S.N.W. VORRINK, H.S.M. KORT, T. TROOSTERS, J-W.J. LAMMERS. ***Self-reported determinants of physical activity of people with COPD (Chronic Obstructive Pulmonary Disease) and the effects of stimulation with the use of a smartphone application.*** *Gerontechnology 2016;15(suppl):167s*; doi:10.4017/gt.2016.15.s.659.00 **Background** Chronic Obstructive Pulmonary Disease (COPD) is a disabling airway disease with variable extrapulmonary effects that may contribute to disease severity in individual patients[1]. Patients with COPD demonstrate reduced levels of spontaneous physical activity (PA) compared with healthy controls[2].This results in a higher risk of hospital admission and a shorter survival[3]. **Purpose** The importance of PA in COPD is clear[4]. However, increasing PA in this patient group is a major challenge. This presentation will show how patients feel their PA engagement is influenced and what the effects are of a smartphone application aimed to stimulate PA. **Method** To address the first purpose of the presentation a set of 14 questions was developed using the website www.surveymonkey.com that was online from 23 October 2009 to 12 January 2010. Analyses consisted of frequency distributions, the chi-square test for independence, and one-way analysis of variance. For the second aim a randomized controlled trial (RCT) was performed in 32 physiotherapy practices in the Netherlands. COPD patients were randomized into an intervention (I) or usual care group (U). The intervention consisted of a smartphone application for the patients and a monitoring website for the physiotherapists. Measurements were performed at 0, 3, 6 and 12 months. PA, exercise capacity, lung function, health-related quality of life (HRQoL), and body mass index (BMI) were assessed. **Results & Discussion** 170 patients with COPD started and 116 completed the set of questions (male/female: 60/110). Average age was 60±11 years. 65% had received exercise prescriptions/advice; however, of these only 29% were specific. 69% responded that they are in adherence. Health status, weather conditions and state of mind are important factors that patients with COPD feel influence their daily physical activity engagement[5]. 157 patients started (male/female: 88/69) and 121 completed (male/female: 68/53) the RCT. There were no significant positive effects of the intervention on PA (0 months: I:5824 U:5717; 12 months: I:4819; U:4950 steps/weekday), exercise capacity, HRQoL or BMI. There was a significant decrease over time in PA ($p<0.001$), lung function ($p<0.001$), and mastery ($p=0.017$), but not in exercise capacity. Although exercise capacity did not deteriorate, our smartphone-based eHealth intervention did not improve or maintain PA in patients with COPD after a period of PR.

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