Maastricht University

Health status assessment in COPD

Citation for published version (APA):

Smid, D. E. (2018). *Health status assessment in COPD*. [Doctoral Thesis, Maastricht University]. Datawyse / Universitaire Pers Maastricht. https://doi.org/10.26481/dis.20180112ds

Document status and date:
Published: 01/01/2018

DOI:
10.26481/dis.20180112ds

Document Version:
Publisher's PDF, also known as Version of record

Please check the document version of this publication:

• A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
• The final author version and the galley proof are versions of the publication after peer review.
• The final published version features the final layout of the paper including the volume, issue and page numbers.

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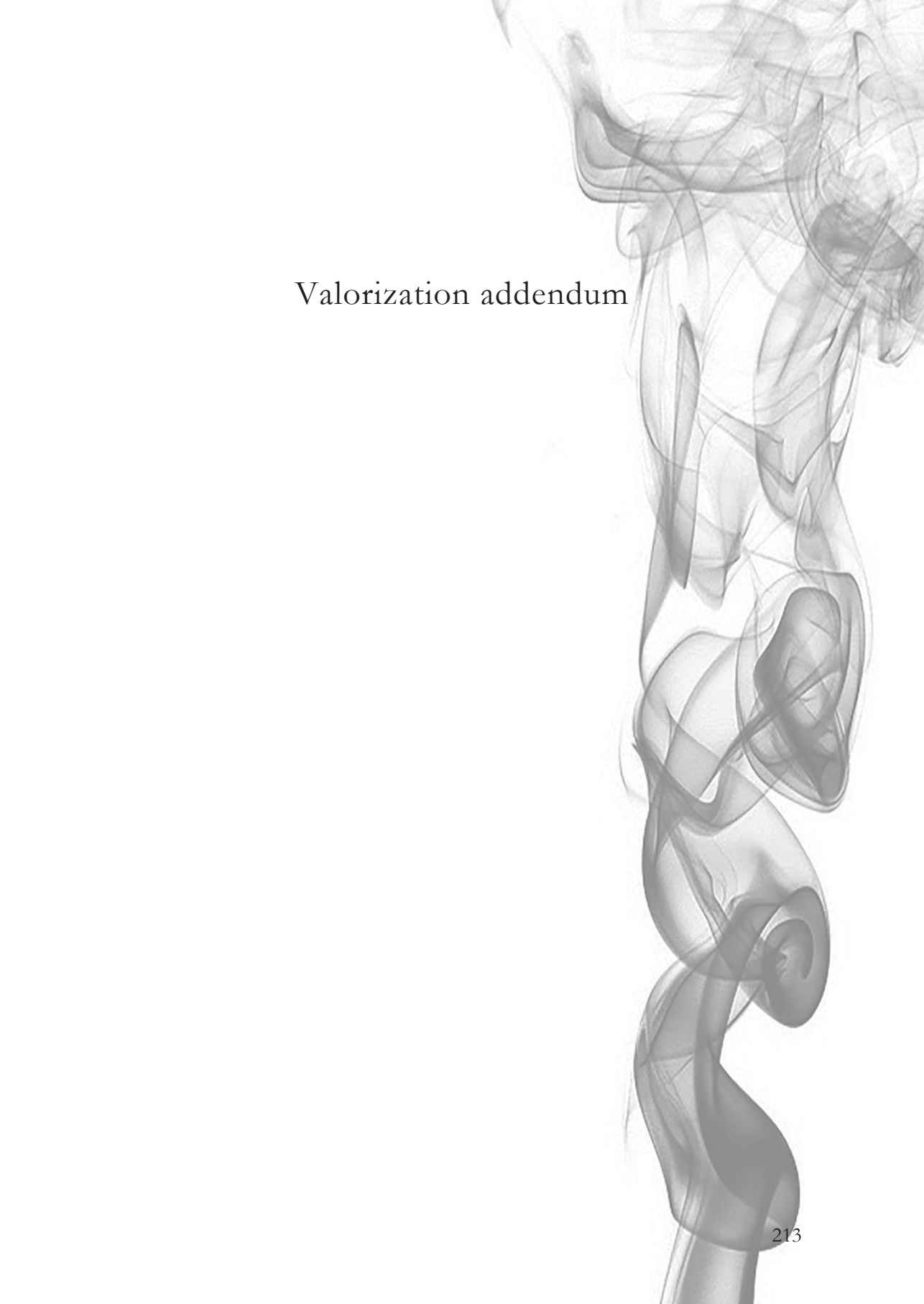

