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Effects of mindfulness practice in the elderly

Efectos de la práctica de mindfulness en personas mayores

Efeitos da prática de mindfulness em idosos

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Abstract

The aim was to investigate the effects of Mindfulness in the elderly and to verify the relationship between GDS and socioeconomic variables. This is a clinical trial, with a sample of 34 elderly people evaluated pre- and post-intervention selected in two different scenarios. Elderly people aged 60 and over, of both sexes, residing in the city of Dourados MS, participated in this study. For evaluation were used: sociodemographic questionnaire, Geriatric Depression Scale (GDS) and the proposed intervention was the Mindfulness-Basead Health Promotion protocol. Descriptive analysis was performed using frequency calculations and measures of central tendency and dispersion. A t-test was performed for samples to compare the EDG instrument before and after the intervention. No significant differences were found in depressive symptom scores after the Mindfulness intervention. The correlation test showed that the higher the level of education, the lower the scores of depressive symptoms in the elderly. The study did not allow verifying the effects of Mindfulness on depression since the sample contained few elderly people with signs of depression, however, the intervention allowed to underline the possibility of practicing Mindfulness to stimulate a healthy lifestyle in the elderly.

Descriptors: Mindfulness; Elderly; Elderly Health; Depression; Mental Health.

Resumén

El objetivo fue investigar los efectos del Mindfulness en ancianos y verificar la relación entre GDS y variables socioeconómicas. Se trata de un ensayo clínico, con una muestra de 34 ancianos evaluados pre y post intervención seleccionados en dos escenarios diferentes. Participaron de este estudio ancianos de 60 años o más, de ambos sexos, residentes en el municipio de Dourados MS. Para la evaluación se utilizaron: cuestionario sociodemográfico, Escala de Depresión Geriátrica (GDS) y la intervención propuesta fue el protocolo de Promoción de la Salud Basado en Mindfulness. El análisis descriptivo se realizó mediante cálculos de frecuencia y medidas de tendencia central y dispersión. Se realizó una prueba t para muestras para comparar el instrumento EDG antes y después de la intervención. Se utilizó la prueba de Análisis de No se encontraron diferencias significativas en las puntuaciones de los síntomas depresivos tras la intervención de Mindfulness. La prueba de correlación mostró que a mayor nivel de escolaridad, menores puntajes de síntomas depresivos en los ancianos. El estudio no permitió verificar los efectos del Mindfulness sobre la depresión ya que la muestra contenía pocos ancianos con signos de depresión, sin embargo, la intervención permitió subrayar la posibilidad de practicar Mindfulness para estimular un estilo de vida saludable en los ancianos.

Descriptores: Atención Plena; Anciano; Salud del Anciano; Depresión; Salud Mental.

Resumo

Objetivou-se investigar os efeitos de *Mindfulness* em idosos e verificar a relação entre EDG e variáveis socioeconômica. Trata-se de um ensaio clínico, com uma amostra de 34 idosos avaliados pré e pós-intervenção selecionados em dois cenários distintos. Participaram desse estudo idosos com 60 anos e mais, de ambos os sexos residentes na cidade de Dourados MS. Para avaliação foram utilizados: questionário sociodemográficos, Escala de Depressão Geriátrica (EDG) e a intervenção proposta foi o protocolo de *Mindfulness-Basead Health Promotion*. A análise descritiva foi realizada por meio de cálculos de frequências e medidas de tendência central e de dispersão. Foi realizado teste t para amostras na comparação do instrumento EDG antes e após a intervenção. Não foram encontradas diferenças significativas nos escores de sintomas depressivos após a intervenção de *Mindfulness*. O teste de correlação mostrou que quanto maior a escolaridade menor são os escores de sintomas depressivos em idosos. O estudo não permitiu verificar os efeitos de *Mindfulness* na depressão já que a amostra continha poucos idosos com sinais de depressão, no entanto, a intervenção permitiu sublinhar a possibilidade da prática de *Mindfulness* para estimular o estilo de vida saudável em idosos.

Descritores: Atenção Plena; Idoso; Saúde do Idoso; Depressão; Saúde Mental.

