

Table S1. Participants' demographic characteristics

Model		Factor loading	<i>p</i>
1st period			
Single-factor	1. Exercise ability	0.915	<0.001
	2. Self-care	0.950	<0.001
	3. Daily activities	0.960	<0.001
	4. Pain/discomfort	0.833	<0.001
	5. Anxiety/depression	0.524	<0.001
2nd period			
Single-factor	1. Exercise ability	0.933	<0.001
	2. Self-care	0.936	<0.001
	3. Daily activities	0.975	<0.001
	4. Pain/discomfort	0.825	<0.001
	5. Anxiety/depression	0.520	<0.001
1st period			
Sex			
Male ^{a)}	1. Exercise ability	<0.001	<0.001
	2. Self-care	<0.001	<0.001
	3. Daily activities	<0.001	<0.001
	4. Pain/discomfort	<0.001	<0.001
	5. Anxiety/depression	<0.001	<0.001
Female ^{b)}	1. Exercise ability	<0.001	<0.001
	2. Self-care	<0.001	<0.001
	3. Daily activities	<0.001	<0.001
	4. Pain/discomfort	<0.001	<0.001
	5. Anxiety/depression	<0.001	<0.001
Age			
Under 65 yr ^{c)}	1. Exercise ability	<0.001	<0.001
	2. Self-care	<0.001	<0.001
	3. Daily activities	<0.001	<0.001
	4. Pain/discomfort	<0.001	<0.001
	5. Anxiety/depression	0.522	<0.001
Older 65 yr ^{d)}	1. Exercise ability	0.890	<0.001
	2. Self-care	0.931	<0.001
	3. Daily activities	0.961	<0.001
	4. Pain/discomfort	0.795	<0.001
	5. Anxiety/depression	0.540	<0.001
2nd period			
Sex			
Male	1. Exercise ability	0.935	<0.001
	2. Self-care	0.951	<0.001
	3. Daily activities	0.979	<0.001
	4. Pain/discomfort	0.814	<0.001
	5. Anxiety/depression	0.531	<0.001
Female	1. Exercise ability	0.933	<0.001
	2. Self-care	0.926	<0.001
	3. Daily activities	0.970	<0.001
	4. Pain/discomfort	0.825	<0.001
	5. Anxiety/depression	0.508	<0.001
Age			
Under 65 yr	1. Exercise ability	0.907	<0.001
	2. Self-care	0.911	<0.001

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Table S1. Continued

Model		Factor loading		p
Older 65 yr	3. Daily activities	0.970		<0.001
	4. Pain/discomfort	0.784		<0.001
	5. Anxiety/depression	0.522		<0.001
	1. Exercise ability	0.922		<0.001
	2. Self-care	0.928		<0.001
	3. Daily activities	0.966		<0.001
	4. Pain/discomfort	0.813		<0.001
	5. Anxiety/depression	0.561		<0.001
1st period				
Sex group				
Configural	1. Exercise ability	0.928 ^{a)}	0.901 ^{b)}	<0.001
	2. Self-care	0.955 ^{a)}	0.951 ^{b)}	<0.001
	3. Daily activities	0.962 ^{a)}	0.964 ^{b)}	<0.001
	4. Pain/discomfort	0.809 ^{a)}	0.847 ^{b)}	<0.001
	5. Anxiety/depression	0.544 ^{a)}	0.500 ^{b)}	<0.001
Age group				
Configural	1. Exercise ability	0.888 ^{c)}	0.890 ^{d)}	<0.001
	2. Self-care	0.942 ^{c)}	0.937 ^{d)}	<0.001
	3. Daily activities	0.950 ^{c)}	0.958 ^{d)}	<0.001
	4. Pain/discomfort	0.809 ^{c)}	0.796 ^{d)}	<0.001
	5. Anxiety/depression	0.522 ^{c)}	0.540 ^{d)}	<0.001
2nd period				
Sex group				
Configural	1. Exercise ability	0.935 ^{a)}	0.936 ^{b)}	<0.001
	2. Self-care	0.958 ^{a)}	0.925 ^{b)}	<0.001
	3. Daily activities	0.973 ^{a)}	0.968 ^{b)}	<0.001
	4. Pain/discomfort	0.815 ^{a)}	0.825 ^{b)}	<0.001
	5. Anxiety/depression	0.531 ^{a)}	0.508 ^{b)}	<0.001
Age group				
Configural	1. Exercise ability	0.908 ^{c)}	0.921 ^{d)}	<0.001
	2. Self-care	0.920 ^{c)}	0.927 ^{d)}	<0.001
	3. Daily activities	0.963 ^{c)}	0.968 ^{d)}	<0.001
	4. Pain/discomfort	0.785 ^{c)}	0.813 ^{d)}	<0.001
	5. Anxiety/depression	0.522 ^{c)}	0.561 ^{d)}	<0.001
1st period 2nd–6th data				
2nd (2009)				
	1. Exercise ability	0.915		<0.001
	2. Self-care	0.950		<0.001
	3. Daily activities	0.960		<0.001
	4. Pain/discomfort	0.833		<0.001
	5. Anxiety/depression	0.524		<0.001
3rd (2010)				
	1. Exercise ability	0.931		<0.001
	2. Self-care	0.914		<0.001
	3. Daily activities	0.963		<0.001
	4. Pain/discomfort	0.789		<0.001
	5. Anxiety/depression	0.511		<0.001
4th (2011)				
	1. Exercise ability	0.933		<0.001
	2. Self-care	0.911		<0.001
	3. Daily activities	0.967		<0.001
	4. Pain/discomfort	0.815		<0.001
	5. Anxiety/depression	0.563		<0.001

