

eHealth self-management support after high-altitude climate treatment (HACT) of severe asthma: a randomised controlled trial.

BACKGROUND

In severe asthma, it has been shown that HACT improves asthma control. However, asthma symptoms and limitations may worsen after finishing HACT and returning to sea level. We assessed the effectiveness of patient tailored eHealth self-management support in addition to usual care after discharge from HACT.

METHODS

- a pragmatic RCT with 1-year follow-up
- asthmatic adults from a high-altitude asthma centre in Davos, Switzerland
- randomisation at the end of a 12-week multi-disciplinary rehabilitation program at high altitude:
 - eHealth self-management support in addition to usual care
 - usual care only after discharge
- endpoints:
 - asthma-related quality of life (AQLQ, the higher the better)
 - asthma control (ACQ, the lower the better) (MCID 0.5 points)
 - user engagement (low: < 12 logins/year; high: >= 12 logins/year)

PatientCoach web-application

Self-management support modules could be customized by the healthcare professionals, allowing to tailor the programme to the specific needs of the patient. These modules included

- a written action plan with patients health goals
- asthma control questionnaire
- individual question
- pdf's with education provided by the asthma centre
- helpdesk
- PIKO-1 meter to measure FEV₁
- actometer (FitBit)

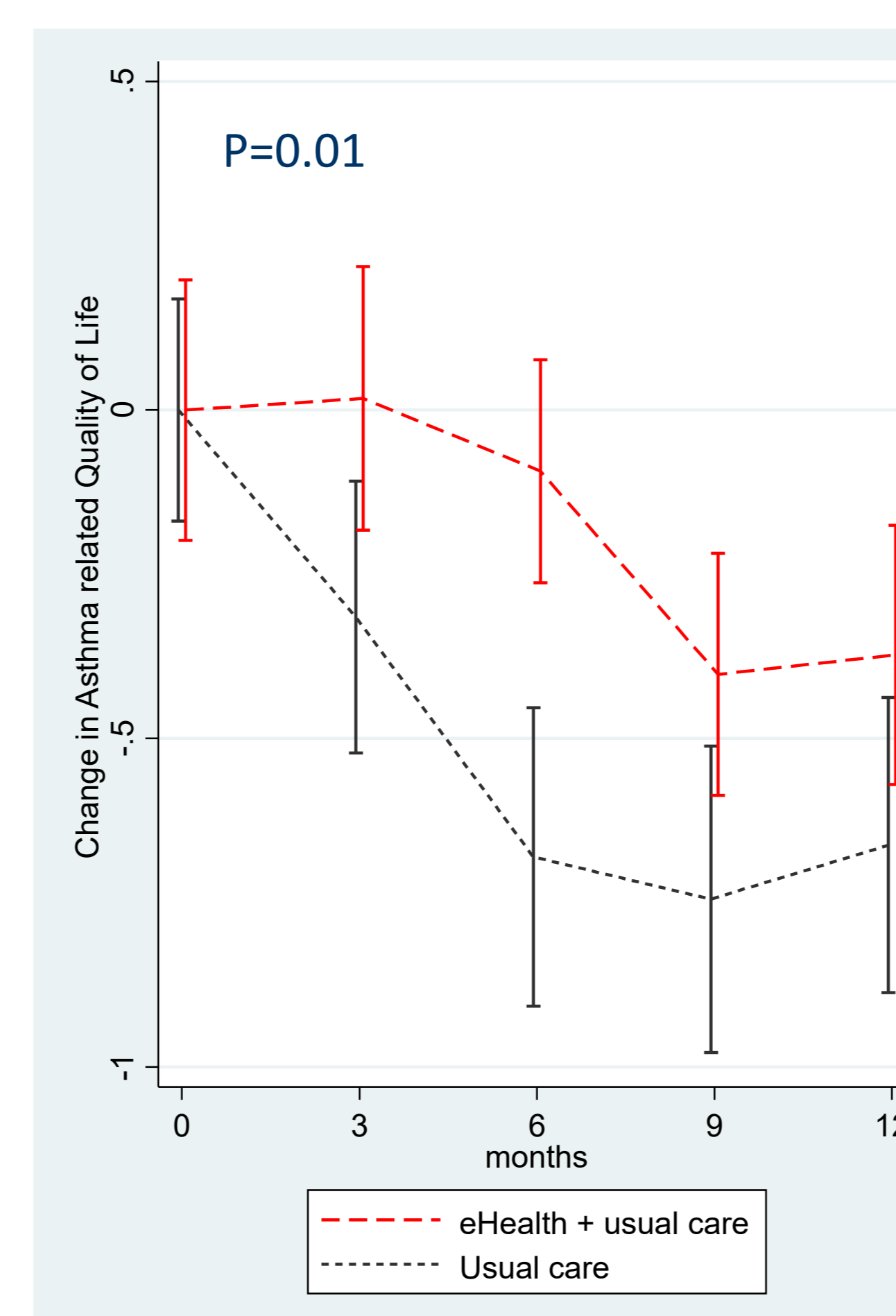


As this was a pragmatic trial, participants were free to use the web-application as often as they liked

