

Quality of life, health and work of elementary school teachers

Qualidade de vida, saúde e trabalho de professores do ensino fundamental

Calidad de vida, salud y trabajo de docentes de educación primaria

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Descritores

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Abstract

Objective: To evaluate the quality of life of elementary school teachers and compare it with socio-demographic factors, functional status, voice disorders, common mental disorders and musculoskeletal symptoms.

Methods: Cross-sectional study with elementary school teachers from the municipal education system in the state capital of Mato Grosso, selected by probability sampling. The research instruments used were: World Health Organization Quality Life-BREF (WHOQOL-BREF), Condition of Vocal Production – Teacher, Screening Index for Voice Disorder, Self-Reporting Questionnaire, and Nordic Musculoskeletal Questionnaire. Descriptive statistics of frequency, central tendency, dispersion and inferential analyzes were performed with Wilcoxon, Mann-Whitney and Kruskal-Wallis tests, with a significance level of ≤ 0.05 .

Results: Data from 326 teachers, with a mean age of 43.01 years and 87.12% female were analyzed. In a general analysis of quality of life levels, the lowest median observed was in the “environment” domain (53.13; $p < 0.001$). Some domains of the WHOQOL-BREF presented differences in relation to gender, level education, commuting time, workload, employment bond and musculoskeletal complaints. The presence of voice disorder and common mental disorder was associated with significant statistical differences in all domains and in the two general questions of WHOQOL-BREF.

Conclusion: Quality of life presented lower scores in the “environment” domain and some domains presented differences in relation to gender, level of education, commuting time, workload and employment bond. Presence of vocal disorders, common mental disorders, and complaints of musculoskeletal symptoms affect teachers’ quality of life.

Resumo

Objetivo: Avaliar a qualidade de vida de professores do ensino fundamental e comparar com fatores sociodemográficos, situação funcional, distúrbios de voz, transtornos mentais comuns e sintomas osteomusculares.

Métodos: Estudo transversal com professores do ensino fundamental da rede pública municipal na capital do Estado de Mato Grosso, selecionados por amostragem probabilística. Os instrumentos de pesquisa foram: *World Health Organization Quality Life-bref* (WHOQOL-bref), *Condição de Produção Vocal do Professor*, *Índice de Triagem de Distúrbio de Voz*, o *Self-Reporting Questionnaire* e o *Nordic Musculoskeletal Questionnaire*. Foram realizadas estatísticas descritivas de frequência, tendência central e dispersão e análises inferenciais com testes de *Wilcoxon*, Mann-Whitney e Kruskal-Wallis, nível de significância $\leq 0,05$.

Resultados: Foram analisados os dados de 326 professores, com média de idade de 43,01 anos e 87,12% do sexo feminino. Em análise geral dos níveis de qualidade de vida, a menor mediana foi observada no

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domínio “meio ambiente” (53,13; $p < 0,001$). Em alguns domínios do WHOQOL-bref houve diferenças entre grupos quanto ao sexo, escolaridade, tempo de deslocamento casa/trabalho, carga horária e vínculo empregatício e queixas osteomusculares. A presença de distúrbio de voz e de transtorno mental comum indicaram diferenças estatísticas significativas em todos os domínios e nas duas questões gerais do WHOQOL-bref.

Conclusão: A qualidade de vida apresentou menores escores no domínio “meio ambiente” e alguns domínios diferiram quanto ao sexo, escolaridade, tempo de deslocamento da casa para trabalho, carga horária e vínculo empregatício. As presenças de distúrbio de voz, transtorno mental comum e queixas de sintomas osteomusculares afetam a qualidade de vida dos professores.

Resumen

Objetivo: Evaluar la calidad de vida de docentes de educación primaria y realizar comparaciones con factores sociodemográficos, situación funcional, disturbios vocales, trastornos mentales comunes y síntomas osteomusculares.

Métodos: Estudio transversal con docentes de primaria de escuelas públicas municipales de la capital del estado de Mato Grosso, seleccionados por muestreo probabilístico. Los instrumentos de investigación fueron: *World Health Organization Quality Life-bref* (WHOQOL-bref), Condición de Producción Vocal del Docente, Índice de Clasificación de Disturbios Vocales, *Self-Reporting Questionnaire* y *Nordic Musculoskeletal Questionnaire*. Se realizaron estadísticas descriptivas de frecuencia, tendencia central y dispersión y análisis inferenciales con pruebas de Wilcoxon, Mann-Whitney y Kruskal-Wallis, nivel de significación $\leq 0,05$.