Introduction

Depression in the elderly is defined as a mental disorder and is the main cause of years lived with disability and a decline in quality of life. Risk factors include, previous history of depression, chronic and brain disease, medication use, psychosocial and stressful life events such as pain, loneliness, unemployment and abuse. Clinical manifestations in this age group can be quite heterogeneous and elderly people often have difficulty expressing their emotions, which may manifest in the form of frequent visits to the medical service, reports of pain, fatigue, insomnia, changes in appetite and increased dependence[1].

It is noteworthy that there is a complex relationship between physical and mental health in general in the elderly, thus, the comorbidities that potentiate depressive symptoms in advanced age are obesity, diabetes, gastroesophageal reflux disease, osteoarthritis, respiratory conditions, Parkinson's disease, Alzheimer's history of cancer and multimorbidities. Among the variables associated with depressive symptoms in the elderly population, female gender, fair/poor and poor perception of health, functional dependence, absence from work, having suffered a fall and hospitalization in the last year stand out[2-5].

In the international context, the prevalence of depression in the elderly diagnosed by physicians in Germany reaches 29.8%. In healthy elderly people living in urban areas, the prevalence of clinically relevant depressive symptoms found in Australia was 20.6% and 20.2% in the United States. In Brazil, the prevalence of depressive symptoms in elderly people living in the rural area of Rio Grande/RS was 8.1%. In Primary Health Care, depressive symptoms in the elderly vary between 25% and 28.1%. When investigating the context of Long Stay Institutions, the proportion rises between 48% and 54.8%[6-12].

The main treatment choice for severe depression in the elderly has been selective serotonin reuptake inhibitors, monoamine oxidase inhibitors and tricyclic antidepressants. In less severe cases, lower doses of medication associated with psychotherapy and physical exercise are indicated[13,14].

A systematic review, which evaluated clinical trials on non-pharmacological methods used in an attempt to control depression in the elderly, showed that the psychotherapy called Problem Adaptation Therapy - PATH, music therapy and the review of the life history of the depressive disorder showed if effective in reducing depressive indices with ($p=0.001$)[15].

New non-pharmacological complementary strategies began to be studied and integrated into the Unified Health System - SUS, as of 2006, with the National Policy on Integrative and Complementary Practices (PICs), which, through an integral and humanized approach, started to contribute to the health care with efficiency and safety in its use (PNPIC - SUS)[16].

Complementary interventions as a proposal to promote mental health contribute to the reduction of anxiety and negative feelings, improve mood, pleasure, encourage the practice of work activities and promote interaction between the user and the professional. PICs support health professionals in care because they promote pain relief, decrease signs and symptoms of diseases and improve quality of life[10,13,17].

Among complementary health interventions, the Mindfulness-based intervention stands out, known for directing attention to the present moment. It was brought to scientific circles by the American molecular biologist Jon Kabat-Zinn in 1970, when he created the stress reduction program at the University of Massachusetts Medical Center. The program was designed to deal with anxiety, stress, pain and illness and is currently inserted in health, education and organizational contexts[18].

Mindfulness-based interventions have been reported by different authors with promising health outcomes. In a randomized clinical trial that followed 42 patients undergoing treatment for substance use disorder, they found that the Mindfulness-based intervention significantly contributed to the reduction of depressive and anxiety symptom scores even after three months of intervention[19].

A study carried out in Canada, with elderly people with mild cognitive impairment, analyzed the effectiveness of an intervention based on Mindfulness. The group that participated in the Mindfulness intervention showed less objective memory decline in the verbal free recall test, a decrease in the number of depressive symptoms and an increase in quality of life[20].

Considering the issue of depression in the elderly, it is pertinent to make efforts to investigate Mindfulness as possibilities for intervention to promote health and prevent depression in the elderly. Thus, this study aimed to evaluate the effects of Mindfulness on predictive signs of depression.

Methodology

This is a before-and-after, uncontrolled clinical trial with quantitative data analysis.

The research was carried out in the municipality of Dourados, Mato Grosso do Sul, with a sample of elderly people recruited in two scenarios: registered at the Reference Center for Social Assistance linked to the Service for Coexistence and Strengthening of Links (SCFV), and participants in the extension Open University for Seniors at the State University of Mato Grosso do Sul – UNAMI/UEMS.

Due to the small number of seniors interested in these two scenarios, the external public was invited through publicity on the State University website and social networks and after previously being evaluated with the eligibility criteria: age equal to or greater than 60 years old and who had physical conditions and health to participate in the intervention were selected.

