Ballroom dancing as a strategy for occupational balance and stress reduction in university students in the health area

A dança de salão como estratégia para o equilíbrio ocupacional e diminuição do estresse em universitários da área da saúde

El baile de salón como estrategia de equilibrio ocupacional y reducción del estrés en estudiantes universitarios del área de la salud

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Objective: to evaluate the effectiveness of ballroom dancing as an occupational therapeutic intervention strategy to reduce stress and promote occupational balance in university students attending courses in the health area. Methods: clinical research, pre-experimental in a single case, quantitative, carried out at the Universidade do Estado do Pará, Brazil, Campus II, using the following instruments: Abbreviated Quality of Life Assessment Instrument, Inventory of Stress Symptoms for Adults, and questionnaire of occupational balance. Results: 18 students participated, 10 female and 8 male, from four undergraduate health courses (Medicine, Occupational Therapy, Biomedicine and Physical Therapy), aged between 19 and 29 years. There were statistically significant changes in the stress levels of university students after the interventions, 94.4% had symptoms of stress before the interventions, only 27.7% persisted with some. In addition to the general improvement, the perception of quality of life and occupational balance was increased. Conclusion: results point to the effectiveness of ballroom dancing as an occupational therapeutic resource aimed at stress control and the reestablishment of occupational balance in university students. The need for institutional policies aimed at the health care of university students is highlighted.

Descritores: Dancing; Occupational therapy; Stress, Psychological; Occupational stress.

Objetivo: avaliar a eficácia da dança de salão como estratégia de intervenção terapêutica ocupacional para a diminuição do estresse e promoção do equilíbrio ocupacional em universitários de cursos da área de saúde. Método: pesquisa clínica, de caráter pré-experimental de caso único, quantitativo, realizado na Universidade do Estado do Pará, Campus II, através dos instrumentos: Instrumento abreviado de avaliação da qualidade de vida, Inventário de Síntomas de Stress para Adultos, e questionário de equilíbrio ocupacional. Resultados: participaram 18 estudantes, 10 do sexo feminino e 8 do sexo masculino, de quatro cursos de graduação da saúde (Medicina, Terapia Ocupacional, Biomedicina e Fisioterapia), com idades entre 19 e 29 anos. Verificou-se mudanças estatisticamente significativas nos níveis de estresse dos universitários após as intervenções, 94,4% apresentavam sintomas de estresse antes das intervenções, apenas 27,7% persistiram com algum. Além da melhora geral, aumentou-se a percepção da qualidade de vida e equilíbrio ocupacional. Conclusão: resultados apontam a eficácia da dança de salão como recurso terapêutico ocupacional voltado para o controle de estresse e o reestabelecimento do equilíbrio ocupacional em universitários. Destaca-se a necessidade de políticas institucionais voltadas para o cuidado à saúde dos estudantes universitários.

Descritores: Dança; Terapia ocupacional; Estresse psicológico; Estresse ocupacional.

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INTERRODUCTION

Access to university generally coincides with the transition from adolescence to adulthood, and covers fundamental situations for the formation of an individual’s identity, such as the formation of friendships, mature and stable love ties, commitment to the academic and work world, in addition to greater autonomy in relation to the family.

The experience of this transition itself is conducive to experiencing stress, characterized as a non-specific reaction of the organism, resulting from psychophysiological changes that occur when the subject is faced with situations that require adaptations and impair their homeostasis. When such experience is combined with the stressors arising from the student’s need to reconcile the situations of the new reality with their family life, other interpersonal relationships and leisure activities, they become potentially more prone to high levels of stress, consequently generating a greater effort and need for adaptation.

At the university, the student takes on activities whose demand and concentration for success demand high performance efforts, such as the routine of constant and increasing studies. The tendency of everyday university life to become a stressor is imminent, due to the responsibility, anxiety, competitiveness and physical and mental energy it demands.