Resultados: Fueron analizados los datos de 326 docentes con edad promedio de 43,01 años y un 87,12% de sexo femenino. En el análisis general de los niveles de calidad de vida, la menor mediana se observó en el dominio “medio ambiente” (53,13; $p < 0,001$). En algunos dominios del WHOQOL-bref hubo diferencias entre grupos en cuanto al sexo, escolaridad, tiempo de desplazamiento casa-trabajo, carga horaria y vínculo laboral y quejas osteomusculares. La presencia de disturbios vocales y de trastornos mentales comunes indicaron diferencias estadísticas significativas en todos los dominios y en las dos preguntas generales del WHOQOL-bref.

Conclusión: La calidad de vida presentó menor puntuación en el dominio “medio ambiente” y algunos dominios se diferenciaron respecto al sexo, escolaridad, tiempo de desplazamiento de la casa al trabajo, carga horaria y vínculo laboral. La presencia de disturbios vocales, trastornos mentales comunes y quejas de síntomas osteomusculares afectan la calidad de vida de los docentes.

Introduction

Quality of Life (QoL) is defined as “as the individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns”.⁽¹⁾ As the QoL affects general aspects of life, it is necessary to recognize its relevance in order to promote the development of health promotion strategies by health care professionals and public managers.^(2,3)

Work is considered a social determinant in the illness process; therefore, there is a concern with articulation between health, subjectivity and social context and broader factors, such as QoL.⁽⁴⁾ The work of the teacher is considered a complex activity with continuous demands (physical, mental, social and spiritual) that affect the perception of QoL.⁽⁵⁾

A considerable number of Brazilian teachers showed a negative perception of QoL, demonstrating the importance of studies that address this reality.⁽⁵⁻⁷⁾ Literature has presented some factors associated with this outcome, such as: workload;⁽⁸⁾ use of voice;⁽⁹⁾ musculoskeletal symptoms;⁽¹⁰⁾ economic class;⁽¹¹⁾ presence of noise, intolerance to noise, anxiety and headache.⁽¹²⁾ Moreover, precari-

ous working conditions, which include poor infrastructure, low salaries, high number of students in the classroom and devaluation of their work by society may predispose to physical and mental health problems and affect health condition, leading to higher rates of absenteeism and illness among education professionals.^(13,14)

In this sense, it is necessary to increase the contributions of nursing knowledge and take on the challenge of acting in care in different production processes from the perspective of prevention, surveillance and promotion of worker health.⁽¹⁵⁾ Thus, the objective of this article is to evaluate the QoL of elementary school teachers of the municipal education system and compare it with socio-demographic factors, functional situation, voice disorders, common mental disorders and musculoskeletal symptoms.

Method

This is a cross-sectional study conducted with elementary school teachers of the municipal education system of the state capital of Mato Grosso, Brazil. The estimated population in 2017 was 1,317 teachers working in 75 schools in the urban area.⁽¹⁶⁾

The stratified probabilistic sampling method was used to select the sample in four administrative regions of the city, North, South, East and West. After stratification, 21 schools were systematically and randomly selected: five from the North, six from the South, six from the East and four from the West.

The following parameters were used to determine sample size: the population size, unknown prevalence of the outcome (50%), a confidence level of 95% ($z_{\alpha/2} = 1.96$) and a sampling error of 5%.⁽¹⁷⁾ To ensure representativeness, an approximate sample of 298 plus 35% due to possible losses was obtained, totaling 403 teachers.

All teachers in professional practice were included; those who were on a different function, vacation, leave or absent during data collection were excluded.

Data were collected from September to December 2017 and all teachers were invited to participate. Those who signed the Informed Consent Form were given a self-administered questionnaire to return the following day. The participant who did not return the questionnaire after two contacts, on different days, was considered as a dropout.

For this research, the self-administered questionnaire consisted of a compilation of five validated instruments: World Health Organization Quality of Life-BREF (WHOQOL-BREF);⁽¹⁾ Condition of Vocal Production – Teacher (CPV-P);^(18,19) Screening Index for Voice Disorder (ITDV);⁽²⁰⁾ Self-Reporting Questionnaire (SRQ-20);^(21,22) and Nordic Musculoskeletal Questionnaire (NMQ).⁽²³⁾

The WHOQOL-BREF, from the World Health Organization (WHO), assesses QoL with two general questions (one about the individual's perception of QoL and another one about their health satisfaction) and 24 questions related to the four domains evaluated (physical health, psychological, social relationships and environment).^(1,2)

