

Feasibility of implementing ballistic strength training to improve mobility outcomes of inpatients with traumatic brain injury

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(R version 4.2.1)

Participants in the Data

There are 14 different participants listed in the Demographic Data. Of these, participant C302 was excluded from the rest of the datasets, and participant C303 was excluded from the Post-intervention and Difference datasets. Table 1 summarises which Participants are excluded from which dataset.

Table 1: Participants in each Dataset

Participant	Demographic	Baseline	Post-Intervention	Difference
B201	T	T	T	T
B202	T	T	T	T
B203	T	T	T	T
C301	T	T	T	T
C302	T	EXCLUDED	EXCLUDED	EXCLUDED
C303	T	T	EXCLUDED	EXCLUDED
D401	T	T	T	T
E501	T	T	T	T
E502	T	T	T	T
E503	T	T	T	T
E504	T	T	T	T
E505	T	T	T	T
F601	T	T	T	T
F602	T	T	T	T

Participant	Exercise Log
B201	T
B202	T
B203	T
C301	T
C302	EXCLUDED
C303	T
D401	T
E501	T
E502	T
E503	T
E504	T

Participant	Exercise Log
E505	T
F601	T
F602	T

Descriptive Summaries

Provided below is a descriptive summary along with box plots of the numeric variables of the four datasets.