Elderly, with problems that prevented the performance of activities cognitive disorders, schizophrenia, severe depression, and other mental problems and participants whose frequency, in experimental sessions, was less than 75% were excluded from the study. We ended the study with a sample of 34 elderly.

Mindfulness interventions for the sample took place over two months, with eight weekly meetings in two different locations lasting two hours. It started in August and ended in September for both places where the practices took place, however, in different years, the first (CRAS elderly) in 2018 and the second (UEMS elderly) in 2019.

The tests that assessed depressive symptoms and socioeconomic conditions were administered in two moments, the first before the beginning of the intervention in July and four weeks after the end of the intervention in November (follow-up).

This research was approved by the Research Ethics Committee (CEP) of the Federal University of Mato Grosso do Sul - UFMS, under opinion nº 2,746,065. The survey was also included in the Brazilian Clinical Trials Registry (REBEC) and can be located using the RBR-2ksw7mc indicator.

Participants who accepted the terms and conditions of the research signed the Free and Informed Consent Form (TCLE). To collect the personal data of the participants, a sociodemographic questionnaire was used and to assess depressive symptoms, the Geriatric Depression Scale (GDS) was used, a short version of 15 items, validated in Brazil[21].

The intervention activities followed the MBHP protocol developed in eight meetings. In the first meeting, the group presented their expectations, how the activities would be conducted and agreements regarding the exchange of experiences. Then, specific mindfulness practices began, such as "raisin mindfulness" and "body scanning". The first offers an opportunity for seniors to understand how much they live on autopilot and how much it is possible to be mindful of simple processes such as eating. The second presents a way of directing attention to body parts.

From the second to the eighth meeting, Mindfulness practices of breathing, daily life, for challenging situations, thoughts, practice of silence, compassion and for life were discussed. All exercises have their particularities, but they are a way of doing something with full attention, without judgments, without intellectual elaboration and attentive to the act. In all practices, participants shared their experiences and received feedback from instructors and guidance for daily notes and exercises at home.

Data analysis was performed using the Minitab 18 software (Minitab Inc.) with descriptive analysis of the sample characterization variables, application of the Spearman correlation test to correlate the instrument scores with the continuous variables of sample characterization. Application of the t test for paired samples before and after the intervention, Analysis of variance (ANOVA) with Tukey's test to compare the instrument scores, and finally the Spearman correlation test to correlate the GDS scores with the sample characterization. For the tests, a significance level of 5% was applied[22].

Results

Initially, 50 elderly people were selected. Of these, one, despite his participation in all meetings, was unable to understand the practices due to cognitive difficulties and was therefore excluded from the research, an elderly woman did not return for the last interview and was not found by the researcher. During the course, fourteen seniors did not meet the limit of absences and were excluded from the study, reducing the sample to 34 people.

It was found that the majority were female (n=29; 85.29%), Catholic (n=23; 67.65%), widows (n=10; 29.41%) and with two to three living children (n=17; 50%). None of the 34 seniors (n=100%) use antidepressants. Other sociodemographic results are presented in Table 1.

The mean age of the evaluated elderly was 66.21 years old, with a standard deviation of 6.06 years old and a median of 64.50 years old. Maximum reported age was 80 years.

Table 1. Frequency distribution of sociodemographic variables. Dourados, MS, Brazil, 2020

Variables	N	%
Gender		
Feminine	29	85,29
Male	05	14,71
Marital status		
Married	16	47,06
Separate	04	11,77
Not married	02	5,88
Stable union	02	5,88
Widower	10	29,41
Number of children born		
Up to 1 child	04	11,76
2 to 3 children	17	50,00
More than 3 children	13	38,24
Number of living children		
Up to 1 child	04	11,76
2 to 3 children	19	55,88
More than 3 children	11	32,35
Religion		
Catholic	23	67,65
Spiritist	4	11,76
Evangelical	5	14,71
Seicho-no-ie	2	5,88

Practice religion		
No	4	11,76
Yes	30	88,24
Lifetime occupation		
Management	2	5,88
Business	2	5,88
Education	9	26,47
Health	2	5,88
Others	19	55,89
Current Occupation		
Retiree	15	44,12
Business	2	5,88
Housewife	10	29,41
Others	7	20,59
Economic activity		
Active	10	29,41
Inactive	24	70,59

The average education of the participants was 10.5 years with a standard deviation of 5.72 years and a median of 13.0 years. The coefficient of variation (CV) of this distribution was 54.5%, which means high dispersion, since there were illiterate elderly people, as well as those who had completed 17.0 years of schooling. The average widowhood period was 10.77 years with a standard deviation of 11.33 years and a median of 10.00 years. The minimum widowhood period was less than 6 months and the maximum was 40.0 years.