When analyzing the university experience, situations of occupational imbalance will also be found. Occupational balance is understood as the dynamic interdependence of different occupations such as work, leisure, education and rest, being mediated by internal values, interests, goals and external demands of the environment.

Occupational Therapy has a range of possibilities of action with subjects in situations of physical and/or emotional stress, and consequent occupational imbalance, such as body expressive activities. Such interventions promote well-being and possibilities of coping with the difficulties experienced in daily life.

Among the expressive therapeutic strategies of a body nature, dance brings benefits to self-concept and self-esteem, improves interpersonal relationships, helps in promoting mental health, reducing anxiety, stress and sedentary lifestyle, as well as providing the expression of emotions and stress relief.

Ballroom dancing as a therapeutic strategy is considered a differentiated physical activity modality. It integrates aspects of the search for quality of life, such as risk reduction for cardiovascular diseases, diabetes, hypertension, some types of cancer, body weight control and maintenance of blood glucose levels; to the social, cultural and intellectual context of individuals, stimulating motor coordination, rhythm, spatial perception and neuromuscular...
and musculoskeletal development, which consequently culminates in improved self-esteem and deconstruction of psychological blocks, such as shyness.

Dance is a system of non-verbal expression that serves both to express ideas and feelings, as well as to satisfy the need to move, thus having different meanings. From this diversity, dance can also be configured as an intervention instrument in Occupational Therapy.

Most of the research in the area of stress control is directed to the adult population and in the work environment, and the study presented here, possibilities of maintaining the health of the academic community. Ballroom dancing works as a vehicle for the interpretation and expression of feelings, which provides its practitioners with greater body and mood perception and coping with intrinsic stressors in the academic environment.

Thus, this research aimed to evaluate the effectiveness of ballroom dancing as an occupational therapeutic intervention strategy to reduce stress and promote occupational balance in university students attending courses in the health area.

METHODS

This is a single case pre-experimental clinical research. In this type of research design, a group is exposed to a treatment followed by a measure.

Academics in the health area of the Center for Biological and Health Sciences (CCBS) of the Universidade do Estado do Pará (UEPA), Campus II, with availability for two weekly interventions. The interventions took place at the Human Motricity Laboratory (LMH) linked to the undergraduate course in Occupational Therapy at UEPA, and were characterized as ballroom dancing classes, divided into five moments: initial body stretching, teaching of movements, application of dynamics to favor learning, practice the rhythm worked and closing the class.

The LMH is a closed, air-conditioned room, with mats available and a large mirror on one of its walls. The materials used were a mobile phone and a portable speaker, with bluetooth connection, for the reproduction of music. Sixteen interventions were carried out, twice a week, lasting one hour each.

Two standardized research instruments were used (before and after the interventions with ballroom dancing) for the selection of participants and data collection: the LIPP’s Inventory of Stress Symptoms for Adults (ISSL), which maps and identifies the stress levels, and the abbreviated instrument of the World Health Organization (WHO) for assessing quality of life (WHOQOL-bref). In addition to these, a protocol was applied to assess occupational balance.
Data collection took place in 2019, between the months of May and June, and the research was approved by the Research Ethics Committee of the CCBS/UEPA, embodied opinion No. 3,128,66. The participants were informed of the confidentiality and anonymity of the results, of the objectives of the study, signing an Free and Informed Consent Form when completing the research protocols.

The collected data were stored and organized in spreadsheets for further analysis and presentation. The results obtained in the evaluation and re-evaluation through the protocols used were compared, with a view to verifying the effects of the interventions.

Microsoft® Excel 2007 software was used to store and organize the data, as well as to create the graphs. Statistical analysis was performed using the Bioestat® 5.4 Software. To analyze the normality of the sample, the Shapiro-Wilk statistical test was used. Normally distributed variables were analyzed using Student’s t test. The treatment of variables that did not show normal distribution was done using the Wilcoxon test. The α level of 0.05 was adopted to reject the null hypothesis.

