

Original article

Stability of physical self: Examining the role of chronic obstructive pulmonary disease

Stabilité physique et estime de soi : examen du rôle de la maladie bronchopneumopathie chronique obstructive

G. Ninot*, D. Delignières, A. Varray

EA4206, Laboratory of Sport, Performance, Health, University of Montpellier-I, 700, avenue du Pic-Saint-Loup, 34090 Montpellier, France

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Abstract

This observational study compared global self-esteem and physical self scores and their stability over a three-week period in patients with chronic obstructive pulmonary disease (COPD) and healthy adults, through the analysis of day-to-day time series. Two groups were formed: a COPD group of 27 patients with stable and moderate COPD, and a control group of 31 “healthy” adults. The results showed lower mean scores over the study period for global self-esteem, physical self-worth, and each of the physical self subdomains in COPD patients as compared with the “healthy” group. Moreover, the results showed less stability in global self-esteem, physical self-worth, and the physical self subdomains over the same period in these patients. Our principal findings support the assertion of Kernis and colleagues that unstable global self-esteem and physical self reflects a certain vulnerability to endogenous and exogenous events.

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Keywords: Variability; Self-esteem; Physical self; Dynamics; Chronic respiratory disease; Depression

Résumé

Cette étude compare le niveau et l’instabilité de l’estime de soi et du soi physique de sujets atteints de bronchopneumopathie chronique obstructive (BPCO) à celles de sujets sains du même âge, sur la base de séries temporelles individuelles de trois semaines consécutives. Vingt-sept patients BPCO de sévérité modérée et 31 sujets sains ont participé à l’étude. Les résultats montrent un niveau inférieur d’estime de soi, de valeur physique perçue et des sous-domaines physiques pour le groupe BPCO. Ils mettent aussi en évidence une instabilité supérieure des patients qui souligne la pertinence des travaux de Kernis à propos de l’instabilité de ces construits reflétant une vulnérabilité aux contraintes environnementales.

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Mots clés : Variabilité ; Estime de soi ; Soi physique ; Dynamique ; Bronchopneumopathie chronique obstructive ; Dépression

Everyday life is full of events that can affect the way we feel about ourselves and our bodies (Greenier et al., 1999). These events, from endogenous or exogenous origin, create individual differences in level of self-esteem or physical self (Marsh and Yeung, 1998) and perhaps in stability (Greenier et al., 1999; Kernis and Waschull, 1995; Nezlek and Plesko, 2001; Nowak et al., 2000). Adults with high self-esteem are generally characterized by high levels of sociability, impulsivity (Eysenck

and Eysenck, 1963), emotional stability (Francis, 1997) and resilience to stress (Wylie, 1989). Inversely, people with low self-esteem often present depressive episodes (Butler et al., 1994; Baumeister, 1993). They report more negative emotions, are more sensitive to negative events (Dutton and Brown, 1997; Epstein, 1992), and are more concerned by and with social evaluation (Baumgardner, 1990). The low self-esteem is typically reported in chronic obstructive pulmonary disease (COPD) patients (Engström et al., 1996; Kersten, 1990), who face a number of stresses, including increasing functional limitations and subsequent dependency on others, changes in body image and sexual performance, and the threat of death

* Corresponding author.

E-mail address: gregory.ninot@univ-montp1.fr (G. Ninot).

(Toshima et al., 1992). They experience anxiety, especially about dyspnoea episodes (Hynninen et al., 2005; Maurer et al., 2008). COPD patients have low self-efficacy (Kaplan et al., 1993) and depression syndromes that have been reported to be as high as 42% in patients with moderate to severe COPD (Light et al., 1985; McSweeney et al., 1982; Kunik et al., 2005).

Recent research has emphasized the inherent fluctuations of self-esteem (Nezlek and Plesko, 2001; Nowak et al., 2000; Thewissen et al., 2008) and physical self (Amorose, 2001; Ninot et al., 2001). For healthy adults, these perceived dimensions consistently exhibit either noisy fluctuations around a reference value (Marsh and Yeung, 1998), short-term fluctuations, from none to considerable (Kernis, 2005) or a slowly varying mean over daily events and across situations (Ninot et al., 2001; Ninot et al., 2005). Stability in these dimensions creates stable behaviors and psychological reactions (McCrae and Costa, 1994; Mortimer et al., 1982). Stable self-perceptions reflect self-consistency with the development of feelings of unity, independence, predictability and control (Epstein, 1979). Inversely, individuals with unstable self-esteem often experience anger and hostility (Kernis et al., 1991). Unstable self-esteem also reveals interesting information about depression (Greenier et al., 1999; Kernis et al., 1991; Oosterwegel et al., 2001) and paranoia (Thewissen et al., 2008). Patients with COPD can experience unpredictable exacerbations such as increased dyspnoea, wheezing, cough, sputum production (Madison and Irwin, 1998). These symptoms, particularly dyspnoea, may interfere with the maintenance of stable auto-evaluative patterns and significantly raise anxiety (Borak et al., 1991; Karajgi et al., 1990; Withers et al., 1999). No study, however, has yet to investigate the stability of global self-esteem or physical self in patients with COPD.