According to the depression severity index of all participants, before the intervention, 32 (94.2%) were normal, 2 (5.8%) had symptoms of depression, one mild and the other severe. After the intervention, 34 (100%) had no symptoms of depression. It should be noted that before the intervention, 5 (14.7%) scored five points on the geriatric depression scale, which is the limit between having or not having symptoms.

The mean GDS score before the intervention was 2.59 (± 2.19) median 2.00 and after the intervention the mean was 2.00 (± 1.59) median 2.00, p=0.259 of this Thus, there was no statistically significant difference between before and after the intervention.

Table 2 shows the results of the GDS score descriptive statistics after the intervention related to the sample characterization variables.

Table 2. Descriptive statistics of GDS scores in relation to sample characterization variables. Dourados, MS, Brazil, 2020

Sample characterization		EDG Score			Value *p*[1]
		N	Average ± SD[3]	Md[4]	
Sex	Feminine	29	2,03 ± 1,59	2,00	0,794
	Male	5	1,80 ± 1,78	1,00	
Marital status	With partner	17	2,11 ± 1,69	1,00	0,674
	No partner	17	1,88 ± 1,53	2,00	
Number of living children	Up to 1 child	4	2,00 ± 1,41	2,50	0,099[2]
	2 to 3 children	19	1,52 ± 1,46	1,00	
	More than 3 children	11	2,81 ± 1,66	3,00	
Religion	Catholic	23	2,21 ± 1,59	2,00	0,260
	Not catholic	11	1,54 ± 1,57	1,00	
Current occupation	Retiree	15	2,06 ± 1,83 ab	2,00	**0,018[2]**
	Business	2	1,00 ± 0,00 b	1,00	
	Housewife	10	3,00 ± 1,05 a	3,00	
	Other services	7	0,71 ± 0,75 b	1,00	
Economic activity	Active	10	0,90 ± 0,73	1,00	**0,001**
	Inactive	24	2,45 ± 1,64	2,50	

Note: [1]P value referring to the t test for independent samples at P<0.05. [2]P value referring to the Analysis of Variance test (ANOVA) at P<0.05. Different letters in the same column differ significantly by Tukey's multiple comparison test at P<0.05. [3]DP: standard deviation. [4]Md: median.

The results in Table 2 show the presence of two cases of significant differences, one of them relating the EDG score to the current occupation (p=0.018) and the other case related to economic activity (p=0.001). Elderly people who work at home as housewives had a significantly higher score compared to patients who work in the sectors of commerce and other services, showing that housewives had a higher number of predictive symptoms of depression than the other patients evaluated.

In addition, it is assumed that the inactivity of the elderly in terms of occupation increases the depressive potential, as the inactive patients had a significantly higher score compared to the active patients (in activity), assuming a greater depressive potential of the inactive patients.

Table 3 shows the results of the correlation of the EDG scores with the continuous variables after the intervention.