RESULTS

18 students participated, 10 female and 8 male, from four undergraduate health courses (Medicine, Occupational Therapy, Biomedicine and Physical Therapy), aged between 19 and 29 years.

Table 1 presents the classification and reduction in the stress level according to the LIPP - ISSL test, both at the time of assessment (5.6%) and reassessment (72.2%).

Table 1. Health academics regarding the stress rating according to the ISSL - LIPP scale. Belém do Pará, 2019.

<table>
<thead>
<tr>
<th></th>
<th>Assessment (n=18)</th>
<th>%</th>
<th>Reassessment (n=18)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Stress</td>
<td>1</td>
<td>5.6</td>
<td>13</td>
<td>72.2</td>
</tr>
<tr>
<td>Alert Phase</td>
<td>2</td>
<td>11.1</td>
<td>1</td>
<td>5.6</td>
</tr>
<tr>
<td>Resistance Phase</td>
<td>7</td>
<td>38.9</td>
<td>4</td>
<td>22.2</td>
</tr>
<tr>
<td>Near Exhaustion</td>
<td>5</td>
<td>27.7</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Exhaustion</td>
<td>3</td>
<td>16.7</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>100.0</td>
<td>18</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Graph 1 shows, in percentage, the behavior regarding changes in the stress level when comparing the moments of evaluation and reevaluation, showing, in addition to the reduction of stress, the removal of the condition of near exhaustion and exhaustion.

Graph 2 demonstrates the classification and distribution of symptoms, as well as those who present only or predominantly physical or psychological symptoms, and those who have both symptoms (physical and psychological), or even their absence, showing the effect of the activity developed.

Table 2 presents the average of the results for each domain and the total score of the WHOQOL – Bref protocol, at the time of evaluation and re-evaluation.

**Table 2. Academics regarding the WHOQOL Protocol – bref (quality of life). Belém do Pará, 2019.**

<table>
<thead>
<tr>
<th>Domain</th>
<th>Assessment (No= 18)</th>
<th>Reassessment (No= 18)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Score</td>
<td>3.03 ± 0.72</td>
<td>3.83 ± 0.59</td>
<td>0.000*</td>
</tr>
<tr>
<td>Physical QL</td>
<td>3.23 ± 0.52</td>
<td>3.90 ± 0.56</td>
<td>&lt;0.0001#</td>
</tr>
<tr>
<td>Psychological QL</td>
<td>3.18 ± 0.87</td>
<td>3.71 ± 0.68</td>
<td>0.001#</td>
</tr>
<tr>
<td>Social Relationships</td>
<td>3.60 ± 0.69</td>
<td>3.91 ± 0.63</td>
<td>0.02#</td>
</tr>
<tr>
<td>Environment</td>
<td>2.95 ± 0.65</td>
<td>3.38 ± 0.64</td>
<td>&lt;0.0001#</td>
</tr>
</tbody>
</table>

Table 3 presents the mean scores per domain present in the occupational balance protocol. The domains are the ADL occupations: Activities of Daily Living (ADL); and Instrumental Activities of Daily Living (IADL), rest and sleep, education, work, leisure and social participation.

