

18 Multi-trait scaling analyses of the WHQ (B6)

Multi-trait scaling analyses were applied to data to examine the scale structure of the WHQ as a comparative statistical approach to factor analyses. The strength of item-scale correlations for 1) a single scale structure and 2) a hypothesised set of multi-item scales and single items informed by clinical expectation, proposed by the study team prior to any examination of the data. Item-scale correlations were examined and item convergence was supported if the item correlated moderately (values of 0.30 or above) with the hypothesised scale¹. Item discrimination was supported if the highest item-scale correlation was between the item and its own hypothesised scale (in a multiscale model), compared with other hypothesised scales in the model.

Table 18.1: Item-scale correlations for a single item scale (Phase A data).

		Patient self- assessment (n=304)	Observer assessment (n=311)
Item		Correlation	Correlation
1	Was there redness spreading away from the wound? (erythema/cellulitis)	0.50	0.59
2	Was the area around the wound warmer than the surrounding skin?	0.37	0.54
3	Was any part of the wound leaking fluid?	0.74	0.75
3a	Was it clear fluid? (serous exudate)	0.48	0.30
3b	Was it blood-stained fluid? (haemoserous exudate)	0.67	0.58
3c	Was it thick and yellow/green fluid (pus/purulent exudate)	0.52	0.59
4	Have the edges of any part of the wound separated/gaped open on their own accord? (spontaneous dehiscence)	0.55	0.66

4b	Did the deeper tissue separate?	0.46	0.46
5	Has the area around the wound become swollen?	0.23	0.37
6	Has the wound been smelly?	0.32	0.39
7	Has the wound been painful to touch?	0.16	0.31
8	Have you had, or felt like you have had, a raised temperature or fever? (fever <38°C)	0.31	0.44
9	Have you sought advice because of a problem with your wound, other than at a routine planned follow-up appointment?	0.58	0.59
10	Has anything been put on the skin to cover the wound? (dressing)	0.36	0.47
11	Have you been back into hospital for treatment with a problem with your wound?	0.49	0.41
12	Have you been given antibiotics for a problem with you wound?	0.61	0.64
13	Have the edges of your wound been deliberately separated by a doctor or nurse?	0.33	0.41
14	Has your wound been scraped or cut to remove any unwanted tissue? (debridement of wound)	0.17	0.21
15	Has your wound been drained? (drainage of pus/abscess)	0.38	0.31
16	Have you had an operation under general anaesthetic for treatment of a problem with your wound?	0.07	(no observations)

Table 18.2: Item-scale correlations for a hypothesised multi-item scale (Phase A data, patient self-assessment)

		Patient self-assessment n=284 (Phase A only)					
		Scale 1 inflammation	Scale 2 Wound leaking	Scale 3 Wound care interventions	Scale 4 Dehiscence	Single item Smell	Single item Fever
Number of items/sub-items in scale		4	5	7	2	1	1
Cronbach alpha co-efficient		0.62	0.70	0.64	0.75	-	-
Item							
1	Was there redness spreading away from the wound? (erythema/cellulitis)	0.42*	0.32	0.40	0.31	0.17	0.14
2	Was the area around the wound warmer than the surrounding skin?	0.47*	0.24	0.22	0.23	0.13	0.24
5	Has the area around the wound become swollen?	0.35*	0.08	0.20	0.14	0.07	0.11
7	Has the wound been painful to touch?	0.35*	-0.00	0.12	0.11	0.24	0.07
3	Was any part of the wound leaking fluid?	0.25	0.73*	0.65	0.56	0.31	0.21
3a	Was it clear fluid? (serous exudate)	0.19	0.54*	0.41	0.29	0.22	0.20
3b	Was it blood-stained fluid? (haemoserous exudate)	0.24	0.67*	0.56	0.52	0.26	0.24
3c	Was it thick and yellow/green fluid (pus/purulent exudate)	0.19	0.50*	0.45	0.48	0.30	0.06
10	Has anything been put on the skin to cover the wound? (dressing)	0.12	0.43*	0.37	0.26	0.11	0.09
9	Have you sought advice because of a problem with your wound, other than at a routine planned follow-up appointment?	0.33	0.51	0.44*	0.41	0.22	0.22
11	Have you been back into hospital for treatment with a problem with your wound?	0.14	0.37	0.51*	0.35	0.10	0.26
12	Have you been given antibiotics for a problem with you wound?	0.29	0.51	0.55*	0.34	0.11	0.23
13	Have the edges of your wound been deliberately separated by a doctor or nurse?	0.16	0.27	0.33*	0.31	0.17	0.16
14	Has your wound been scraped or cut to remove any unwanted tissue? (debridement of wound)	0.08	0.12	0.24*	0.06	-0.03	-0.04
15	Has your wound been drained? (drainage of pus/abscess)	0.09	0.28	0.39*	0.26	0.21	0.09
16	Have you had an operation under general anaesthetic for	0.08	0.09	0.05*	0.00	-0.02	-0.03