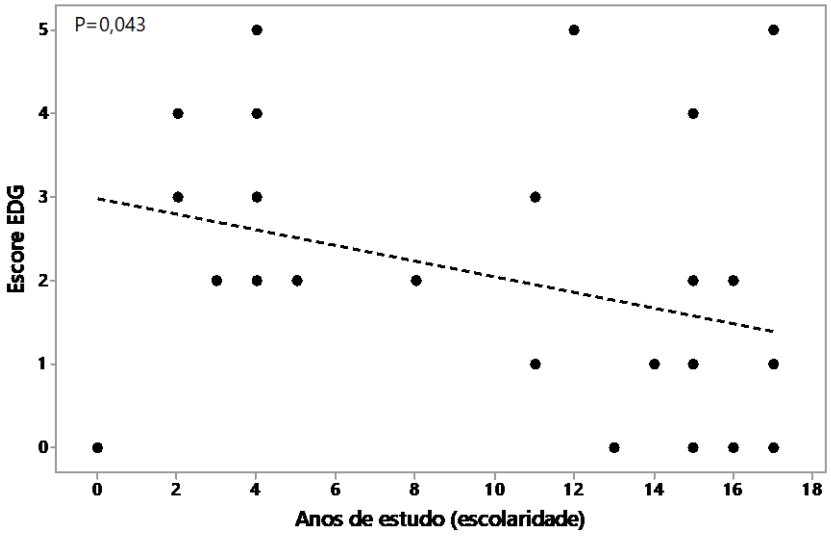
The correlation between the GDS score and education was significant (p=0.043) with a negative and weak correlation coefficient. However, despite the correlation being considered weak, the behavior of the correlation shows (Figure 1) that the higher the education of the evaluated patient, the lower the EDG score.

Table 3. Spearman correlation coefficients (p value) of the GDS score in relation to the continuous sample characterization variables. Dourados, MS, Brazil, 2020

Continuous variables	EDG Score[1]
Age	0,122 (0,494)
Years of widowhood	0,031 (0,863)
Education	**-0,349 (0,043)**

Note: [1] P value referring to the Spearman correlation test at p<0.05.

Figure 1. Correlation between the GDS score and education. Dourados, MS, Brazil, 2021



Discussion

Unlike studies[1,20,23] who identified a reduction in the scores of depressive symptoms in the elderly after intervention with Mindfulness, the present research did not find statistically significant differences after practices for eight weeks. A study in Canada with patients undergoing hemodialysis with symptoms of depression also found no statistically significant effect on depression scores[24].

It is noteworthy that the sample size and the fact that there were few patients with depressive symptoms may have reduced the probability of this sample finding statistically significant results after the Mindfulness intervention. On the other hand, not proving the benefits of the practice does not mean that the results were not satisfactory for the elderly. As an Integrative and Complementary Practice (PIC), the benefits and results of an intervention such as Mindfulness have subjective effects that limit conventional measurements[13].

Traditionally, in the field of health, it is common to consider the best therapy the one with the best statistically proven results, this is due to Cartesian and rational thinking. Practices such as mindfulness and others included in the PIC unify what was once separated, the body, mind, spirituality, social historical context, thus integrating all the dimensions that make up the human being[25].

Considering the need to treat depression in the elderly, it is important for professionals to add options such as Mindfulness and other PIC to conventional treatment in the search for the transformation of their health status. Such approaches aim to stimulate natural mechanisms of prevention and health promotion, since the individual himself becomes aware of his injury, rescuing its underlying cause that may be situated in the social, affective, behavioral dimension experienced at every moment[13,26].

Authors[27] implemented a Mindfulness-based intervention to provide psychological and emotional support to adults with advanced cancer in New Zealand and after the intervention participants reported that they had changed their perspective, from a state of vulnerability to one of self-encouragement, increased optimism and taking of new actions in relation to their health condition, showing that this type of intervention can be used as a support tool in health care.

The search for and adherence to a PIC such as meditation, whether for depression or any other illness, demonstrates the subject's ability to self-manage their health. The literature shows that among the reasons that lead a subject to practice mindfulness meditation, most 81% answered well-being, compared to 30% who mentioned treating specific health conditions. In addition to these, stress management, emotional well-being and support for health behaviors were mentioned. The authors reported that the practice of meditation was mentioned by (81%) of the subjects because it is focused on self-care and (79%) mentioned it because it is focused on the person as a whole[28,29].

Additionally, the present study showed significant differences (p=0.018) in which the elderly women who performed activities at home after the Mindfulness intervention had a significantly higher numerical score of depressive symptoms compared to those who work in the commerce and external services sectors.

This finding evidences a universe lived mostly by females, where housewife work can have consequences for mental health, as it implies a very lonely and closed life, most of the time without social support, with an unfavorable occupational situation, because they are more susceptible to stressful events, as if the home were outside of society. In

addition, the domestic journey is repeated, continuous and invisible to the rest of the family[30].

Authors[25] point out that the fact that "housewives" are always involved with care activities and family responsibilities contributes to their not having enough time to perform a physical activity, perhaps another activity that requires training and discipline.

