Dance therapy combined with patient education improves quality of life of persons with obesity

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Overweight and obesity: 1992 to 2012

http://www.bfs.admin.ch/bfs/portal/fr/index/themen/14/02/02/key/02.html
The relationships between obesity, functional capacities and quality of life are multifaceted and complex.

Decreased functional capacities together with poor self-esteem → sedentary lifestyle, social isolation and poor quality of life [Friedmann et al. 2001]

Importance to identify potential therapeutic approaches to overcome functional limitations of obese people, to increase their physical activity level and to improve their quality of life.
- Dance, music and art therapy are significant constituents of physical rehabilitation in the twenty-first century [Aktas et al. 2005; Pratt et al. 2004]

- Dance therapy aims to influence patients’ sensation, sensory and motor perception, self-esteem and body image [Aktas et al. 2005; Pratt et al. 2004]

- These changes could also have a beneficial effect on individuals’ functional capacities and physical activity level
To assess the effect of dance therapy combined with patient education on:

a) quality of life

b) functional capacity (lower limb power and endurance)

c) physical activity level in obese individuals
Population

Sixty-seven obese patients (BMI ≥ 30 kg/m²) were randomized to either an intervention or control group.

Inclusion Criteria

- Being able to walk 10 meters without a walking aid
- No foot ulcer at the moment of data acquisition
- No orthopedic, surgical or neurological (other than diabetic peripheral neuropathy) pathology affecting the gait
- Absence of non-diabetic neuropathy
- Interested in dance therapy and agreed to participate
Control

- Patient education ambulatory program based on medical issues, art therapy, diet, cognitive-behavioral aspects of obesity and physical activity
- A personal coach (physician, nurse or dietician specialized in weight loss and patient education), is allocated to each participant

Intervention

- Patient education program combined with dance therapy
- Dance therapy: 1/week ; 110 minutes over 16 weeks.
Outcome measures

- Quality of Life (IWQOL)  [Kolotkin et al 2009]
- Physical Activity Level with GT3X accelerometer (Acti Graph)
- Functional Capacity
  - 6-min walking test for lower limb function [Elloumi M et al. 2011]
  - Sit-to-stand test for aerobic endurance [Meretta BM, 2001]
Analysis

- Descriptive statistics
- Check for normality with the Shapiro–Wilk test.
- Repeated measures:
  - Normal distributed data: paired sample t-tests
  - Non-normally distributed data: Friedman’s two-way ANOVA.
- Additional benefit of dance therapy compared to patient education alone
  - Normally distributed variables: Independent sample t-tests
  - Non-normally distributed variables: Mann–Whitney U test
  - Cohen’s d effect sizes
<table>
<thead>
<tr>
<th>Anthropometrics</th>
<th>Control group</th>
<th>Intervention group</th>
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<tbody>
<tr>
<td>Sex (men/women)</td>
<td>1/32</td>
<td>1/33</td>
</tr>
<tr>
<td>Age (years ± SD)</td>
<td>50.39 (8.54)</td>
<td>46.91 (10.15)</td>
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<tr>
<td>Co-morbidities</td>
<td></td>
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<tr>
<td>Metabolic disorder [%]</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>Cardiovascular disorder [%]</td>
<td>23</td>
<td>14</td>
</tr>
<tr>
<td>Respiratory disorder [%]</td>
<td>8</td>
<td>12</td>
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<tr>
<td>Musculoskeletal disorder [%]</td>
<td>15</td>
<td>16</td>
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<tr>
<td>Depression [%]</td>
<td>17</td>
<td>16</td>
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<tr>
<td>Other psychiatric disorders [%]</td>
<td>8</td>
<td>10</td>
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The dance therapy group significantly improved quality of life, in particular self-esteem.
No changes were observed for functional capacity and physical activity level.

Dance therapy added to a patient educational program did not demonstrate statistically significant greater effects compared to an educational program alone.

Nevertheless, the between group comparisons showed moderate effect sizes according to Cohen et al. for the impact of weight on quality of Life:

- self-esteem: 0.54
- perception of public distress: 0.54
- sexual life: Cohen 0.49
- overall quality of life: 0.47

Interpretation: 0.2 = small 0.5 = medium 0.8 = large effect
Strength

- Design
- Dance therapy was administered by an experienced art therapist

Limitations

- All patients included presented at least minimal autonomy in daily life activities
- Almost only women were interested in joining our study
Body perception alone is not sufficient to improve physical performance
Ball-room dancing or Zumba® might be more appropriate

[McNeely et al., 2015, Krishnan et al. 2015]
Dance therapy combined with a structured patient education program seems to be an interesting approach to improve quality of life of obese people.

Mainly females adhere to dance therapy.

Dance therapy, seems not to show an additional effect on functional capacities, patients' physical activity level or patients' health related quality of life compared to an educational program alone.
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Thank You!
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<td>- Cohen, J. (1977). <em>Statistical power analysis for the behavioral Sciences</em></td>
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