	treatment of a problem with your wound?						
4	Have the edges of any part of the wound separated/gaped open on their own accord? (spontaneous dehiscence)	0.27	0.52	0.46	0.66*	0.22	0.25
4b	Did the deeper tissue separate?	0.16	0.40	0.39	0.66*	0.22	0.26
6	Has the wound been smelly?	0.23	0.25	0.23	0.23	*	0.27
8	Have you had, or felt like you have had, a raised temperature or fever? (fever <38°C)	0.19	0.20	0.26	0.26	0.27	*

Table 18.3: Item-scale correlations for a hypothesised multi-item scale (Phase A data, observer assessment)

Observer assessment n=307 (Phase A only)							
	Scale 1 inflammation	Scale 2 Wound leaking	Scale 3 Wound care interventions	Scale 4 Dehiscence	Single item Smell	Single item Fever	
Number of items/sub-items in scale	4	5	7	2	1	1	
Cronbach alpha co-efficient	0.72	0.70	0.66	0.79	-	-	
Item							
1	Was there redness spreading away from the wound? (erythema/cellulitis)	0.63*	0.48	0.43.	0.37	0.24	0.26
2	Was the area around the wound warmer than the surrounding skin?	0.61*	0.40	0.38	0.38	0.23	0.35
5	Has the area around the wound become swollen?	0.46*	0.22	0.27	0.22	0.23	0.25
7	Has the wound been painful to touch?	0.35*	0.25	0.18	0.24	0.16	0.11
3	Was any part of the wound leaking fluid?	0.45	0.78*	0.59	0.55	0.30	0.25
3a	Was it clear fluid? (serous exudate)	0.18	0.35*	0.21	0.25	0.17	0.06
3b	Was it blood-stained fluid? (haemoserous exudate)	0.40	0.54*	0.45	0.43	0.27	0.31
3c	Was it thick and yellow/green fluid (pus/purulent exudate)	0.51	0.45*	0.47	0.45	0.33	0.24
10	Has anything been put on the skin to cover the wound? (dressing)	0.28	0.48*	0.44	0.30	0.23	0.21
9	Have you sought advice because of a problem with your wound, other than at a routine planned follow-up appointment?	0.38	0.51	0.52*	0.38	0.28	0.24
11	Have you been back into hospital for treatment with a problem with your wound?	0.09	0.31	0.49*	0.30	0.14	0.44
12	Have you been given antibiotics for a problem with you wound?	0.48	0.51	0.57*	0.39	0.21	0.34
13	Have the edges of your wound been deliberately separated by a doctor or nurse?	0.19	0.33	0.37*	0.38	0.22	0.31
14	Has your wound been scraped or cut to remove	0.17	0.15	0.12*	0.27	0.15	0.30

	any unwanted tissue? (debridement of wound)						
15	Has your wound been drained? (drainage of pus/abscess)	0.13	0.21	0.41*	0.22	0.08	0.10
16	Have you had an operation under general anaesthetic for treatment of a problem with your wound?	-	-	-	-	-	-
4	Have the edges of any part of the wound separated/gaped open on their own accord? (spontaneous dehiscence)	0.42	0.55	0.54	0.73*	0.33	0.34
4b	Did the deeper tissue separate?	0.26	0.36	0.36	0.73*	0.11	0.29
6	Has the wound been smelly?	0.29	0.34	0.31	0.31	*	0.24
8	Have you had, or felt like you have had, a raised temperature or fever? (fever <38°C)	0.32	0.29	0.43	0.37	0.24	*

† Results exclude this item from the analysis because all observer assessment scores were equal to zero

References

1. Fayers PM, Machin D. Quality of Life: Assessment, Analysis and Interpretation 2002 8 MAR 2002.