LBP-TBQ:
Supplementary digital content 10

VI. Multi-group analyses for measurement invariance – parameter estimates and model fit (ML)

Between the four treatments

Multi-group CFA analyses were performed with the 16-item LBP-TBQ to examine measurement invariance (MI) between the 4 treatments (i.e. to study whether participants interpret items similarly in relation to the 4 different treatments). (N = 399 for medication, 388 for exercise, 383 for manual therapy, 369 for acupuncture.)

Results are presented below and include model fit summaries, nested models comparisons, and graphical representation of the most appropriate models. For these analyses, multivariate outliers were first excluded from the sample to exclude this source of model misspecification; sensitivity analyses were performed selectively with the total samples, with similar results. Models reported here were estimated using maximum likelihood (ML).

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Unconstrained	202	1663.058	406	.000	4.096
Measurement weights	166	1739.465	442	.000	3.935
Measurement intercepts	130	2295.939	478	.000	4.803
Structural means	118	2586.098	490	.000	5.278
Structural covariances	106	2643.590	502	.000	5.266
Measurement residuals	58	3717.736	550	.000	6.760
Saturated model	608	.000	0		
Independence model	128	21750.190	480	.000	45.313

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Unconstrained	.924	.910	.941	.930	.941
Measurement weights	.920	.913	.939	.934	.939
Measurement intercepts	.894	.894	.915	.914	.915
Structural means	.881	.884	.901	.903	.901
Structural covariances	.878	.884	.899	.904	.899
Measurement residuals	.829	.851	.851	.870	.851
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Unconstrained	.045	.043	.047	1.000
Measurement weights	.044	.042	.046	1.000
Measurement intercepts	.050	.048	.052	.567
Structural means	.053	.051	.055	.011
Structural covariances	.053	.051	.055	.012
Measurement residuals	.061	.059	.063	.000
Independence model	.170	.168	.172	.000

AIC

Model	AIC	BCC	BIC	CAIC
Unconstrained	2067.058	2085.801		
Measurement weights	2071.465	2086.868		
Measurement intercepts	2555.939	2568.001		
Structural means	2822.098	2833.048		
Structural covariances	2855.590	2865.425		
Measurement residuals	3833.736	3839.118		
Saturated model	1216.000	1272.417		
Independence model	22006.190	22018.067		

Nested Model Comparisons

Assuming model Unconstrained to be correct:

Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Measurement weights	36	76.407	.000	.004	.004	-.004	-.004
Measurement intercepts	72	632.881	.000	.029	.030	.016	.016
Structural means	84	923.041	.000	.042	.043	.026	.027
Structural covariances	96	980.532	.000	.045	.046	.026	.026
Measurement residuals	144	2054.679	.000	.094	.096	.059	.060

Assuming model Measurement weights to be correct:

Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Measurement intercepts	36	556.474	.000	.026	.026	.019	.020
Structural means	48	846.634	.000	.039	.040	.030	.030
Structural covariances	60	904.125	.000	.042	.042	.029	.030
Measurement residuals	108	1978.272	.000	.091	.093	.062	.064

Assuming model Measurement intercepts to be correct:

Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Structural means	12	290.160	.000	.013	.014	.010	.011
Structural covariances	24	347.651	.000	.016	.016	.010	.010
Measurement residuals	72	1421.798	.000	.065	.067	.043	.044