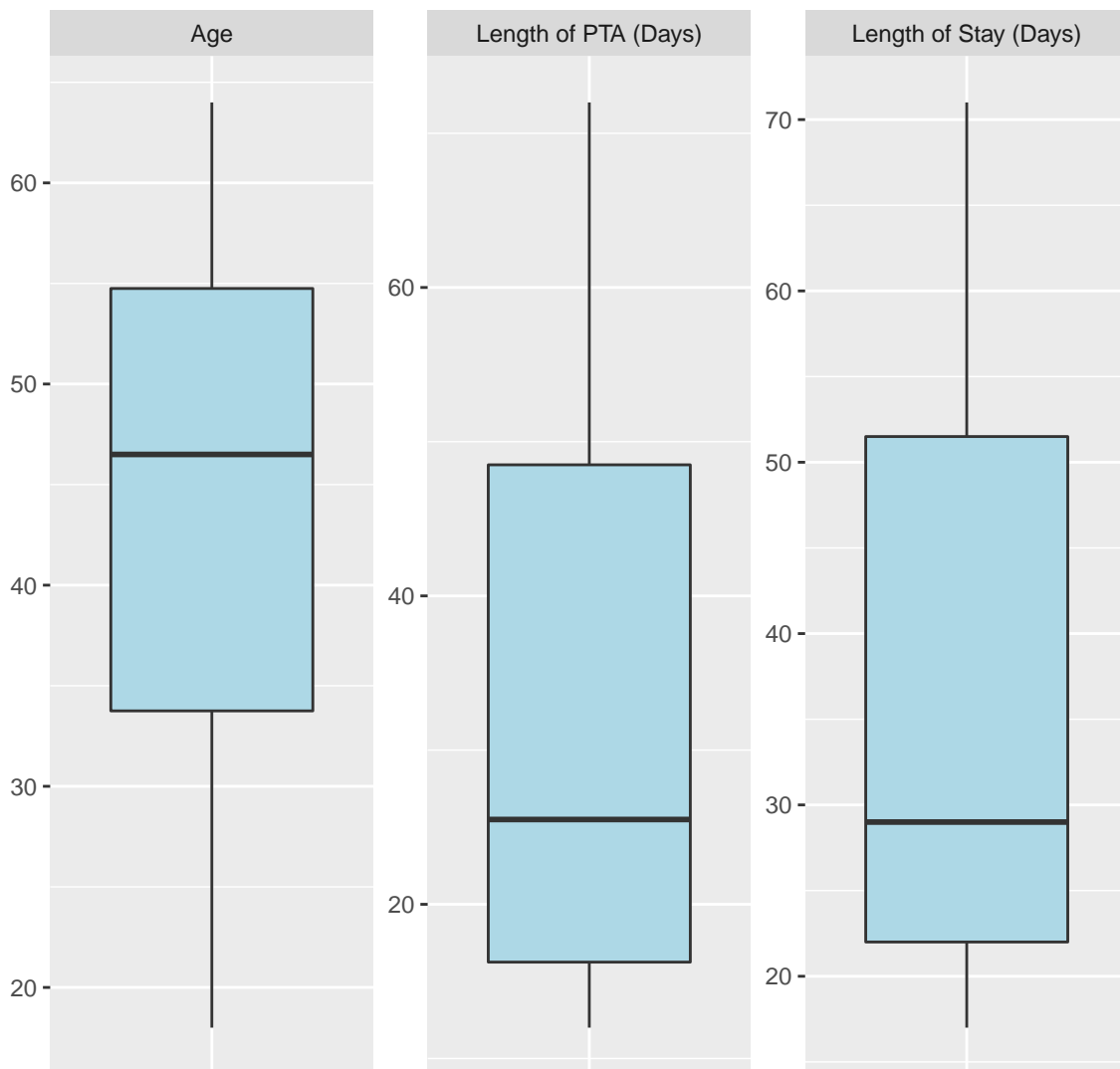
Sheet 1: Demographic data

The missing value in the “Length of Stay” variable is due to participant E503’s value still needing to be determined, and the other two are due to participants C302 and C303 being excluded.

	Data (N = 14)
Age	
min	18
max	64
mean (sd)	43.36 (14.86)
median (iqr)	46.50 (33.75, 54.75)
mean (CI)	43.36 (95% CI: 35.58, 51.14)
Gender	
Female	1 (7.1%)
Male	13 (92.9%)
MOI	
Assault	4 (28.6%)
Fall	1 (7.1%)
Pedestrian	1 (7.1%)
Recreational Activity	5 (35.7%)
Vehicle	3 (21.4%)
Ethnicity	
Asian	4 (28.6%)
European-New Zealander	4 (28.6%)
Maori	4 (28.6%)
Other European	2 (14.3%)
Classification (M/S)	
Severe	14 (100.0%)
GCS on arrival to hospital	
3 to 8	3 (21.4%)
9 to 13	8 (57.1%)
14 to 15	3 (21.4%)
Length of PTA (Days)	
min	12
max	72
mean (sd)	33.43 (20.20)
median (iqr)	25.50 (16.25, 48.50)
mean (CI)	33.43 (95% CI: 22.85, 44.01)
Length of Stay (Days)	
min	17
max	71
mean (sd)	36.55 (20.00)
median (iqr)	29.00 (22.00, 51.50)
mean (CI)	36.55 (95% CI: 24.73, 48.36)
Unknown/Missing	3 (21.43%)
Orthopaedic injuries	
1	12 (85.7%)
0	2 (14.3%)
Skull Fracture	
1	8 (57.1%)

	Data (N = 14)
0	6 (42.9%)
Upper Limb Fracture	
1	5 (35.7%)
0	9 (64.3%)
Rib Fracture	
1	3 (21.4%)
0	11 (78.6%)
Spine Fracture/Subluxation	
1	2 (14.3%)
0	12 (85.7%)

