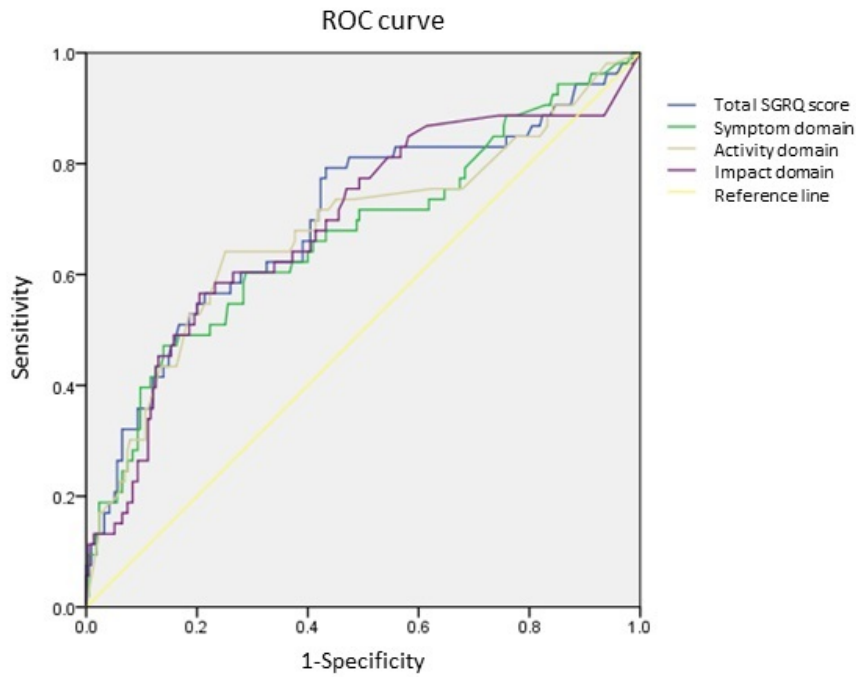# Supplementary material

Ethics statement

The names of ethics committees are as follows: Gacheon University Gil Medical Center, Hallym University Kangnam Sacred Heart Hospital, Gangnam Severance Hospital, Kyung Hee University Hospital at Gangdong, Hallym University Kang-dong Sacred Heart Hospital, Kangbuk Samsung Hospital, Kangwon National University Hospital, Konkuk University Hospital, Konkuk University Chungju Hospital, Kyungpook National University Hospital, Gyeongsang National University Hospital, Korea University Guro Hospital, Korea University Anam Hospital, Seoul Eulji Hospital, Dongguk University Gyeongju Hospital, Dongguk University Ilsan Hospital, Keimyung University Dongsan Medical Center, Dong-A University Hospital, Hallym University Dongtan Sacred Heart Hospital, Pusan National University Hospital, Inje University Busan Paik Hospital, The Catholic University of Korea Bucheon St. Mary's Hospital, Soonchunhyang University Hospital Bucheon, Seoul National University Bundang Hospital, Bundang CHA Hospital, Seoul Metropolitan Government Seoul National University Boramae Medical Center, Samsung Medical Center, Soonchunhyang University Hospital Seoul, The Catholic University of Korea Seoul St. Mary's Hospital, The Catholic University of Korea St. Paul's Hospital, The Catholic University of Korea St. Vincent's Hospital, Severance Hospital, Asan Medical Center, Ajou University Hospital, The Catholic University of Korea Yeouido St. Mary's Hospital, The Catholic University of Korea Uijeongbu St. Mary's Hospital, Yeungnam University Medical Center, Ulsan University Hospital, Wonkwang University Sanbon Hospital, Wonju Severance Christian Hospital, Ewha Womans University Mokding Hospital, Incheon St. Mary's Hospital, Inha University Hospital, Chonnam National University Hospital, Chonbuk National University Hospital, Jeju National University Hospital, Soonchunhyang University Hospital Cheonan, Hallym University Chuncheon Sacred Heart Hospital, Hallym University Sacred Heart Hospital, and Hanyang University Guri Hospital.
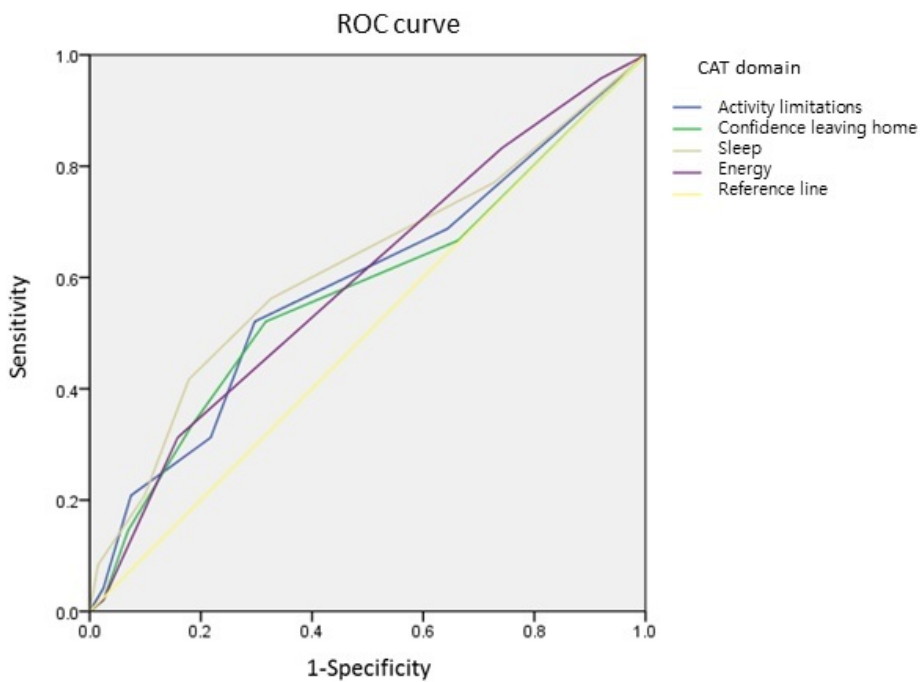
Supplementary Table 1. Logistic regression analysis for factors predictive of probable depression (BDI-II ≥ 17) (CAT scores included)