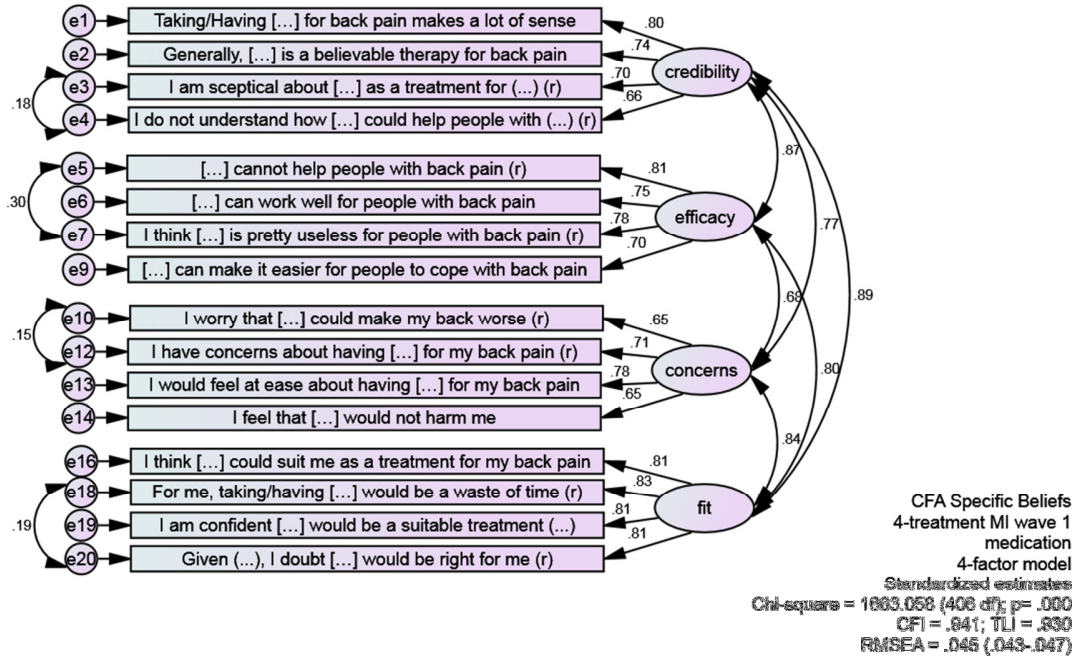
Assuming model Structural means to be correct:

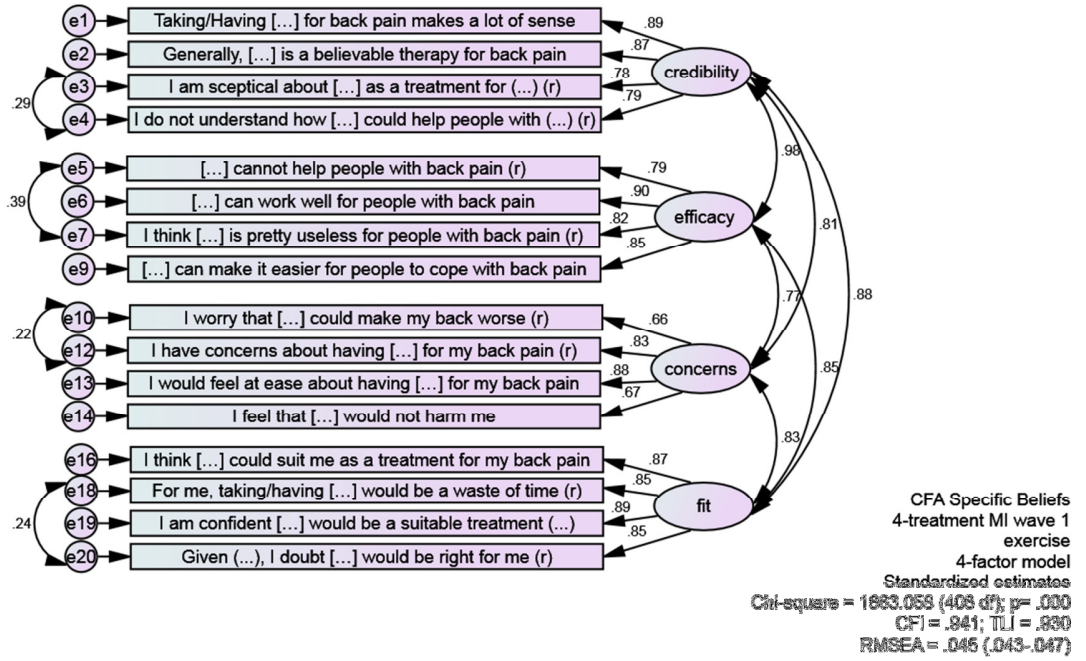
Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Structural covariances	12	57.491	.000	.003	.003	.000	.000
Measurement residuals	60	1131.638	.000	.052	.053	.033	.033