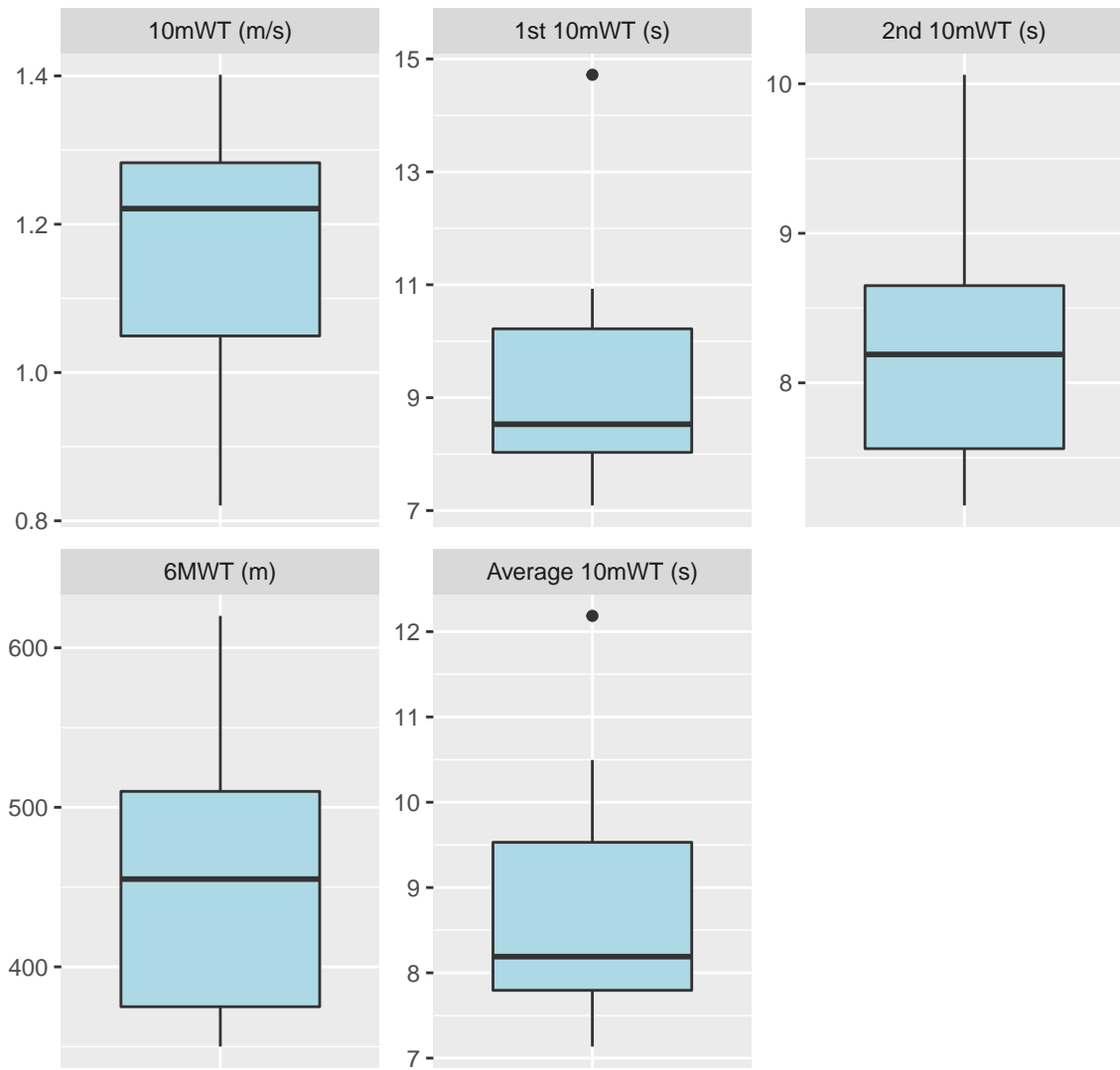
Boxplots Of Numeric Variables



Sheet 2: Baseline data

	Data (N = 13)
1st 10mWT (s)	
min	7.09
max	14.72
mean (sd)	9.14 (2.05)
median (iqr)	8.53 (8.03, 10.22)
mean (CI)	9.14 (95% CI: 8.03, 10.26)
2nd 10mWT (s)	
min	7.18
max	10.06
mean (sd)	8.31 (0.95)
median (iqr)	8.19 (7.56, 8.65)
mean (CI)	8.31 (95% CI: 7.79, 8.83)
Average 10mWT (s)	
min	7.14
max	12.19
mean (sd)	8.72 (1.44)
median (iqr)	8.19 (7.79, 9.53)
mean (CI)	8.72 (95% CI: 7.94, 9.51)
10mWT (m/s)	
min	0.82
max	1.4
mean (sd)	1.17 (0.17)
median (iqr)	1.22 (1.05, 1.28)
mean (CI)	1.17 (95% CI: 1.08, 1.26)
6MWT (m)	
min	350
max	620
mean (sd)	454.08 (84.80)
median (iqr)	455.00 (375.00, 510.00)
mean (CI)	454.08 (95% CI: 407.98, 500.17)
Mobility status: FIM walking sub-score	
4 (min assist)	4 (30.8%)
5 (supervision)	7 (53.8%)
7 (independent)	2 (15.4%)
Walking Aids	
Low walking frame	1 (7.7%)
Unaided	11 (84.6%)
Walking stick	1 (7.7%)