**Table 3. Academics regarding the occupational balance protocol. Belém do Pará, 2019.**

<table>
<thead>
<tr>
<th>Domain</th>
<th>Assessment (No= 18)</th>
<th>Reassessment (No= 18)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADL</td>
<td>3.5 ± 0.9</td>
<td>2.7 ± 0.9</td>
<td>0.00*</td>
</tr>
<tr>
<td>IADL</td>
<td>3.3 ± 1.0</td>
<td>3.0 ± 0.8</td>
<td>0.13</td>
</tr>
<tr>
<td>Rest and Sleep</td>
<td>4.4 ± 0.7</td>
<td>3.2 ± 0.9</td>
<td>0.000*</td>
</tr>
<tr>
<td>Education</td>
<td>3.1 ± 0.9</td>
<td>2.5 ± 0.6</td>
<td>0.03*</td>
</tr>
<tr>
<td>Work</td>
<td>2.8 ± 1.1</td>
<td>2.6 ± 1.0</td>
<td>0.29</td>
</tr>
<tr>
<td>Leisure</td>
<td>4.2 ± 0.6</td>
<td>3.3 ± 0.8</td>
<td>0.00*</td>
</tr>
<tr>
<td>Social Participation</td>
<td>4.2 ± 0.7</td>
<td>2.9 ± 0.9</td>
<td>0.00*</td>
</tr>
</tbody>
</table>

*Wilcoxon (p < 0.05).

**DISCUSSION**

The evaluation of the participants through the ISSL-LIPP protocol showed an important incidence of stress among the participants before the beginning of the interventions (94.4%), being classified mostly in the resistance phase (38.9%) and near exhaustion (27.7%). The high prevalence of stress in the academic environment is attributed to the demands needed for entering and staying in universities, such as: intense study routine, reduced rest and sleep periods, curricular and extracurricular responsibilities, decreased social participation, among others.

Also, using the ISSL-LIPP, it was possible to verify that, before the interventions, there were occurrences of psychological symptoms resulting from stress (55.6%) among the students, which differed from those found by previous studies that showed a higher prevalence of physical symptoms among university students. Higher Education Institutions (HEIs) are
risk environments for mental health, due to the range of stress-creating or pathogenic processes to which students are subjected throughout their university experience\textsuperscript{17}.

Ballroom dancing interventions brought positive impacts in terms of reducing stress in the group of university students in this research, because, among the 94.4\% of students who were in some phase of stress before the interventions, only 27.8\% remained with some degree of stress, in contrast to 72.2\% of the sample, who did not present any degree of stress after the interventions. The practice of ballroom dancing has great popular appeal, as it is playful, pleasurable and socializing, which can contribute to greater adherence and optimization of the benefits of physical exercises, including the reduction of stress. In addition, the combination of music and physical activity generates in people high levels of well-being hormones, such as endorphins\textsuperscript{18}.

In the assessment by the WHOQOL-bref, prior to the interventions, the quality of life of university students reached a regular average (up to 3.9) in all domains. This can be explained by several common characteristics in the routine of health students, such as constant fatigue, course requirements, intense mandatory workload, participation in extracurricular activities, contact with reality in internships, involvement with patients and their stories, in addition to household chores, which leads to an overload of activities, causing physical and mental exhaustion, negatively interfering with quality of life\textsuperscript{19}.

Quality of life is an important parameter for assessing subjects' health, representing one of the most common goals in the practices of occupational therapists with their clients. The American Occupational Therapy Association (AOTA)\textsuperscript{20} defines quality of life as: client satisfaction with their life, involving hope, self-concept, health and socioeconomic factors.

When considering the drop in quality of life and the losses of university students, intervention programs for this public are necessary, aiming to assist them in the process of adaptation and permanence of the academic in the university, since the university experience demands several psychological resources and emotional to face the current demands. The lack of academic support can generate a more favorable environment for the development of psychological and emotional changes (such as anxiety), consequently compromising the subject's quality of life\textsuperscript{21}.

After the interventions, there were significant changes in all domains of the WHOQOL-Brief, indicating the positive influence of ballroom dancing practices as promoters of improvement in the quality of life of its practitioners, through the interaction between mind and body that dancing together it provides, in addition to stress reduction, motor improvement, improvement in aesthetics and in intra and interpersonal relationships, contributing positively
to physical, mental and social health, and, consequently, to the perception of the subjects' quality of life\textsuperscript{22}.

The practice of ballroom dancing has been sought as a physical activity option due to several factors, such as its motivational characteristics, social interaction, motor coordination, rhythm, spatial perception, improvement in self-image, and others\textsuperscript{23}.