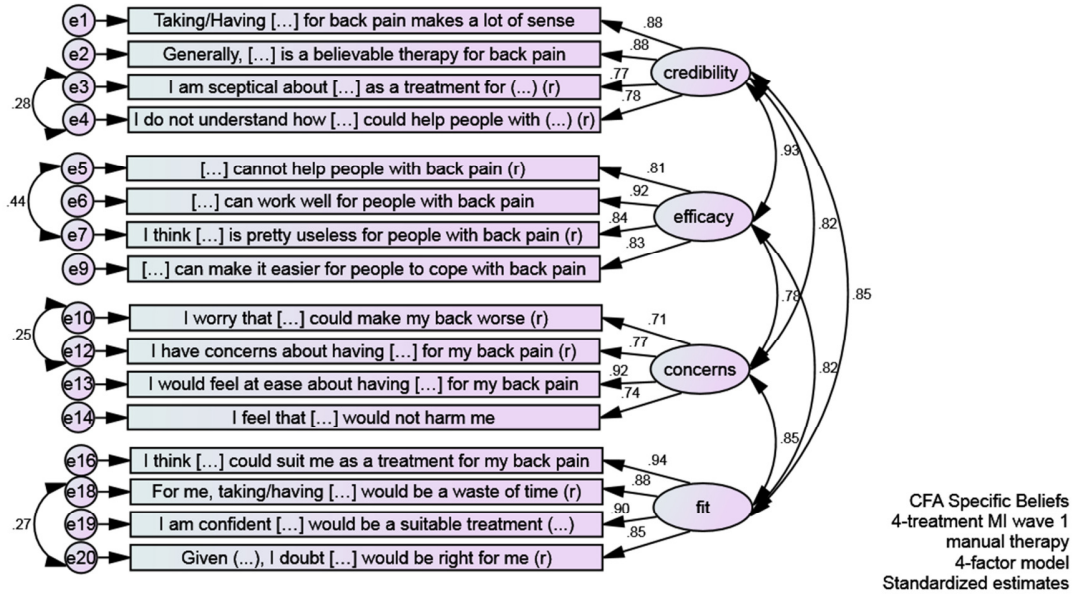
Assuming model Structural covariances to be correct:

Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Measurement residuals	48	1074.147	.000	.049	.051	.033	.034

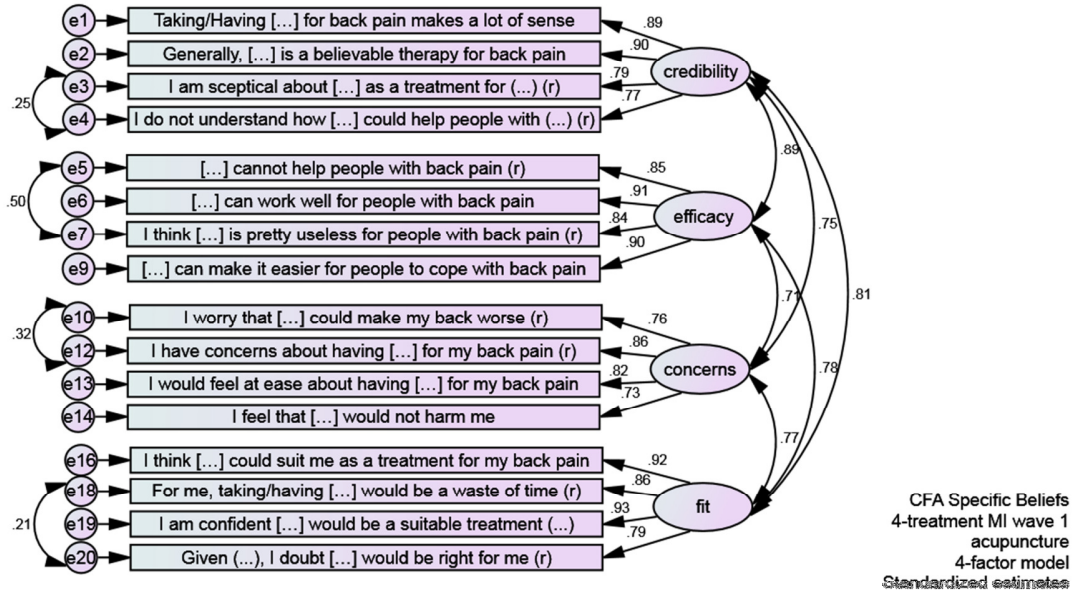
Unconstrained models:







CFA Specific Beliefs
4-treatment MI wave 1
manual therapy
4-factor model
Standardized estimates
Chi-square = 1663.058 (406 df); p= .000
CFI = .941; TLI = .930
RMSEA = .045 (.043-.047)



CFA Specific Beliefs
4-treatment MI wave 1
acupuncture
4-factor model
Standardized estimates
Chi-square = 1663.058 (406 df); p= .000
CFI = .941; TLI = .930
RMSEA = .045 (.043-.047)