Boxplots Of Numeric Variables

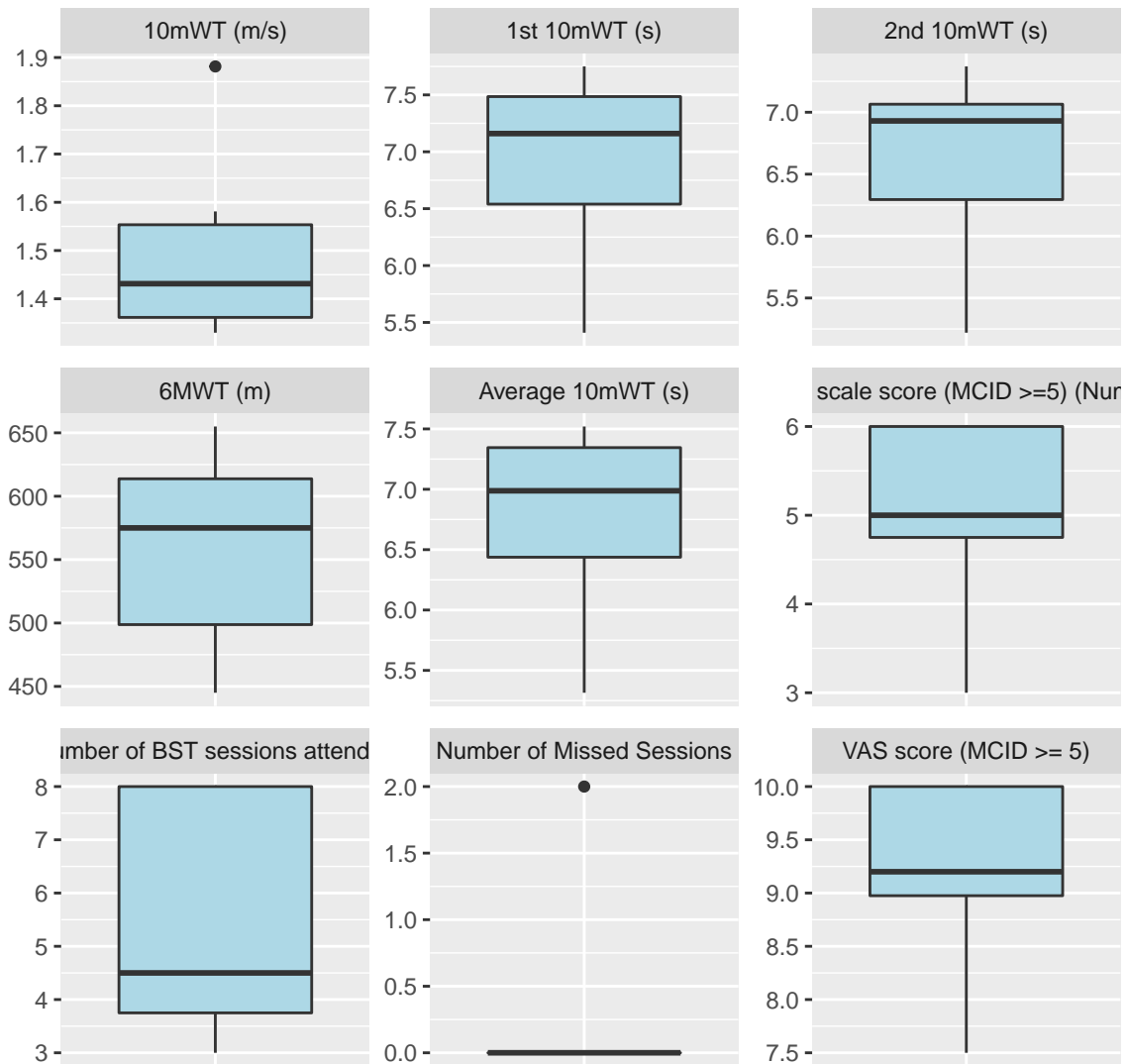


Sheet 3: Post-Intervention data

	Data (N = 12)
1st 10mWT (s)	
min	5.41
max	7.75
mean (sd)	6.95 (0.71)
median (iqr)	7.16 (6.54, 7.48)
mean (CI)	6.95 (95% CI: 6.53, 7.37)
Unknown/Missing	1 (8.33%)
2nd 10mWT (s)	
min	5.22
max	7.37
mean (sd)	6.68 (0.64)
median (iqr)	6.93 (6.29, 7.06)
mean (CI)	6.68 (95% CI: 6.31, 7.06)
Unknown/Missing	1 (8.33%)
Average 10mWT (s)	
min	5.31
max	7.52
mean (sd)	6.82 (0.63)
median (iqr)	6.99 (6.44, 7.34)
mean (CI)	6.82 (95% CI: 6.47, 7.18)
10mWT (m/s)	
min	1.33
max	1.88
mean (sd)	1.48 (0.15)
median (iqr)	1.43 (1.36, 1.55)
mean (CI)	1.48 (95% CI: 1.39, 1.57)
6MWT (m)	
min	445
max	655
mean (sd)	560.58 (69.35)
median (iqr)	575.00 (498.75, 613.75)
mean (CI)	560.58 (95% CI: 521.35, 599.82)
GroC scale score (MCID >=5)	
Plus 3 (0-6)	1 (8.3%)
Plus 4	2 (16.7%)
Plus 5	4 (33.3%)
Plus 5.5	1 (8.3%)
Plus 6	4 (33.3%)
GroC scale score (MCID >=5) (Numeric)	
min	3
max	6
mean (sd)	5.00 (0.95)
median (iqr)	5.00 (4.75, 6.00)
mean (CI)	5.00 (95% CI: 4.46, 5.54)
VAS score (MCID >= 5)	
min	7.5
max	10
mean (sd)	9.18 (0.89)
median (iqr)	9.20 (8.97, 10.00)
mean (CI)	9.18 (95% CI: 8.67, 9.68)

