

Supplementary Table 6. Structural and measurement results of the pathway analyses model

Path	Coefficient	Standard errors	Critical ratio	Probability
H001 : Age_CCI ← monthly house hold income	-0.005	0.0015	-0.325	0.745
H002 : Ang_MI ← monthly house hold income income	-0.001	0.005	-0.280	0.779
H003 : Stroke ← monthly house hold income	0.002	0.003	0.580	0.562
H004 : ILD ← monthly house hold income	-0.007	0.003	-2.508	0.012**
H005 : Pneumonia ← monthly house hold income	-0.002	0.003	-0.624	0.533
H006 : Tuberculosis ← monthly house hold income	-0.004	0.007	-0.564	0.573
H007 : Asthma ← monthly house hold income	-0.004	0.005	-0.811	0.417
H008 : Hepatitis ← monthly house hold income	0.003	0.005	0.502	0.616
H009 : Peptic ulcer ← monthly house hold income	-0.016	0.007	-2.197	0.028**
H010 : Diabetes ← monthly house hold income	-0.019	0.009	-2.151	0.031**
H011 : Malignancy ← monthly house hold income	0.007	0.009	0.793	0.428
H012 : Depression ← monthly house hold income	0.004	0.004	1.072	0.284
H013 : FRAC ← monthly house hold income	-0.030	0.012	-2.468	0.014**
H014 : Osteoporosis ← monthly house hold income	-0.024	0.008	-2.912	0.004***
H015 : Alcohol ← monthly house hold income	-0.010	0.015	-0.721	0.471
H016 : Smoking ← monthly house hold income	-0.003	0.012	-0.228	0.820
H017 : Exercise ← monthly house hold income	-0.002	0.016	-0.106	0.915
H018 : Hospitalization ← monthly house hold income	-0.048	0.014	-3.400	0.001***
H019 : Check-up ← monthly house hold income	0.002	0.006	0.261	0.794
H020 : Medication compliance ← monthly house hold income	-0.018	0.014	-1.244	0.214
H021 : Alternative medicine ← monthly house hold income	-0.009	0.015	-0.625	0.532
H022 : GLUCO ← monthly house hold income	0.000	0.010	-0.038	0.970
H023 : CHOND ← monthly house hold income	0.004	0.002	1.761	0.078*
H024 : OMEGA ← monthly house hold income	0.022	0.012	1.867	0.062*
H025 : VIT ← monthly house hold income	0.032	0.013	2.488	0.013**
H026 : CA ← monthly house hold income	0.026	0.008	3.140	0.002***
H027 : FE ← monthly house hold income	0.010	0.005	1.998	0.046*
H028 : GIN ← monthly house hold income	0.054	0.010	5.325	0.000***
H029 : Age_CCI ← Education	0.005	0.014	0.348	0.728
H030 : Ang_MI ← Education	-0.005	0.005	-1.181	0.238
H031 : Stroke ← Education	-0.008	0.003	-2.726	0.006***
H032 : ILD ← Education	0.001	0.003	0.270	0.797
H033 : Pneumonia ← Education	-0.001	0.003	-0.249	0.803
H034 : Tuberculosis ← Education	0.004	0.007	0.605	0.545
H035 : Asthma ← Education	-0.008	0.005	-1.770	0.077*
H036 : Hepatitis ← Education	0.007	0.005	1.443	0.149
H037 : Peptic ulcer ← Education	0.006	0.007	0.901	0.368
H038 : Diabetes ← Education	-0.065	0.008	-7.660	0.000***
H039 : Malignancy ← Education	-0.004	0.008	-0.438	0.661
H040 : Depression ← Education	0.001	0.004	0.247	0.805
H041 : FRAC ← Education	-0.063	0.012	-5.456	0.000***