Reaching the intentional balance of Mindfulness is not possible without regular and sustained practice, so a possible explanation for these "elderly housewives" may have been the lack of time to practice[31].

Mindfulness practices were performed in groups, once a week and lasting two hours. In these meetings, the elderly established a bond, created a weekly routine outside the home, added new friendships to the social circle and occupied their time with thoughts and sensations that were different from the daily routine at home.

Possibly at the end of the practices there was a break in these situations and those elderly people who returned to repeated domestic activities were unable to put their Mindfulness knowledge into practice and returned to their daily thoughts. Added to this, all the pleasant and unpleasant situations that are part of life and the ability to remember everything that was learned.

This study showed significant differences regarding inactive economic activity and GDS scores (p=0.001). A population-based survey also showed that the inactive economic status of elderly residents in the city of Veranópolis, state of Rio Grande do Sul, southern region of Brazil, was significantly associated (p=0.004) with depressive symptoms[32].

Employment can be considered a social protection factor for the elderly, especially when it belongs to a context of social vulnerability, and that is why it is determinant and directly affects their quality of life. It is added that the fact that the elderly have a job contributes to the increase in social interactions, as it expands the type and size of the social network[33,34].

The reinsertion of the elderly into the labor market is still a challenge in Brazil and usually takes place under unfavorable conditions, which leads to evasion. The possibilities of employment for the elderly are smaller, employment relationships are more fragile, require less qualification and, in return, offer lower remuneration, especially for females[35].

The findings contribute to the assumption that depressive symptoms in this specific group of inactive elderly people may be related to the difficulty that the elderly have in managing excess time, which was not common before. In addition, there are moments of sadness arising from changes in the elderly's social life and/or lifestyle, and just like housewives, not supporting Mindfulness practices compromises the change to a new lifestyle[36].

This investigation also found a correlation between the EDG score and education (p=0.043) and despite the weak correlation, there are several risk markers for the elderly and low education is one of them, as it is associated with a greater number of comorbidities, when longer treatment time and the number of consultations performed[37].

The result is consistent with an investigation at a medical center in Taiwan that sought to compare the prevalence and factors associated with depressive disorder among elderly people with head, neck and lung cancer, where it was shown that a high educational level was negatively associated with depression (OR =0.77; CI 95%, 0.66 to 0.91)[38].

Education may have protective effects against memory impairment related to depression in the elderly, especially when the individual goes beyond elementary school. This claim is supported by the findings of a study that tested whether education can moderate the negative effect of depressive mood on memory performance in elderly women residing in the Seoul community of South Korea[39].

Although economic inactivity, low education and other determinants influence the occurrence of depressive symptoms and depression in the elderly, it is important to stimulate natural prevention mechanisms. In this sense, mindfulness is considered an innate ability of every human mind and that often becomes "dormant" over time by the stress and distractions of contemporary society. It can be redeemed through learning and daily practice. For this, it is necessary understanding and reflection that may be influenced by the individual's schooling.

The fact that older adults with higher levels of education have lower GDS scores after the intervention raises the question of a social and structural problem in the reality of Brazilian elderly people, who, despite all the individual effort in self-management of their lives, are faced with obstacles the absence of formal education that would enable the development of cognitive strategies to organize and retain information, as well as skills to carry out practices, such as concentration and internal motivation.

Conclusion

No statistically significant differences were found when comparing the scores of depressive symptoms of the elderly after intervention with Mindfulness. Significant differences were found in relation to the current occupation of the elderly "Housewife" and economic activity "Inactive". Elderly people with higher education had lower scores of depressive symptoms after the Mindfulness intervention, as demonstrated by the correlation test.

The limitations of this research are related to the sampling process which, as it is based on non-probabilistic selection, reduces the representativeness of the results obtained. To reduce the impact of this limitation, the recruitment of the elderly took place in two different settings in Dourados. Another limitation concerns the sample size and especially the number of people identified as being depressed, reducing the inference capacity.

Thus, this study was not enough to demonstrate the potential of Mindfulness in depressive symptoms, but it allowed to underline the possibility of the practice to stimulate a healthy lifestyle in the elderly, in addition, in elderly people with higher education, it can have a beneficial influence on the related to depressive symptoms.

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