	Data (N = 12)
Number of BST sessions attended	
min	3
max	8
mean (sd)	5.25 (2.14)
median (iqr)	4.50 (3.75, 8.00)
mean (CI)	5.25 (95% CI: 4.04, 6.46)
Reasons for not attending a total of 8 sessions	
Covid isolation and discharge	1 (8.3%)
Discharge	7 (58.3%)
N/A (8 sessions attended)	4 (33.3%)
Mobility status: FIM walking sub-score	
6 (modified independence)	1 (8.3%)
7 (independent)	11 (91.7%)
Walking Aids	
Unaided	12 (100.0%)
Number of Missed Sessions	
min	0
max	2
mean (sd)	0.17 (0.58)
median (iqr)	0.00 (0.00, 0.00)
mean (CI)	0.17 (95% CI: -0.16, 0.49)

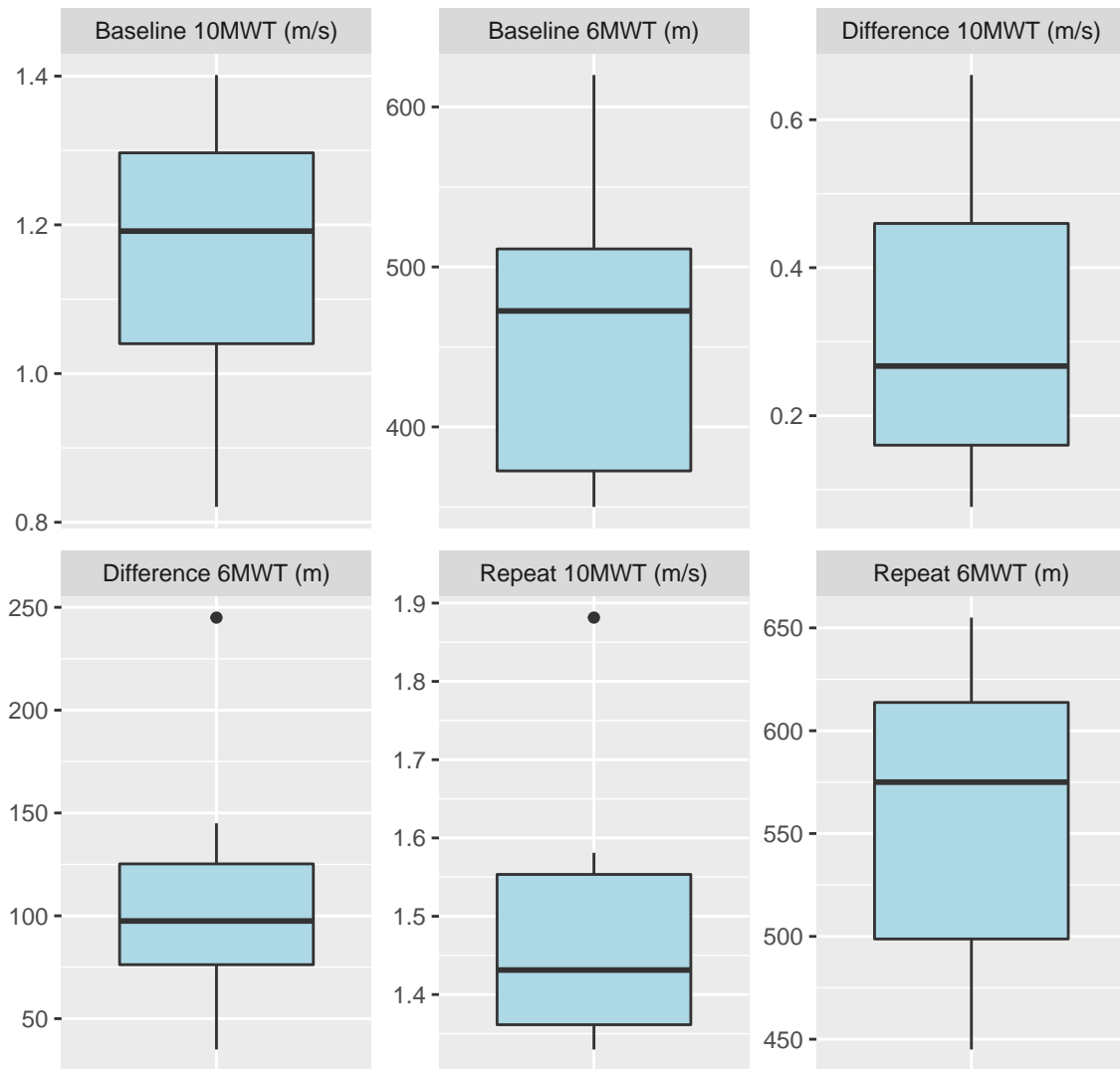
Boxplots Of Numeric Variables



Sheet 4: Difference data

	Data (N = 12)
Baseline 10MWT (m/s)	
min	0.82
max	1.4
mean (sd)	1.17 (0.18)
median (iqr)	1.19 (1.04, 1.30)
mean (CI)	1.17 (95% CI: 1.07, 1.27)
Repeat 10MWT (m/s)	
min	1.33
max	1.88
mean (sd)	1.48 (0.15)
median (iqr)	1.43 (1.36, 1.55)
mean (CI)	1.48 (95% CI: 1.39, 1.57)
Difference 10MWT (m/s)	
min	0.08
max	0.66
mean (sd)	0.31 (0.19)
median (iqr)	0.27 (0.16, 0.46)
mean (CI)	0.31 (95% CI: 0.21, 0.42)
Baseline 6MWT (m)	
min	350
max	620
mean (sd)	456.08 (88.24)
median (iqr)	472.50 (372.50, 511.25)
mean (CI)	456.08 (95% CI: 406.16, 506.01)
Repeat 6MWT (m)	
min	445
max	655
mean (sd)	560.58 (69.35)
median (iqr)	575.00 (498.75, 613.75)
mean (CI)	560.58 (95% CI: 521.35, 599.82)
Difference 6MWT (m)	
min	35
max	245
mean (sd)	104.50 (56.14)
median (iqr)	97.50 (76.25, 125.25)