Supplementary Table 6. Continued

Path	Coefficient	Standard errors	Critical ratio	Probability
H042 : Osteoporosis ← Education	-0.071	0.008	-9.081	0.000***
H043 : Alcohol ← Education	0.009	0.014	0.645	0.519
H044 : Exercise ← Education	0.002	0.015	0.137	0.891
H045 : Hospitalization ← Education	-0.070	0.014	-5.138	0.000***
H046 : Check-up ← Education	-0.014	0.006	-2.275	0.023**
H047 : Medication compliance ← Education	-0.052	0.014	-3.824	0.000***
H048 : Alternative medicine ← Education	0.024	0.014	1.692	0.091*
H049 : GLUCO ← Education	0.010	0.009	1.055	0.292
H050 : CHOND ← Comorbidity	0.004	0.002	1.836	0.066*
H051 : OMEGA ← Education	0.038	0.011	3.319	0.001***
H052 : VIT ← Education	0.109	0.013	8.644	0.000***
H053 : FE ← Education	0.018	0.005	3.725	0.000***
H054 : Age_CCI ← Health insurance	0.003	0.030	0.117	0.907
H055 : Ang_MI ← Health insurance	-0.002	0.010	-0.207	0.836
H056 : Stroke ← Health insurance	-0.015	0.006	-2.323	0.020**
H057 : ILD ← Health insurance	0.004	0.006	0.743	0.457
H058 : Pneumonia ← Health insurance	0.013	0.007	1.990	0.047**
H059 : Tuberculosis ← Health insurance	0.000	0.014	-0.027	0.978
H060 : Asthma ← Health insurance	-0.021	0.010	-2.131	0.033**
H061 : Hepatitis ← Health insurance	-0.018	0.010	-1.754	0.079*
H062 : Peptic ulcer ← Health insurance	-0.015	0.015	-1.011	0.312
H063 : Diabetes ← Health insurance	-0.013	0.018	-0.745	0.456
H064 : Malignancy ← Health insurance	-0.008	0.018	-0.459	0.646
H065 : Depression ← Health insurance	-0.041	0.009	-4.779	0.000***
H066 : FRAC ← Health insurance	-0.054	0.025	-2.208	0.027**
H067 : Osteoporosis ← Health insurance	-0.023	0.017	-1.368	0.173
H068 : Alcohol ← Health insurance	-0.008	0.030	-0.278	0.781
H069 : Smoking ← Health insurance	-0.003	0.024	-0.107	0.915
H070 : Exercise ← Health insurance	-0.015	0.033	-0.462	0.644
H071 : Hospitalization ← Health insurance	-0.048	0.029	-1.656	0.098*
H072 : Check-up ← Health insurance	-0.013	0.013	-0.986	0.324
H073 : Medication compliance ← Health insurance	-0.074	0.029	-2.549	0.011**
H074 : Alternative medicine ← Health insurance	0.032	0.031	1.027	0.305
H075 : GLUCO ← Health insurance	0.015	0.020	0.749	0.454
H076 : CHOND ← Health insurance	-0.006	0.005	-1.341	0.180
H077 : OMEGA ← Health insurance	0.023	0.024	0.951	0.341
H078 : VIT ← Health insurance	0.018	0.027	0.656	0.512
H079 : CA ← Health insurance	0.014	0.018	0.769	0.442
H080 : FE ← Health insurance	-0.005	0.010	-0.469	0.639
H081 : GIN ← Health insurance	0.072	0.023	3.174	0.002***
H082 : Age_CCI ← Marital status	0.004	0.016	0.240	0.810

Supplementary Table 6. Continued

Path	Coefficient	Standard errors	Critical ratio	Probability
H083 : Ang_MI ← Marital status	-0.003	0.005	-0.543	0.587
H084 : Stroke ← Marital status	-0.005	0.003	-1.434	0.152
H085 : ILD ← Marital status	0.000	0.003	-0.082	0.935
H086 : Pneumonia ← Marital status	-0.003	0.003	-0.914	0.361
H087 : Tuberculosis ← Marital status	0.002	0.008	0.229	0.819
H088 : Asthma ← Marital status	-0.001	0.005	-0.278	0.781
H089 : Hepatitis ← Marital status	-0.004	0.006	-0.772	0.440
H090 : Peptic ulcer ← Marital status	-0.002	0.008	-0.195	0.845
H091 : Diabetes ← Marital status	-0.003	0.010	-0.350	0.727
H092 : Malignancy ← Marital status	0.014	0.010	1.477	0.148
H093 : Depression ← Marital status	-0.007	0.005	-1.488	0.137
H094 : FRAC ← Marital status	-0.045	0.013	-3.434	0.001***
H095 : Osteoporosis ← Marital status	-0.018	0.009	-2.024	0.043**
H096 : Alcohol ← Marital status	0.027	0.016	1.669	0.095*
H097 : Smoking ← Marital status	0.013	0.013	0.982	0.326
H098 : Exercise ← Marital status	0.004	0.018	0.199	0.842
H099 : Hospitalization ← Marital status	-0.018	0.016	-1.168	0.243
H100 : Check-up ← Marital status	0.011	0.007	1.626	0.104
H101 : Medication compliance ← Marital status	0.029	0.016	1.891	0.059*
H102 : Alternative medicine ← Marital status	0.011	0.016	0.677	0.499
H103 : GLICO ← Marital status	0.015	0.010	1.435	0.151
H104 : CHOND ← Marital status	0.001	0.002	0.379	0.705
H105 : OMEGA ← Marital status	0.007	0.013	0.554	0.580
H106 : VIT ← Marital status	0.006	0.014	0.416	0.678
H107 : CA ← Marital status	-0.009	0.010	-0.935	0.350
H108 : FE ← Marital status	0.005	0.005	0.953	0.340
H109 : GIN ← Marital status	0.011	0.012	0.916	0.360
H110 : HF ← Monthly house hold income	-0.429	0.013	-31.974	0.000***
H111 : HTN ← Monthly house hold income	-0.117	0.013	-9.306	0.000***
H112 : HF ← Marital status	0.016	0.016	1.010	0.312
H113 : HF ← Health insurance	-0.035	0.030	-1.161	0.246
H114 : HTN ← Health insurance	0.020	0.028	0.699	0.484
H115 : HTN ← Marital status	-0.034	0.015	-2.226	0.026**
H116 : Smoking ← Education	-0.018	0.011	-1.628	0.103
H117 : Biologics ← Age_CCI	-0.015	0.004	-3.653	0.000***
H118 : Biologics ← HF	-0.059	0.004	-14.607	0.000***
H119 : Biologics ← HTN	0.001	0.004	0.181	0.857
H120 : Biologics ← ANG_MI	-0.010	0.013	-0.799	0.424
H121 : Biologics ← Stroke	0.043	0.019	2.204	0.028**
H122 : Biologics ← ILD	0.022	0.020	1.084	0.278
H123 : Biologics ← Pneumonia	0.017	0.019	0.906	0.365