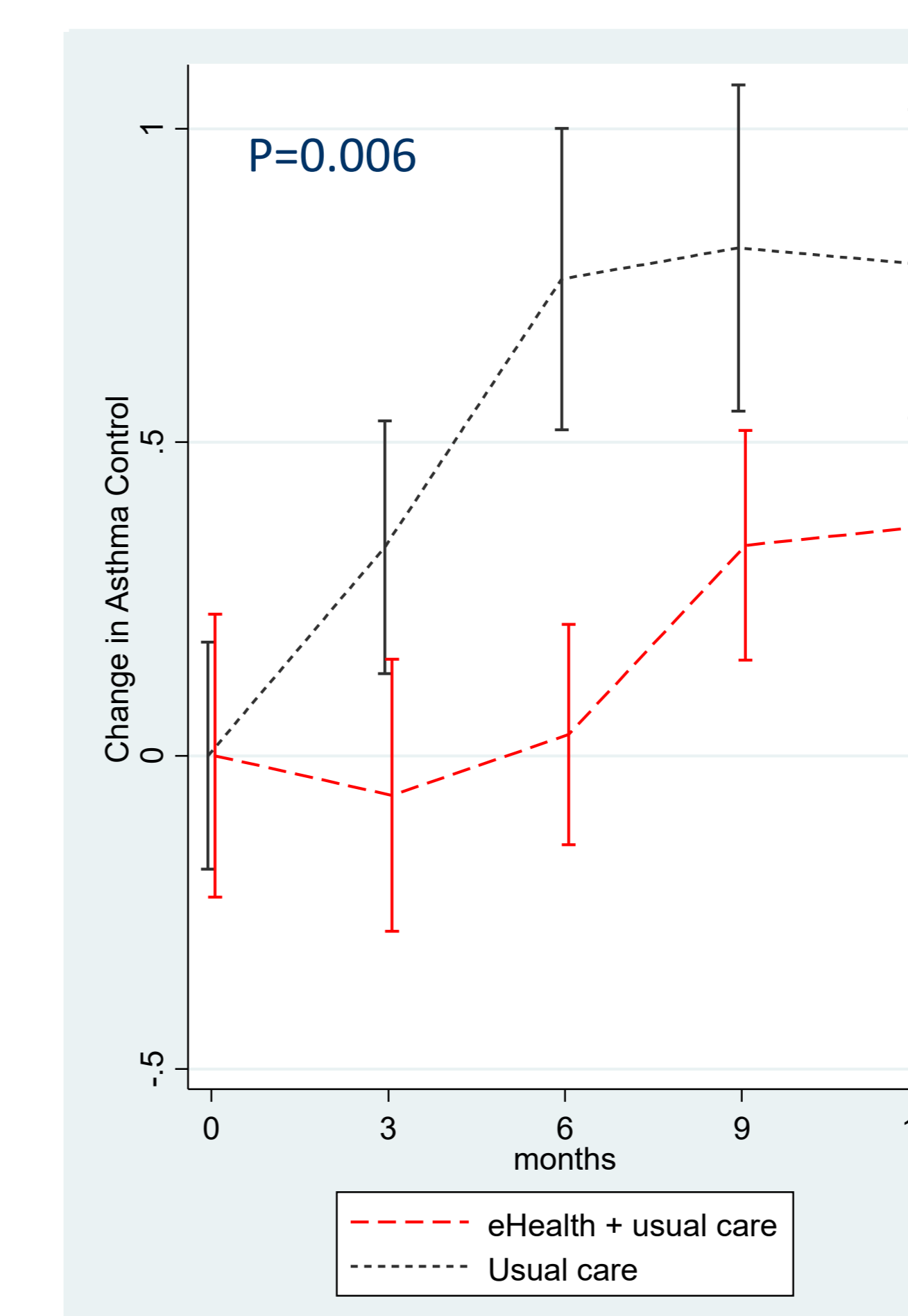
RESULTS

- 92 patients recruited by the staff of the Dutch Asthma Centre Davos.
- 30 patients dropped out since they did not submit any data
- 62 participants
- Usual care: N=29; eHealth + usual care: N=33 patients.