The questions on socio-demographic data, functional situation, school environment, work organization, vocal aspects and lifestyle were mainly proposed by the CPV-P instrument;^(18,19) the presence of vocal disorders was also estimated (ITDV);⁽²⁰⁾ questions addressing Common Mental

Disorders (CMD) were assessed by the SRQ-20 instrument, proposed by the WHO;^(21,22) and the NMQ included questions evaluating musculoskeletal symptoms.⁽²³⁾

In the present study, the dependent variables were the WHOQOL-BREF QoL domains and QoL questions, in their own syntax, according to WHO guidelines.^(1,2) The final scores were classified in a scale from zero (0) to 100, in which higher scores indicated better QoL.^(1,2)

The independent variables included in this study were related to socio-demographic characteristics, functional status and health conditions. The socio-demographic variables were: gender, age, civil status, level of education, commute time; the variables related to the functional situation were: time of profession, employment bond with the school, number of schools in which the teacher works and number of hours in class per week.

The variables related to health conditions were presented based on the cut-off points adopted in the literature. In the ITDV instrument, the presence of voice disorder was determined by the cut-off value of five points in a scale from 0 to 12, for those who reported (“sometimes” and “always”) symptoms suggestive of vocal disorder.⁽²⁰⁾ The presence of CMD, according to the SQR-20 instrument, was determined by the cut-off score of eight or more positive items.⁽²²⁾ Regarding complaints of musculoskeletal disorders, the variables considered were dichotomous (yes; no), regardless of body segment, in the last 12 months and the last seven days.⁽²³⁾

The questionnaires were coded and the data were typed twice and compared using the Epi Info® program. The database was processed using the SPSS® version 20 program. Descriptive statistical analysis of frequency, central tendency and dispersion was performed, as well as inferential analysis of QoL domains and independent variables. Normal distribution was verified through the Shapiro-Wilk test, which showed that the scores of the domains had asymmetrical distribution. Thus, nonparametric techniques were used in data analysis: Wilcoxon test and Mann-Whitney test (two categories) and

Kruskal-Wallis test (three or more categories). In the latter case, Dunn's post hoc test was applied to compare pairs. A level of significance of ≤ 0.05 was established for hypothesis testing. Filling 80% of the WHOQOL-BREF instrument was the inclusion criterion for the analysis.^(1,2)

The project was approved by the Research Ethics Committee of the Júlio Muller University Hospital (CEP-HUJM) protocol No. 1,742,299 and 2,179,808..

Results

A total of 332 teachers returned the questionnaire. Of these questionnaires, 326 were properly completed and were analyzed. The socio-demographic profile revealed a mean age of 43.01 years (SD = 9.31), with a predominance of female participants (87.12%), living with spouse/partner (62.70%) and with a graduate degree (74.23%).

Regarding the professional aspects: 58.95% worked in a single school; most were hired (54.60%) and permanent employees (45.40%); had been working for ≤ 9 years (38.94%), between 10-19 years (29.28%) and for ≥ 20 years (31.78%). Regarding the time they were in contact with students, 42.14% reported working ≤ 20 hours, 45.28%

worked between 21-40 hours and 12.58% worked >40 hours.

Since the data were nonparametric, median values were used to describe the scores of the teachers' QoL assessment. Figure 1 shows the environment domain had lower median scores ($p < 0.001$), compared to the physical health, psychological and social relationships domains. Questions related to QoL perception and health satisfaction showed greater variability (Figure 1).

The comparison between the mean ranks of each domain and of the two general QoL questions showed no significant differences regarding the categories age group, civil status, number of schools and time of profession. Significant comparisons according to socio-demographic and functional status variables are described in Table 1.

Comparisons of teachers' QoL according to health conditions are described in Table 2, which shows significant statistical differences in all domains and in the two general WHOQOL-BREF questions when associated with voice disorders and common mental disorders. Most domains showed significant statistical differences when compared to musculoskeletal complaints, except for the environment domain for those who reported symptoms in the last 12 months and the perception of QoL, for those who reported symptoms in the last seven days (Table 2).

