

Assessment of Physical Activity Patterns in Patients with Cardiopulmonary Diseases

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Abstract : Objectives: The target of this paper is (1) to explain objectively physical activity model throughout three chronic cardiopulmonary conditions, and (2) to study the connection among physical activity dimensions with disease severity, self-reported physical and emotional functioning, and exercise performance. Material and Methods: This is a cross-sectional study of patients in their domestic environment. Patients with cardiopulmonary diseases were: chronic obstructive pulmonary disease (COPD), (n=63), coronary heart failure (n=60), and patients with implantable cardioverter defibrillator (n=60). Main results measures: Seven ambulatory physical activity dimensions (total steps, percentage time active, percentage time ambulating at low, medium, and hard intensity, maximum cadence for 30 non-stop minutes, and peak performance) have been measured with an accelerometer. Results: Subjects with COPD had the lowest amount of ambulatory physical activity compared with topics with coronary heart failure and cardiac dysrhythmias (all 7 interest dimensions, $P<.05$); total step counts have been: 5319 as opposed to 7464 as opposed to 9570, respectively. Six-minute walk distance becomes correlated ($r=.44-.65$, $P<.01$) with all physical activity dimensions inside the COPD pattern, the most powerful correlations being with total steps and peak performance. In topics with cardiac impairment, maximal oxygen intake had the most effective small to slight correlations with five of the physical activity dimensions ($r=.22-.40$, $P<.05$). In contrast, correlations among 6-minute walk test distance and physical activity have been higher ($r=.48-.61$, $P<.01$) albeit in a smaller pattern of most effective patients with coronary heart failure. For all three samples, self-reported physical and mental health functioning, age, frame mass index, airflow obstruction, and ejection fraction had both exceptionally small and no significant correlations with physical activity. Conclusions: Findings from this study present a profitable benchmark of physical activity patterns in individuals with cardiopulmonary diseases for comparison with future studies. All seven dimensions of ambulatory physical activity have disfavor between subjects with COPD, heart failure, and cardiac dysrhythmias. Depending on the research or clinical goal, the use of one dimension, such as total steps, may be sufficient. Although physical activity had high correlations with performance on a six-minute walk test relative to other variables, accelerometers-based physical activity monitoring provides unique, important information about real-world behavior in patients with cardiopulmonary not already captured with existing measures.

Keywords : ambulatory physical activity, walking, monitoring, COPD, heart failure, implantable defibrillator, exercise performance

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