Supplementary Table 6. Continued

Path	Coefficient	Standard errors	Critical ratio	Probability
H124 : Biologics ← Tuberculosis	0.008	0.009	0.945	0.345
H125 : Biologics ← Asthma	0.001	0.013	0.082	0.936
H126 : Biologics ← Hepatitis	0.008	0.012	0.682	0.495
H127 : Biologics ← Peptic ulcer	0.007	0.008	0.874	0.382
H128 : Biologics ← Diabetes	-0.003	0.007	-0.456	0.649
H129 : Biologics ← Malignancy	-0.035	0.007	-5.116	0.000***
H130 : Biologics ← Depression	-0.015	0.014	-1.049	0.294
H131 : Biologics ← FRAC	-0.010	0.005	-1.945	0.052*
H132 : Biologics ← Osteoporosis	0.001	0.007	0.144	0.886
H133 : Biologics ← Alcohol	-0.024	0.004	-5.937	0.000***
H134 : Biologics ← Smoking	-0.017	0.005	-3.327	0.001***
H135 : Biologics ← Exercise	-0.006	0.004	-1.615	0.106
H136 : Biologics ← Hospitalization	0.032	0.004	7.615	0.000***
H137 : Biologics ← Check-up	-0.005	0.010	-0.568	0.570
H138 : Biologics ← Medication compliance	0.011	0.004	2.656	0.008***
H139 : Biologics ← Alternative medicine	-0.011	0.004	-2.623	0.009***
H140 : Biologics ← GLUCO	0.006	0.006	0.967	0.334
H141 : Biologics ← CHOND	0.042	0.027	1.550	0.121
H142 : Biologics ← OMEGA	0.004	0.005	0.847	0.397
H143 : Biologics ← VIT	0.009	0.005	2.004	0.045**
H144 : Biologics ← CA	-0.009	0.007	-1.274	0.203
H145 : Biologics ← FE	0.004	0.012	0.304	0.761
H146 : Biologics ← GIN	0.005	0.005	0.943	0.346
H147 : Biologics ← DIS_dur	0.001	0.000	4.707	0.000***
H148 : Biologics ← DAS 28	0.006	0.001	4.549	0.000***
H149 : Biologics ← EQ-5D	0.005	0.010	0.523	0.601
H150 : Biologics ← HAQ	0.015	0.004	3.523	0.000***
H151 : Biologics ← EQ_Depression	0.000	0.000	-0.466	0.641
H152 : Biologics ← PHYVAS	0.000	0.000	-2.238	0.025**
H153 : Biologics ← Age	-0.001	0.000	-3.587	0.000***
H154 : Biologics ← Monthly house hold income	0.012	0.005	2.616	0.009***
H155 : Biologics ← Education	0.021	0.006	3.598	0.000***
H156 : Biologics ← Health insurance	-0.005	0.009	-0.505	0.613
H157 : Biologics ← Marital status	0.003	0.005	0.553	0.580

Age_CCI, age adjusted Charlson comorbidity index; Ang_MI, angina and myocardial infarction; CA, calcium and calcium supplements; CHOND, chondroitin; FE, Iron Supplements; FRAC, bone fracture; GIN, ginseng; GLUCO, glucosamin; HTN hypertension; ILD, interstitial lung disease; OMEGA, omega-3; VIT, vitamin.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.