregivers
- Photos
- Videos coded for responsive feeding

Analysis



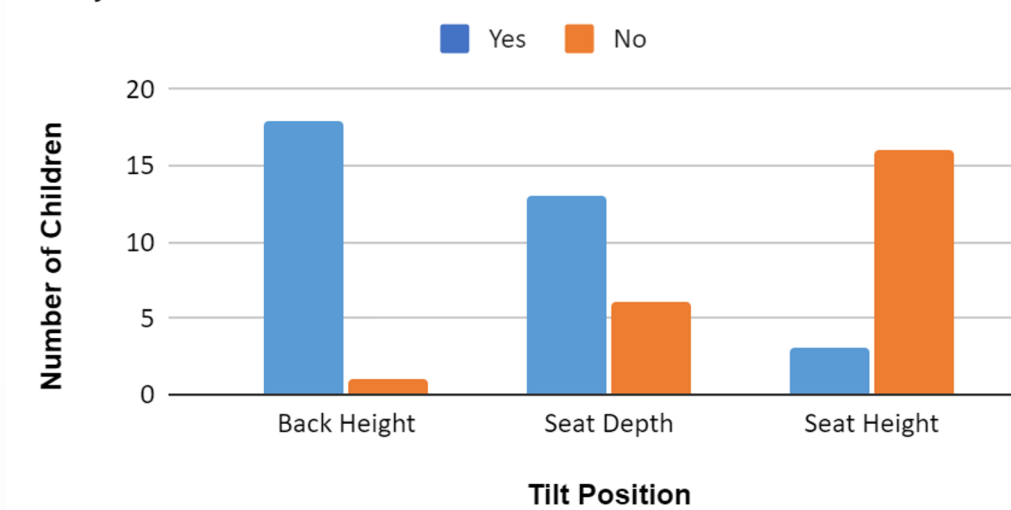
Figure 1
Fit of Child in Chair: Standard Position



100% of children needed external positioning aids while using the chair, with the most common modifications being:

- headrest (90%)
- footrest (85%)
- chest strap (70%)
- Hip and trunk pads (65%)

Figure 2
Fit of Child in Chair: Tilt Position



References

References available upon request.

Additional research team members: David Kibirige, OT, Rhona Asinguza, OT, Maria Nakibirango.
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Results

55-70% increase in correct hip, head, and trunk positions when the children were seated in the feeding chair

70% of children utilized tilt for best feeding position

65% increase in responsive feeding practices in caregiver/child dyads

Common themes of focus group:

- Both child and caregiver were more comfortable during feeding than before
- Child participants were calmer and more relaxed
- Child participants were able to see caregiver faces

"My child can go to a party and not be left behind or lying in a corner"

"It's faster in that chair to feed than on the floor, it's upright, calm...everything is much better...less crying and shaking"

"Previously feeding the baby was passive, like it was forceful feeding because of how they hold her or their posture. But now when she's seated comfortable in the chair, I feel like it can even make me want to feed"

Conclusions

- SPOON chair has feasibility and acceptability to improve mealtime experiences for CWD in LMIC
- Chair prototype modifications with engineer
- Phase 2 longer term usability study with refined design
- Modifications: wider, hip and trunk pads, revised head rest, longer seat belt, additional Velcro