mean (CI)	104.50 (95% CI: 72.74, 136.26)
Mobility status: FIM walking sub-score	
(7 to 7 independent)	2 (16.7%)
4 (min assist) to 7 (independent)	3 (25.0%)
5 (supervision) to 6 (modified independence)	1 (8.3%)
5 (supervision) to 7 (independent)	6 (50.0%)

Boxplots Of Numeric Variables



Exercise Log Data

A Total of 71 sessions were completed, of which 22 (30.99%) were done with assistance and 49 (69.01%) with supervision.

	Data (N = 13)
Number of sessions with assistance	
min	0
max	8
mean (sd)	1.69 (3.01)
median (iqr)	0.00 (0.00, 1.00)
mean (CI)	1.69 (95% CI: 0.06, 3.33)
Number of sessions with supervision	
min	0
max	8
mean (sd)	3.77 (2.68)
median (iqr)	4.00 (3.00, 5.00)
mean (CI)	3.77 (95% CI: 2.31, 5.23)
Part A skills acquisition	
Not achieved	2 (15.4%)
Session 1	1 (7.7%)
Session 2	7 (53.8%)
Session 3	1 (7.7%)
Session 5	1 (7.7%)
Session 8	1 (7.7%)
Amount of progressions part A	
Level 1: calf raises over edge of footplate	3 (23.1%)
Level 2	3 (23.1%)
Level 3	6 (46.2%)
Level 4	1 (7.7%)
Part B skills acquisition	
Not achieved	5 (38.5%)
Session 3	2 (15.4%)
Session 4	1 (7.7%)
Session 5	2 (15.4%)
Session 7	3 (23.1%)
Amount of progressions part B	
0.5kg	3 (23.1%)
Bodyweight (end of participation)	5 (38.5%)
Not achieved	5 (38.5%)
Orthoses	
Abdominal binder	1 (7.7%)
Aspen collar	1 (7.7%)
Knee tape	1 (7.7%)
None	7 (53.8%)
Upper limb cast	1 (7.7%)
Upper limb sling	2 (15.4%)

Boxplots Of Numeric Variables