In occupational balance, it is important to emphasize the scarcity of scientific productions and instruments addressing this issue, even though this is a concept of great relevance to occupational therapy practice, which has in its essence the holistic look at individuals within their occupations.

As for the occupational organization by the Occupational Balance protocol, it was observed that before the interventions, that everyone perceived losses, due to the academic routine, in the evaluated occupations (ADL, IADL, Rest and Sleep, Education, Work, Leisure and Social Participation).

Such losses in occupations are possibly a consequence of the university student’s role and the environment to which the participants are inserted, in this case, courses in the health area. There is a tendency of this public to prioritize education and work occupations. University students, in general, dedicate little time of their routine to activities outside the university, such as family life, other interpersonal relationships and leisure activities, leading to a greater effort to adapt\textsuperscript{10}.

After the interventions, it was possible to observe significant changes regarding the perception of losses and the occupational organization, mainly in the occupations ADL, Rest and Sleep, Education, Leisure and Social Participation, with no considerable changes in IADL and Work. Dancing can be considered as a physical activity that improves disposition and motivation for day-to-day activities, reducing sedentary lifestyle and the occurrence of diseases. People increasingly seek the practice of dance as leisure, mainly for providing joy, fun and personal satisfaction to its practitioners, with consequent benefits for health, physical, psychological and social well-being\textsuperscript{6}.

Regarding the occupations Work and IADL, which statistically showed no improvement after intervention, the hypothesis raised is that, as most of them did not have the occupation of work, they were not the main responsible for the IADL’s in their family contexts.

Rest and Sleep occupation is also evident as the most significant result during the reassessment. Individuals who practice physical activity have more regular circadian rhythms and, consequently, better sleep quality when compared to non-practicing individuals\textsuperscript{24}. People who practice some physical activity declare that they fall asleep faster, feel less tired during the
day, reports that university students participating in the research also brought during the interventions.

Therefore, dance enables changes in the lifestyle of those who practice it, helping to adapt habits and routines and contributing to a better occupational organization and consequent occupational balance, contributing to the achievement of the main perspectives of practices in Occupational Therapy, which are: promoting well-being, quality of life and involvement in meaningful occupations.

CONCLUSION

Ballroom dancing has been shown to be effective in promoting occupational balance, reducing stress and increasing the quality of life among university health students, reinforcing its potential as an occupational therapeutic resource.

The small sample size and the fact that the collection was carried out in only one institution were the main limitations of this study, and therefore generalizations should be cautious. However, this does not diminish its importance for the entire university community, suggesting that further research be carried out to assess the university environment and the effects of bodily experiences. Carrying out care and intervention activities with the university population should be expanded through institutional policies, with a view to providing more spaces for care and listening to stress and anxiety demands, seeking to make the university a more welcoming and less stressful environment for academics.

With regard to the specificity of Occupational Therapy, it is of paramount importance that researchers in the area invest in occupational balance, with the construction of assessment instruments, which could reverse the scarcity of scientific publications addressing this topic, by encouraging its approach with populations. various.

It is also worth mentioning that the Political Pedagogical Project of the Occupational Therapy course at the University, to which this research is linked, focuses on different bodily practices in a different way, with curricular components that accompany students from the first to the sixth semester, providing access to resources such as dance, and promoting the construction of interventional repertoires that are allied to the demands observed in the researched reality, making it possible for students to build connections and studies that approach more integrative and holistic practices.
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141

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Ingrid Ferreira de Sousa and Flávia Larissa Mendonça Magalhães participated in the design, collection and analysis of data and writing. Samantha Hanna Seabra Castilho Simões and Ingrid Bergma da Silva Oliveira collaborated in writing and proofreading. Apio Ricardo Nazareth Dias and Alna Carolina Mendes Paranhos contributed to the design, collection and analysis of data, writing and review.

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