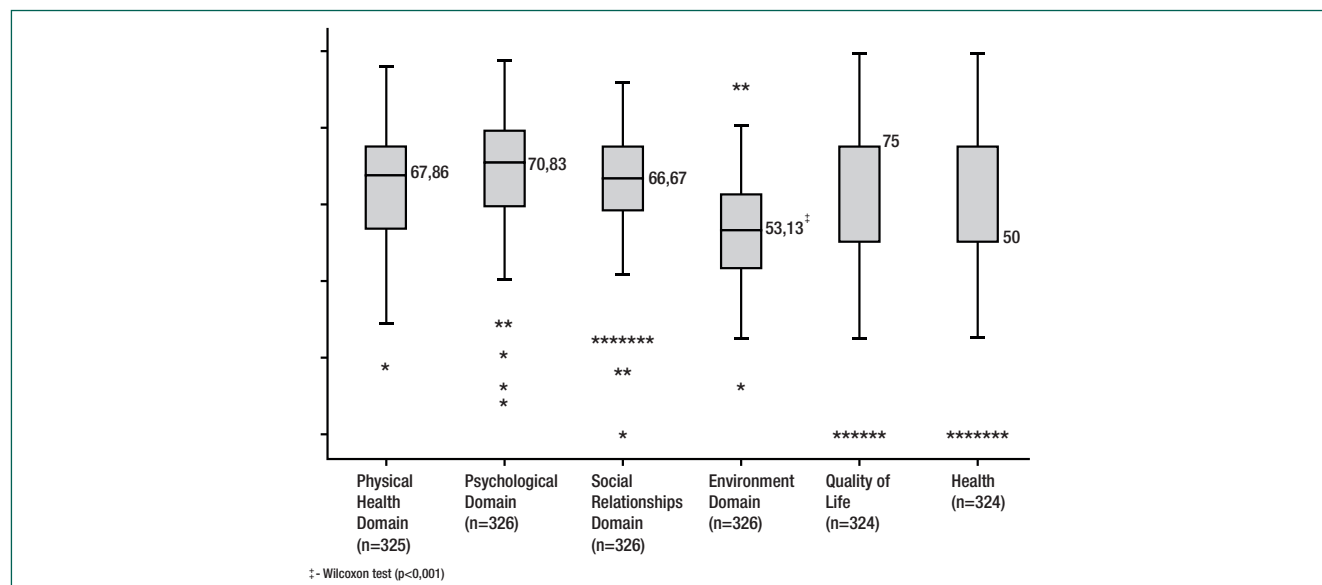


Figure 1. Median of the quality of life scores

Table 1. Comparison of quality of life according to socio-demographic and functional status variables

Variables	Physical Health Domain	Psychological Domain	Social Relationships Domain	Environment Domain	Quality of life	Health
Postos Médios						
Gender						
Male	177.96	190.02	175.38	170.99	177.44	189.49
Female	160.78	159.58	161.74	162.39	160.27	158.48
<i>p</i> *	0.268	0.050	0.375	0.580	0.212	0.034
Level of education						
Graduate studies	161.38	162.43	157.39	161.43	153.00	157.95
Higher education	167.64	166.58	181.09	169.46	190.08	175.49
<i>p</i> *	0.598	0.727	0.044	0.500	<0.001	0.118
Employment bond						
Permanent	146.85	153.23	145.95	162.70	161.69	153.81
Hired	176.50	172.04	178.09	164.17	163.18	169.81
<i>p</i> *	0.005	0.071	0.002	0.888	0.872	0.105
Workload						
≤20hours	174.02‡	169.86	171.81‡	158.71	162.32	167.79
21-40hours	152.64	153.55	155.66	163.40	157.49	149.45
≥40hours	135.56‡	146.21	132.10‡	148.11	149.53	159.96
<i>p</i> †	0.032	0.205	0.041	0.642	0.670	0.209
Commuting time						
≤15 min.	173.81‡	164.93	165.40	175.25‡	169.75‡	174.06‡
16-30 min.	148.22‡	155.38	158.41	155.87	160.85	149.80
≥31 min.	146.95	162.91	155.76	131.40‡	132.06‡	141.03‡
<i>p</i> †	0.042	0.708	0.731	0.008	0.014	0.017

p-(*p*-value); * - Mann-Whitney Test; † - Kruskal-Wallis Test; ‡ Dunn

Table 2. Comparison of quality of life according to voice disorders, common mental disorders and musculoskeletal symptoms

Variables	Physical Health Domain	Psychological Domain	Social Relationships Domain	Environment Domain	Quality of Life	Health
Mean ranks						
Voice disorders						
Absent	195.16	190.99	189.33	190.56	183.16	188.67
Present	134.39	139.19	140.66	139.57	144.02	139.37
<i>p</i> *	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Common mental disorders						
Absent	196.00	194.96	185.82	184.60	174.34	185.05
Present	85.44	89.22	110.81	113.69	133.96	108.93
<i>p</i> *	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Musculoskeletal symptoms in the last 12 months						
No	217.51	204.81	204.19	177.12	182.40	205.00
Yes	145.79	150.51	150.70	159.22	156.19	149.02
<i>p</i> *	<0.001	<0.001	<0.001	0.142	0.015	<0.001
Musculoskeletal symptoms in the last seven days						
No	200.47	189.46	186.38	185.13	170.36	183.36
Yes	124.83	136.89	140.06	141.33	154.35	141.12
<i>p</i> *	<0.001	<0.001	<0.001	<0.001	0.083	<0.001

p-(*p*-value); * - Mann-Whitney Test

Discussion

The findings of this study indicate that teachers' QoL domains are significantly influenced by socio-economic and work characteristics, and mainly by changes in health, such as voice disorders, common mental disorders and musculoskeletal symptoms.