This thesis describes multiple studies with the aim to examine current health status assessment in patients with COPD and ultimately also to give advice on more adequate health status assessment. The results will be valorized in the current chapter, in which valorization means "the process of creating value from knowledge, by making knowledge suitable and/or available for social (and/or economic) use and by making knowledge suitable for translation into competitive products, services, processes and new commercial activities".

RELEVANCE

Care for patients with COPD can only be optimally provided when being aware of the systemic effects of COPD. This thesis showed that an impaired health status is present is all healthcare settings, while the current management of COPD is not very effective and suboptimal. Therefore, the recommendation to focus on detailed characterization of patients with COPD is critical to be able to provide targeted care. Previous research showed that interaction between patients and professionals, and proactive care improve the diagnostics of (an impaired) health status in patients with COPD. The CAT is developed to improve the communication between the patient and clinician. So, for both the clinician as the patient, the CAT is an easy tool to enhance awareness of symptoms. Though, treatment can vary when applying various questionnaires. Different threshold values for symptom questionnaires can result in misclassification and, in turn, different treatment recommendations. Therefore, this thesis examined the best fitting GOLD cut-points suggested to provide consistency and transparency in health care for patients with COPD. Besides the application of proactive care and consistent cut-points, evaluation of care is critical. It is necessary to determine the treatment efficacy and examine if an intervention has sufficient responsiveness, otherwise treatment might erroneously be judged effective.

TARGET GROUPS

Primarily the current results are important for health care providers, as professionals should be aware of disease burden, possible consequences and most suitable treatment options for patients with COPD. Also, patients with COPD should be aware of the importance to communicate with their clinician and have a say on which treatment they prefer to receive. Furthermore, guideline committees are a target group, as they should be informed about the current findings and could take these results into consideration for future recommendations.

Healthcare providers

This thesis emphasizes the need for detailed characterization of individuals with COPD and for a more tailored treatment, independent of the healthcare setting. In order to develop and evaluate effective treatment for patients with COPD, individualized assessment is required. A better understanding of the presence and possible consequences of an impaired health status is important to recognize and respond to these symptoms. Therefore, healthcare professionals need to regularly assess symptoms in patients with COPD. Following, awareness of an impaired health status will make them able to inform, refer and advise a patient with COPD about possible treatment options. When clinicians from primary, secondary and tertiary care work together, they will be able to efficiently provide individualized care based on the patients' needs. The present thesis also gives important insights for healthcare providers. They should be aware of the fact that the choice of symptom measure influences classification, and, in turn, also specific treatment recommendation in patients with COPD.

Patients with COPD

The application of the new cut-points would re-classify about one-third of the patients with COPD. Because possible changes in COPD guidelines impact individual disease management, patients should be more involved in their own health status assessment. They need to be aware of the physical, mental and social impact of COPD. Previous research showed that patients are more likely to change their behaviour, when they have more knowledge about the disease and are more self-aware. Self-evaluation (tracking whether relevant changes have occurred in their disease symptoms) will increase the possibility to receive proper treatment and maintain independency, autonomy and adaptability. Patients should see the importance of communicating about their symptoms to the clinician.

