identifying clusters of patients with COPD with similar physical activity measures, a novelty within the COPD literature. Physical activity hourly patterns were also investigated for the first time in a large-scale study in COPD, another important advance. All these analyses were only possible due to the use of objective methods of physical activity.

Some methodological considerations need to be taken into account. First, selection and information biases might be present, as the data were collected separately as part of different studies. Moreover, some types of patients with COPD might be underrepresented, such as patients from primary care. Nevertheless, having patients from different studies and countries allowed us to have a more diverse sample, which may enhance the external validity of our findings. Second, the clusters identified in our study were not validated as we were not able to show whether they relate to relevant clinical outcomes, such as COPD-related hospitalisations and deaths due to the lack of follow-up assessments, or whether they could be replicated in another sample. Third, other characteristics which may influence physical activity levels in patients with COPD, such as comorbidities [95], were not available. Finally, some of our findings need to be interpreted in light of the number of multiple comparison tests performed. Nonetheless, multiple findings in the same direction rather than a single statistically significant result are suggestive that these are not due to chance alone.

4.7 Conclusion

To conclude, daily physical activity measures and hourly patterns in patients with COPD were found to vary considerably depending on the clinical characteristic. Moreover, five clusters of patients were identified, each with distinct physical activity measures and hourly patterns. The present data show that outcome measures need to be clearly delineated when evaluating interventions aiming to promote physical activity in patients with COPD.