Characteristics	Univariate			Multivariate		
	OR	95% CI	P	OR	95% CI	P
Age*	0.849	0.945-1.022	0.907	0.970	0.921-1.023	0.263
Female Sex	3.443	1.529-7.754	0.003	3.375	1.102-10.334	0.033
FEV1 (% predicted)*	0.994	0.976-1.012	0.514	-	-	-
CAT score*	1.037	0.996-1.080	0.078	-	-	-
CAT score domains*						
Activity limitation at home	1.276	1.032-1.579	0.025	1.095	0.676-1.773	0.712
Confidence leaving home	1.252	1.002-1.565	0.048	0.868	0.545-1.382	0.550
Sleep	1.411	1.133-1.756	0.002	1.348	0.975-1.864	0.071
Energy	1.321	1.008-1.733	0.044	1.019	0.665-1.561	0.931
BMI*	0.883	0.803-0.970	0.009	0.818	0.716-0.933	0.003
6MWD*	0.993	0.991-0.996	<0.001	0.994	0.991-0.997	<0.001
Education level (≤middle school/high school and college graduate)	3.263	1.626-6.545	0.001	1.648	0.662-4.103	0.283
Smoking experience (current smoker/non or ex-smoker)	1.566	0.797-3.078	0.193	-	-	-

Abbreviations: 6MWD: 6-minute walk distance; BDI-II: Beck Depression Inventory-II; BMI, body mass index; CAT: COPD assessment test; COPD: chronic obstructive pulmonary disease; FEV1: forced expiratory volume in 1 second.

Supplementary Figure 1 A receiver operating characteristic curve analysis graph comparing predictibility of baseline total SGRQ-C score and individual component scores (symptoms, activity, and impact) for depression, defined as a BDI-II score ≥ 17.

Supplementary Figure 2 A receiver operating characteristic curve analysis graph comparing predictibility of baseline total CAT score, and individual component scores (activity limitations at home, confidence leaving home, sleep, and energy) for depression, defined as a BDI-II score ≥ 17.