Guideline committees

Previous research showed that the mMRC is a strong and independent predictor of all-cause mortality. Furthermore, former studies implied that a CAT cut point of >18 points more adequately predicts all-cause mortality. It also comprehensively categorizes patients with COPD according to the GOLD classification, which is in agreement with the findings of the current thesis. Guidelines committees may need to consider the use of a mMRC dyspnea grade two or higher, a CAT total score of 18 points or higher, a CCQ total score of 1.9 points or higher, or a total SGRQ score of 46.0 points or higher to classify patients with COPD as symptomatic. These cut-points enable healthcare professionals to classify the largest proportion of patients into the same GOLD quadrant regardless of their choice of symptom measure.

ACTIVITIES AND/OR PRODUCTS

Dissemination of the results is an important part of the valorization of a thesis. The results have led to multiple original articles in leading scientific national and international journals. The first findings of the current study were presented in 2014 during the Netherlands Respiratory Society (NRS) 6th Young Investigator Symposium (Amsterdam, Netherlands) with the abstract entitled "Functional status, mood status and health status in healthy individuals and patients with COPD treated in primary care, secondary care or tertiary care setting". During the European Respiratory Society (ERS) congress in 2015, the abstract entitled "Health status in patients with COPD and care provided in various healthcare settings" was demonstrated with a poster presentation (Amsterdam, Netherlands). Furthermore, results have been presented during courses and workshops organized by CIRO and other institutes.

Besides the above-mentioned dissemination of the current thesis, it is critical that future research is able to emerge from this perspective and show additional results in contrast or complementary to these findings. Guideline committees can only make influencing decisions when multiple studies show consequences of the current cut-points and verify new cut points. The same counts for healthcare providers to be able to apply the suggested recommendations for patients with COPD. The current thesis will be made available to a wider public.

INNOVATION

The following paragraph describes the added value of the results for the industry, whereby a distinction is made between the disease burden of COPD, GOLD strategy and evaluation of care.

Disease burden of COPD

This thesis demonstrated that subjects with mild-to-moderate COPD have an impaired health status. Patients with COPD have a reduced physical performance, a more impaired disease specific health status and are socially deprived compared to non-COPD subjects. This emphasizes the need for detailed characterization of individuals with COPD and for a more tailored treatment. The current thesis is also the first to reveal the need for additional interventions in secondary care patients who remain symptomatic despite pharmacologic and non-pharmacologic treatment, while another proportion of low symptomatic secondary care patients would allow for de-intensification of care. Moreover, complementing to the

current COPD care, it is suggested to detect COPD in the general population by performing spirometry and measuring functional status and health status in subjects with an increased risk.

GOLD strategy

Nowadays, the GOLD strategy determines high symptoms by using various questionnaires: the mMRC, (grade 2 or higher), the CCQ (1 point or higher), the CAT (10 points or higher), and the SGRQ (25 points or higher). At the start of this thesis, the impact of the suggested tools for symptoms of COPD and the different definitions of future risk on the frequency distribution and clinical characteristics of the GOLD groups remained unknown. The present dissertation shows that the choice of symptom measure impacts the classification of patients with COPD in GOLD A/C or B/D groups. It is the first to show normative values for CAT in a Dutch population (based on the 95th percentile of the CAT in a non-COPD population), resulting in a new CAT cut-point of >18 points to indicate an impaired health status. Supplementary, the present thesis recommends application of newly determined cut-points (with the mMRC as point of reference): mMRC 2 points; CAT 18 points; CCQ 1.9 points; and SGRQ 46 points. The current thesis also shows that the current GOLD cut-points give an underrepresentation of patients classified in groups A/C, compared with the newly derived points.

Evaluation of care

Previous studies already examined the responsiveness of the SGRQ, CAT, CCQ, and HADS to pulmonary rehabilitation in patients with COPD. Though, a variance in MCID estimates was observed, leading to a need for verification of the MCID estimates of the CAT, CCQ and HADS-A/D. It seemed reasonable to conclude that a change of -0.4 points in CCQ and a change of -1.5 points in HADS-A/D could be defined as clinically relevant. In contrast, MCIDs of the CAT were not comparable between studies, indicating that the CAT is possibly more sensitive for external influences than CCQ and HADS-A/D. Therefore, a new MCID range for CAT of -3.0 to -2.0 points is proposed.