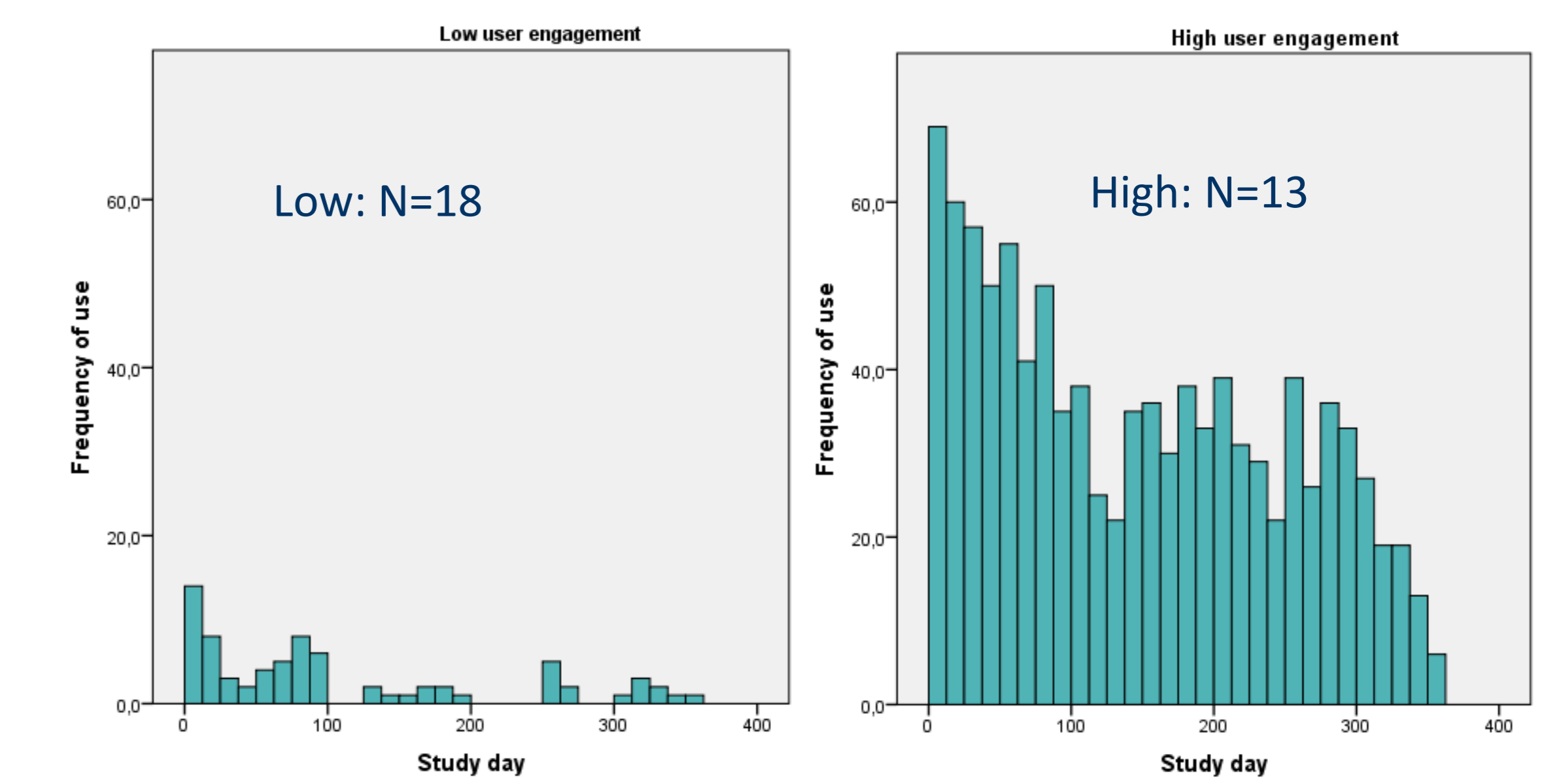
Asthma related quality of life



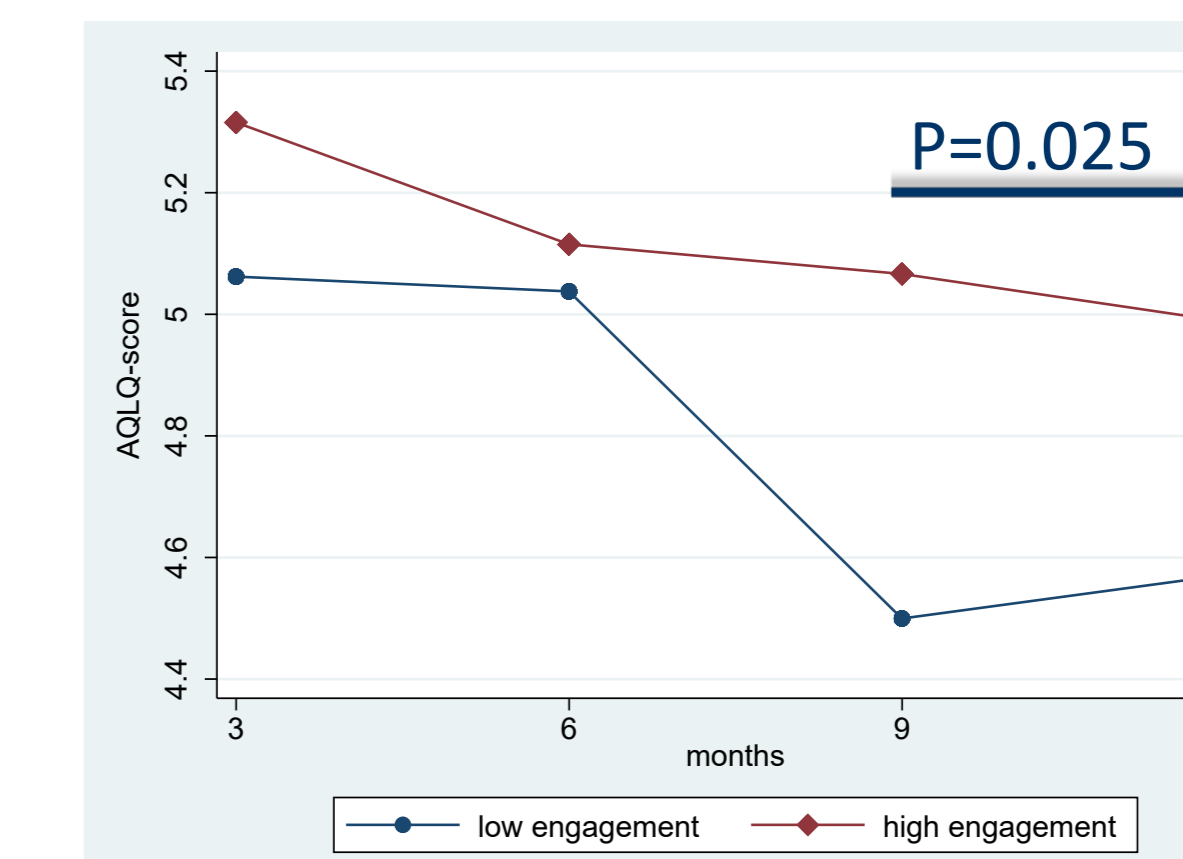
Asthma control



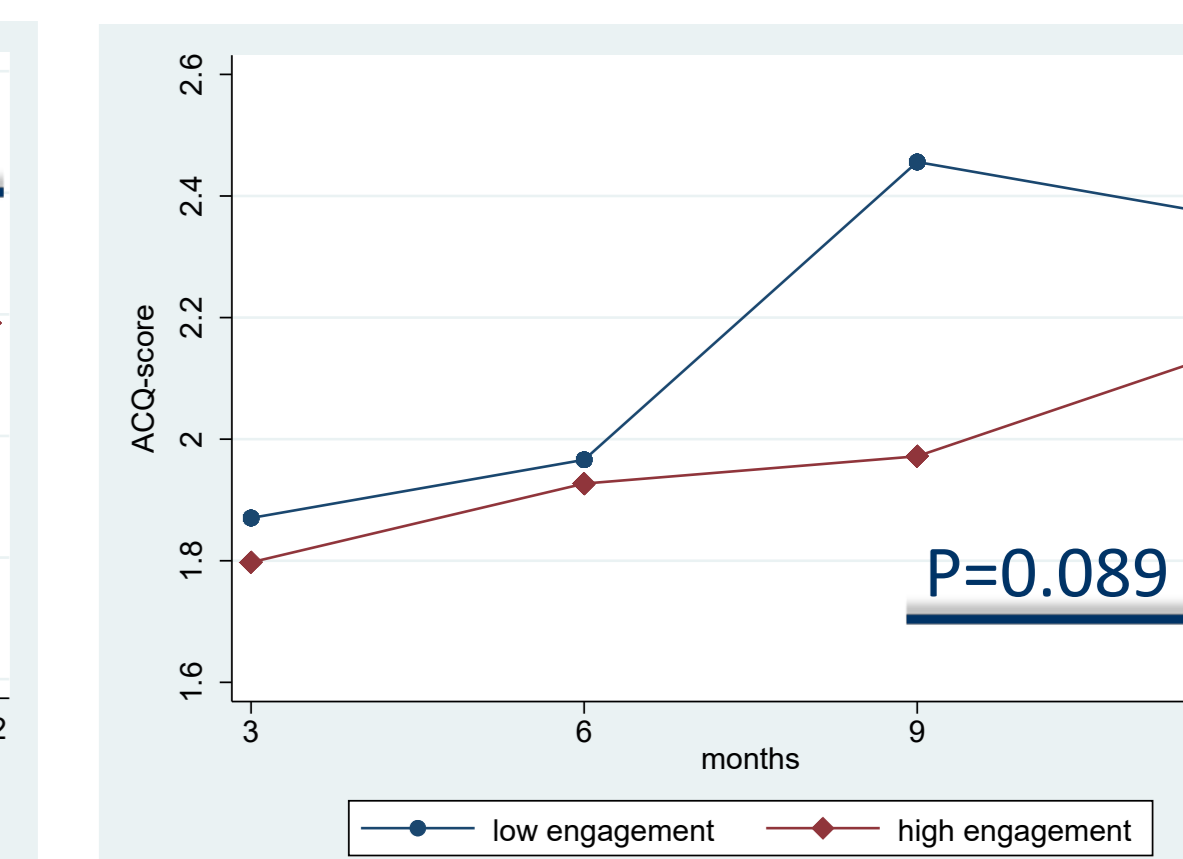
eHealth user engagement



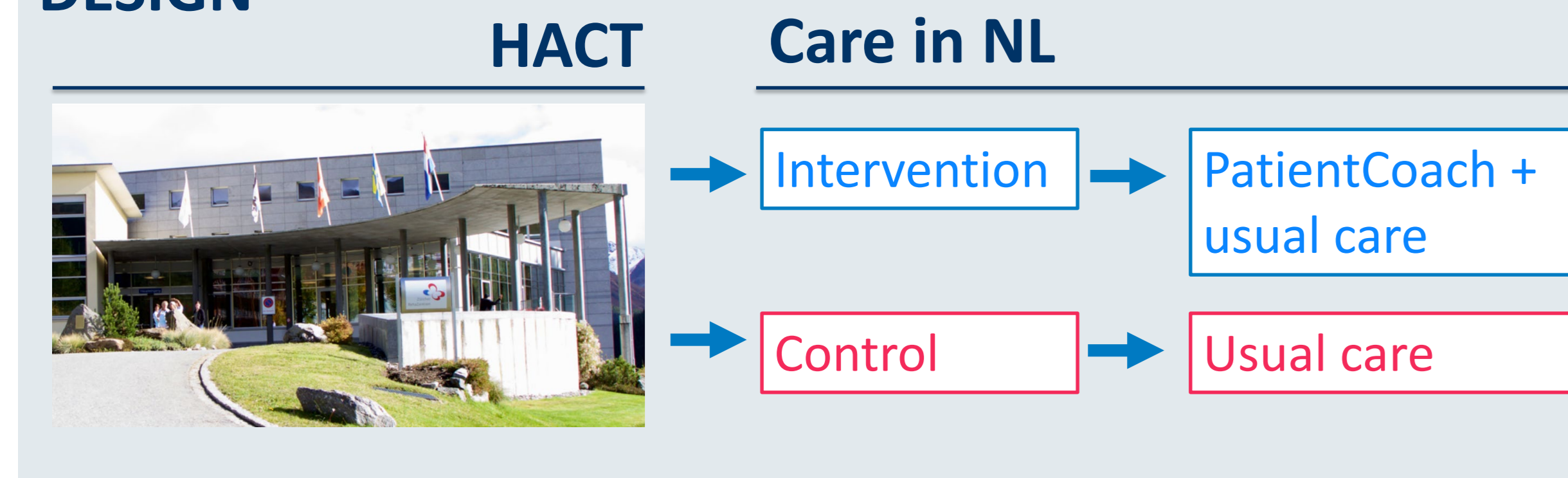
Asthma related quality of life



Asthma control



DESIGN



Baseline characteristics			
	Usual care (n=29)	eHealth + usual care (n=33)	p-value
Age, yr	44.0 (2.4)	46.7 (2.3)	0.47
Male (%)	9 (31%)	8 (24%)	0.56
AQLQ	5.6 (0.2)	5.2 (0.2)	0.11
ACQ6	1.5 (0.2)	1.9 (0.2)	0.17

CONCLUSIONS

- eHealth self-management support is associated with a smaller decline in quality of life and asthma control, especially in patients with lower asthma control after completing the high-altitude climate treatment
- Support of eHealth self-management support in adults with severe asthma seems feasible and effective to maintain quality of life and asthma control
- User engagement is an important success factor

IMPLICATION

- Implementation of eHealth self-management support is now warranted in order to maintain the level of clinical control in patients with severe asthma after completing pulmonary rehabilitation in a high altitude asthma clinic