

Evaluating the usability of a co-designed power assisted exercise graphical user interface for people with stroke

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Additional file 2

User by problem matrices

Table 1: Safety issues identified on v1

	EU1	EU2	EU3	EU4	EU6	EU7	EU8	EU9	EU 10	PU1	PU2	PU3	PU4	PU5	PU6	PU7	PU8	PU9	PU 10	Score
S1.1 Help icon not visible enough									4				4		4	4			4	S=4 F=5
S1.2 Difference between stop/pause/help unclear			4	4		4	4		4	4	4		4		4				4	S=4 F=10
S1.3 'We're on our way' message/image missed	3						3						3		3		3			S=3 F=5
S1.4 'Help' function and purpose unclear										3			3		3					S=3 F=3

Table 2: Operational issues identified on v1

	EU1	EU2	EU3	EU4	EU6	EU7	EU8	EU9	EU 10	PU1	PU2	PU3	PU4	PU5	PU6	PU7	PU8	PU9	PU 10	Score
O1.1 Repeated clicks to select intended duration																3				S=3 F=1
O1.2 Delay in identifying 'play' icon		3					3		3	3	3	3	3		3				3	S=3 F=9
O1.3 Repeated clicks to start exercise				3			3			3			3				3			S=3 F=5
O1.4 No option to resume workout after 'help' activation											3					3				S=3 F=2
O1.5 Error with duration selection	3							3												S=3 F=2
O1.6 Logout system unclear		2	2					2												S=2 F=3
O1.7 Curly icons for duration selection unclear								2			2				2				2	S=2 F=4
O1.8 The word 'fob' ambiguous													1	1						S=1 F=2

Table 3: Programme effectiveness issues identified on v1

	EU1	EU2	EU3	EU4	EU6	EU7	EU8	EU9	EU 10	PU1	PU2	PU3	PU4	PU5	PU6	PU7	PU8	PU9	PU 10	Score
P1.1 No real time feedback on direction of effort									2											S=2 F=1
P1.2 Body parts to be exercise not visualised																			2	S=2 F=1
P1.3 No option to input perceived effort													2				2			S=2 F=2
P1.4 Real time effort feedback unclear	3	3			3		3		3	3	3	3	3	3	3	3	3			S=3 F=13
P1.5 No real time feedback re symmetry						3		3								3			3	S=3 F=4
P1.6 No real time feedback on distance covered					2															S=2 F=1

Table 4: User engagement issues identified on v1

	EU1	EU2	EU3	EU4	EU6	EU7	EU8	EU9	EU 10	PU1	PU2	PU3	PU4	PU5	PU6	PU7	PU8	PU9	PU 10	Score
U1.1 Still image not inspiring											1					1				S=1 F=2
U1.2 Col de Shapemaster not meaningful			2		2	2		2			2		2	2			2			S=2 F=8
U1.3 Feedback metrics not meaningful		2					2		2	2			2	2	2		2		2	S=2 F=9
U1.4 Missed 'col-de-Shapemaster' text				2	2		2	2			2				2				2	S=2 F=7

Table 5: Safety issues identified on v2

	EU1	EU2	EU3	EU4	EU6	EU7	EU8	EU9	EU 10	PU1	PU2	PU3	PU4	PU6	PU7	PU8	PU9	PU 10	Score
S2.1 Help icon not visible enough								4						4					F=2 S=4
S2.2 Countdown to machine starting too short	4							4					4			4			S=4 F=5
S2.3 Plus and minus icons could be misinterpreted for speed											3								S=3 F=1
S2.4 Potential for user to proceed without assistance			4									4		4					S=4 F=3

Table 6: Operational issues identified on v2

	EU1	EU2	EU3	EU4	EU6	EU7	EU8	EU9	EU 10	PU1	PU2	PU3	PU4	PU6	PU7	PU8	PU9	PU 10	Score
02.1 Attempted to navigate to 'hilly' programme via quick start		3																	S=3 F=1
02.2 Concept of baseline assessment unclear			3	3			3				3		3			3		3	S=3 F=7
02.3 Missed the 'measurement/programme' subtext					2		2		2		2		2		2				S=2 F=6
02.4 Assistance for baseline assessment unclear	3		3							3	3					3		3	S=3 F=6
02.5 Cannot select duration in 'my programme' area			3							3		3			3	3			S=3 F=5

Table 7: Programme effectiveness issues identified on v2

	EU1	EU2	EU3	EU4	EU6	EU7	EU8	EU9	EU 10	PU1	PU2	PU3	PU4	PU6	PU7	PU8	PU9	PU 10	Score
P2.1 Real time effort feedback bubble not obvious								3											S=3 F=1
P2.2 Purpose of target intensity circle not obvious	3		3			3	3	3		3		3	3	3	3	3		3	S=3 F=12
P2.3 Missed the plus icon for intensity adjustment					3		3												S=3 F=1
P2.4 Not clear that you can adjust intensity in real time							3		3										S=3 F=2
P2.5 PwS would need longer to adjust effort								3											S=3 F=1
P2.6 No temporal graphics on real time feedback										2		2				2			S=2 F=3
P2.7 Speed adjustment option needed											2								S=2
P2.8 Selected intensity not displayed			2					2	2	2					2	2		2	S=2 F=7
P2.9 No feedback if you do click plus or minus icons	2		2					2		2									S=2 F=4
P2.10 No real time feedback on heart rate						2									2				S=2 F=2