The purpose of the present study was to compare the level and stability of self-esteem and physical self in patients with COPD and healthy adults over a three-week period through the analysis of day-to-day time series. We suspect that the irregular symptoms of a chronic respiratory disease powerfully influence the stability of these perceived dimensions over time. We supposed that the mean scores of global self-esteem and physical self and stability indices would be lower in COPD patients than in healthy adults.

1. Method

1.1. Participants

Fifty-eight adults assigned to two groups participated in this study (Table 1). The first group comprised 27 patients with stable and moderate COPD (from 46 to 74 years old). The other group served as control and was composed of 31 adults (from 48 to 73 years old). The control group was used to determine whether the perceived dimensions in “healthy” adults exhibit lower fluctuations (standard deviation and range), and higher levels as compared with those of COPD patients. Patients with moderate COPD were consecutively recruited from three regional hospitals where they had just benefited from their first exercise test. Inclusion criteria were as follows: a post-bronchodilator forced

Table 1
Characteristics of participants.

Variable	COPD	Healthy
<i>N</i>	27	31
Gender (W/M)	10/17	11/20
Age (<i>M</i> ± <i>S.D.</i>)	63.0 ± 7.3	65.1 ± 7.1
FEV ₁ % (<i>M</i> ± <i>S.D.</i>)	54.0 ± 12.0#	–
FEV ₁ /FVC% (<i>M</i> ± <i>S.D.</i>)	61.3 ± 15.1☒	–
Weight (kg) (<i>M</i> ± <i>S.D.</i>)	72.4 ± 12.6	68.0 ± 8.9
Height (cm) (<i>M</i> ± <i>S.D.</i>)	166.4 ± 5.3	168.4 ± 4.1

Note: FEV₁: forced expiratory volume in 1 s; FVC: forced volume capacity; #: min = 30% and max = 74%; ☒: min = 30% and max = 81%.

expiratory volume in one second (FEV₁)/forced vital capacity (FVC) < 0.7 and an FEV₁ 30–79% predicted, no indication for home oxygen therapy, and no exacerbation or hospitalization in the previous two months. The study was approved by the medical ethics committees of all three hospitals. Healthy subjects were consecutively recruited during conference of health primary prevention. None of them had pharmacologically treated psychiatric disorders or acute medical illnesses and none were facing major negative life events that would have affected psychological function over the three-week period. All subjects gave informed written consent to participate. This instrument was proven to reproduce the hierarchical structure of the corresponding multi-item inventories using correlations and partial correlations, factor analysis and confirmatory factor analysis (Fox and Corbin, 1989; Ninot et al., 2000), as well as for its external validity (Fox and Corbin, 1989).

1.2. Measures

To assess day-to-day dynamics, the instrument needed to be short (quick assessment to maintain motivation), easy to complete (single sheet of paper, weekly journal, software), sensitive (for example, visual analog scale), reliable (consistent with other measuring instruments) and valid (predictive, concurrent). A single-item provides an adequate measure of global self-esteem because most adults are schematic for self-esteem (Robins et al., 2001), and physical self (Ninot et al., 2001). Thus, these perceived dimensions are likely to be repeatedly activated in a wide range of situations and become chronically accessible by adulthood (Robins et al., 2001). The Physical Self Inventory-6 (PSI-6; Ninot et al., 2001), which measures global self-esteem, physical self-worth and four physical subdomains (physical condition, sport competence, physical strength and attractive body) with one item per dimension, has acceptable psychometric properties (Table 2). The participants responded to this inventory using a visual analog scale (a single 10-cm horizontal line without formal indications is drawn under each item) that ranged from “not at all” (measured 0.0 cm) to “absolutely” (measured 10.0 cm). Ninot et al. (2001) validated this tool specifically designed to allow repeated administration and reveal variability in self-esteem and physical self. This instrument was proven to reproduce the hierarchical structure of the corresponding multi-item inventories using correlations and partial correlations, factor analysis and confirmatory factor analysis

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