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# Characteristics of patients with internal diseases who use relaxation techniques as a coping strategy



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Available online 17 August 2013

## KEYWORDS

Relaxation techniques;  
Meditation;  
Autogenic training;  
Complementary therapies;  
Internal medicine

## Summary

**Objectives:** To assess sociodemographic, clinical, and psychological characteristics of patients with internal diseases who use relaxation techniques as a coping strategy.

**Design:** Cross-sectional analysis among patients with internal diseases.

**Setting:** Department of Internal and Integrative Medicine at an academic teaching hospital in Germany.

**Main outcome measures:** Prior use of relaxation techniques (e.g. meditation, autogenic training), perceived benefit, and perceived harm. Potential predictors of relaxation techniques use (sociodemographic characteristics, health behavior, internal medicine diagnosis, general health status, mental health, satisfaction, and health locus of control) were tested using multiple logistic regression analysis.

**Results:** Of 2486 participants, 1075 (43.2%) reported to have used relaxation techniques, 648 (60.3%) reported benefits, and 11 (1.0%) reported harms. Use of relaxation techniques was independently associated with female gender (Odds ratio [OR] = 1.43; 95% confidence interval [CI] = 1.08–1.89), higher education (OR = 1.32; 95%CI = 1.03–1.71), fibromyalgia (OR = 1.78; 95%CI = 1.22–2.61), and internal health locus of control (OR = 1.27; 95%CI = 1.01–1.60). Use of relaxation techniques was negatively associated with age below 30 (OR = 0.32; 95%CI = 0.20–0.52) or above 64 (OR = 0.65; 95%CI = 0.49–0.88), full-time employment (OR = 0.75; 95%CI = 0.57–0.98), current smoking (OR = 0.72; 95%CI = 0.54–0.95), osteoarthritis (OR = 0.51; 95%CI = 0.34–0.77), rheumatic arthritis (OR = 0.59; 95%CI = 0.37–0.93), good to excellent health status (OR = 0.70; 95%CI = 0.52–0.96), and high life satisfaction (OR = 0.78; 95%CI = 0.62–0.98).

**Conclusion:** In a German sample of patients with internal diseases, relaxation techniques were used as a coping strategy by about 43%. Users were more likely to be middle-aged, female, well-educated, diagnosed with fibromyalgia, not smoking, not full-time employed, and not to have

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a good health status or high life satisfaction. A high internal health locus of control predicted relaxation techniques use. Considering health locus of control might improve adherence to relaxation techniques in internal medicine patients.

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## Background

Stress is an important response of the whole organism to challenging stimuli (stressors) that induces physiological, behavioral, and psychological adjustments to cope with the situation.<sup>1</sup> The stress response involves the central nervous system, the peripheral nervous system, and the endocrine system.<sup>2</sup> Chronic stress (where the organism is unable to adequately cope with the stressor or the stressor cannot be removed and therefore exhausts coping abilities) has been shown to be involved in the development and maintenance of a variety of physical<sup>1,3,4</sup> and mental conditions.<sup>5</sup> Depression and anxiety may arise from psychological distress; this is the inability to cope with social or environmental stressors.<sup>6</sup> By stimulating the hypothalamic-pituitary-adrenal axis, cortisol and catecholamins are released that can foster hypertension and other cardiovascular conditions.<sup>1</sup> Other internal<sup>3</sup> and pain conditions<sup>4</sup> have also been associated with chronic stress. Relaxation techniques include a number of methods that were developed to induce the relaxation response; this is the activation of the parasympathetic nervous system.<sup>7</sup> During the relaxation response, breathing rate and blood pressure are decreased and a feeling of calm and well-being is induced, counteracting the stress response. While the specific techniques that are used to elicit the relaxation response can vary, most relaxation techniques commonly involve an actively focused attention to calm the mind and body.<sup>8</sup> These techniques are commonly self-administered and become more profound with practice. Common relaxation techniques include meditation, autogenic training, deep breathing, progressive relaxation, and guided imagery.<sup>8</sup>

Relaxation techniques have been shown to improve a variety of physical health conditions.

Especially meditation has been shown to reduce hypertension and other cardiovascular risk factors,<sup>9</sup> pain,<sup>10,11</sup> depression, and stress.<sup>12,13</sup> Both progressive relaxation and autogenic training seem to be effective in reducing stress and pain.<sup>14–16</sup>

In 2007, 12.7% of American adults used deep breathing exercises, and 9.4% used meditation.<sup>17</sup> The use of breathing exercises and meditation increased between 2002 and 2007, reflecting an increased popularity of relaxation techniques.<sup>17</sup>

Despite the therapeutic value of relaxation techniques for patients with internal diseases and their increased use, little is known about factors that are associated with relaxation techniques use and barriers to practice in this patient population.

The aim of this cross-sectional analysis was to identify sociodemographic, clinical, and psychological characteristics of patients with chronic internal diseases who use relaxation techniques as a coping strategy.

## Methods

### Participants

All patients that were referred to a Department for Internal and Integrative Medicine during a 3-year period were invited to participate in the assessment immediately upon admission. To be eligible for participation, patients had to be diagnosed with an internal disease.<sup>18</sup> All included patients gave written informed consent.

### Measures

#### Prior use of relaxation techniques

Patients were queried on prior use of relaxation techniques with the following question: Have you ever used relaxation techniques (e.g. autogenic training, mindfulness meditation) to cope with your current main disease? To assess perceived help- and harmfulness, those patients that reported to have used relaxation techniques were further queried: How helpful did you perceive relaxation techniques to cope with your current main disease? Answers were categorized as helpful (yes, no) and harmful (yes, no) in order to be able to compute odds ratios between patients who had used relaxation techniques and those who had not.

#### Potential predictors of the use of relaxation techniques

##### Sociodemographic characteristics

Sociodemographic variables were categorized as (a) age: 18–29, 30–39, 40–49, 50–64,  $\geq 65$  years, (b) gender: female (yes, no), (c) education: less than college, college graduate, (d) employment: full-time, part-time, unemployed, and (e) family status: in relationship, not in relationship. Further, health behavior was assessed and categorized as (a) smoking status: current smokers, past smoker, non-smokers, (b) alcohol intake: abstainers, less than twice weekly, at least twice weekly, and (c) fast food intake: abstainers, less than twice weekly, at least twice weekly.

##### Clinical characteristics

The patients' main diagnosis was assessed using the International Classification of Disease 10 (ICD-10). For the purpose of this analysis, diagnoses were categorized based on relative prevalence in this sample as (a) osteoarthritis, (b) rheumatoid arthritis, (c) fibromyalgia, (d) spinal pain, (e) headache, (f) other pain, (g) hypertension, (h) ischemic cardiac disease, (i) irritable bowel syndrome, (j) inflammatory

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