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Table S1. Continued

Model		Factor loading	p
5th (2012)	1. Exercise ability	0.925	<0.001
	2. Self-care	0.966	<0.001
	3. Daily activities	0.989	<0.001
	4. Pain/discomfort	0.799	<0.001
	5. Anxiety/depression	0.580	<0.001
6th (2013)	1. Exercise ability	0.922	<0.001
	2. Self-care	0.949	<0.001
	3. Daily activities	0.980	<0.001
	4. Pain/discomfort	0.792	<0.001
	5. Anxiety/depression	0.561	<0.001
1st period 2nd–10th data			
2nd (2009)	1. Exercise ability	0.915	<0.001
	2. Self-care	0.950	<0.001
	3. Daily activities	0.960	<0.001
	4. Pain/discomfort	0.833	<0.001
	5. Anxiety/depression	0.524	<0.001
4th (2011)	1. Exercise ability	0.933	<0.001
	2. Self-care	0.911	<0.001
	3. Daily activities	0.967	<0.001
	4. Pain/discomfort	0.815	<0.001
	5. Anxiety/depression	0.563	<0.001
6th (2013)	1. Exercise ability	0.922	<0.001
	2. Self-care	0.949	<0.001
	3. Daily activities	0.980	<0.001
	4. Pain/discomfort	0.792	<0.001
	5. Anxiety/depression	0.561	<0.001
8th (2015)	1. Exercise ability	0.927	<0.001
	2. Self-care	0.949	<0.001
	3. daily activities	0.985	<0.001
	4. Pain/discomfort	0.814	<0.001
	5. Anxiety/depression	0.634	<0.001
10th (2017)	1. Exercise ability	0.949	<0.001
	2. Self-care	0.961	<0.001
	3. Daily activities	0.967	<0.001
	4. Pain/discomfort	0.827	<0.001
	5. Anxiety/depression	0.615	<0.001
2nd period 1st–3rd data			
1st (2019)	1. Exercise ability	0.933	<0.001
	2. Self-care	0.935	<0.001
	3. Daily activities	0.975	<0.001
	4. Pain/discomfort	0.825	<0.001
	5. Anxiety/depression	0.520	<0.001
2nd (2020)	1. Exercise ability	0.933	<0.001
	2. Self-care	0.932	<0.001
	3. Daily activities	0.981	<0.001
	4. Pain/discomfort	0.811	<0.001
	5. Anxiety/depression	0.557	<0.001
3rd (2021)	1. Exercise ability	0.945	<0.001
	2. Self-care	0.925	<0.001
	3. Daily activities	0.987	<0.001

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Table S1. Continued

Model		Factor loading					p
	4. Pain/discomfort	0.798					<0.001
	5. Anxiety/depression	0.569					<0.001
1st period 2nd–6th data							
Configural	1. Exercise ability	0.940 ^{a)}	0.932 ^{f)}	0.944 ^{g)}	0.942 ^{h)}	0.933 ⁱ⁾	<0.001
	2. Self-care	0.956 ^{a)}	0.921 ^{f)}	0.908 ^{g)}	0.965 ^{h)}	0.949 ⁱ⁾	<0.001
	3. Daily activities	0.955 ^{a)}	0.958 ^{f)}	0.964 ^{g)}	0.980 ^{h)}	0.975 ⁱ⁾	<0.001
	4. Pain/discomfort	0.810 ^{a)}	0.794 ^{f)}	0.811 ^{g)}	0.801 ^{h)}	0.786 ⁱ⁾	<0.001
	5. Anxiety/depression	0.486 ^{a)}	0.510 ^{f)}	0.535 ^{g)}	0.558 ^{h)}	0.543 ⁱ⁾	<0.001
1st period 2nd–10th data							
Configural	1. Exercise ability	0.943 ^{a)}	0.949 ^{f)}	0.941 ^{g)}	0.930 ^{h)}	0.951 ⁱ⁾	<0.001
	2. Self-care	0.957 ^{a)}	0.908 ^{f)}	0.950 ^{g)}	0.946 ^{h)}	0.964 ⁱ⁾	<0.001
	3. Daily activities	0.949 ^{a)}	0.957 ^{f)}	0.970 ^{g)}	0.980 ^{h)}	0.968 ⁱ⁾	<0.001
	4. Pain/discomfort	0.815 ^{a)}	0.815 ^{f)}	0.788 ^{g)}	0.825 ^{h)}	0.818 ⁱ⁾	<0.001
	5. Anxiety/depression	0.482 ^{a)}	0.533 ^{f)}	0.540 ^{g)}	0.637 ^{h)}	0.598 ⁱ⁾	<0.001
2nd period 1st–3rd data							
Configural	1. Exercise ability	0.937 ^{a)}	0.937 ^{f)}	0.959 ^{g)}			<0.001
	2. Self-care	0.937 ^{a)}	0.925 ^{f)}	0.925 ^{g)}			<0.001
	3. Daily activities	0.977 ^{a)}	0.981 ^{f)}	0.979 ^{g)}			<0.001
	4. Pain/discomfort	0.814 ^{a)}	0.816 ^{f)}	0.796 ^{g)}			<0.001
	5. Anxiety/depression	0.505 ^{a)}	0.537 ^{f)}	0.535 ^{g)}			<0.001

We have summarized the standardized factor loadings for each key research model based on the tables presenting the analysis results. regarding the measurement invariance models, we primarily presented the factor loadings of the configural model due to space constraints.

^{a)}Male; ^{b)}female; ^{c)}under 65 years; ^{d)}older 65 years; ^{e)}1 wave; ^{f)}2 wave; ^{g)}3 wave; ^{h)}4wave; ⁱ⁾5 wave.