In this perspective, it is considered that the QoL domains (physical health, psychological, social rela-

tionships and environment) have repercussions on general aspects of life, which include satisfaction, experiences, social relations and well-being of an individual and of the community in which they live.⁽²⁾ The influence of health issues on QoL has also been observed in previous studies with teachers.^(6,8-10)

In a general analysis of QoL levels, the lowest median observed was in the environment domain (*p*<0.001), which is related to physical safety and

protection, financial resources, health and social care, transportation, housing, among others. Similar findings were also observed in other studies with Brazilian teachers, with mean values ranging from 53.9% to 61.36%.^(6,8-11)

Previous studies with public school teachers have observed a reduction in the mean of the “environment” domain associated with lower socioeconomic class,⁽¹¹⁾ and found that the higher the family income, the higher the QoL scores.⁽²⁴⁾ A study on the recognition of the work done by Brazilian and French female teachers and its implications on health in different economic and social contexts, showed that among Brazilian women, poor well-being arises especially from precarious conditions of work and devaluation of their work, highlighting the need for salary supplementation.⁽²⁵⁾

In this study, most participants were female, which was also found in other studies and in the school census.^(5,7,16) The analysis of the influence of this variable on QoL showed lower scores in the psychological domain and in health perception among females when compared to males. A study conducted in the state of Paraná found a higher frequency of mental distress among female teachers.⁽²⁶⁾ In addition, the mean scores of the psychological domain were also lower among women in the city of Florianópolis – SC, demonstrating the need to recognize gender differences.⁽⁸⁾

Regarding education, most teachers had a graduate degree, which was also found in another study.⁽¹⁴⁾ There were differences in the social relations domain and in the perception of QoL, in which teachers with graduate studies had lower scores. The discussion on the influence of this variable on the QoL domains is impaired since not all researchers analyzed this topic.⁽⁵⁾ Thus, in-depth studies on the subject in this professional category are necessary, including other aspects related to the teaching career.

This study found that workload and type of employment bond significantly affect the physical and social relationships domains, which present lower values as the weekly workload increases and among permanent teachers. Similarly, a study in the city of Florianópolis-SC found that teachers

with higher workload had worse QoL scores and hired teachers had higher scores, as many of them had contracts of 20 hours or less.⁽⁸⁾ There is also the possibility of considering that teachers with a permanent (stable) employment bond may be older, have a longer career and be exposed to other factors; however, further analysis is needed to investigate these categories.⁽²⁷⁾

The comparison between teachers with a commute time of ≤ 15 minutes and of ≥ 31 minutes showed significant differences in the domains “environment”, “perception of QOL” and “health”. Thus, it is suggested that long commuting time can have social (loss of productivity) and individual repercussions (waste of free time that could be used for health and well-being).⁽²⁸⁾

Few studies have investigated the variable “commuting time” among teachers. A study in a capital in the Northeast Region reported that 65% of teachers did not live in the same neighborhood of the schools in which they worked, but this fact was not associated with QoL domains or other outcomes.⁽¹⁰⁾

A relevant finding in this study was that Common Mental Disorders affected all the quality of life domains. In this regard, it is worth noting that CMD are related to symptoms of depression, anxiety and somatoform disorders, which demonstrates the need for better organization of health services for early identification and for the development of actions to promote mental health.⁽²⁹⁾

A study with public education teachers in the state of Paraná found significant rates of mental health issues, with 44% of depression, 70% of anxiety and 75% of minor psychiatric disorders.⁽²⁶⁾ The literature shows that working conditions such as the intensification of the workload and unsatisfactory and unarticulated health promotion policies perpetuate a cycle of physical and mental illness among these professionals.⁽⁴⁾

Regarding the relationship between vocal health and teachers' QoL, it is possible to observe significantly different lower scores in groups with vocal disorders. In this sense, the authors of a study conducted in the interior of São Paulo found that the worse the teacher's QoL, the worse their vocal self-assessment.⁽⁹⁾

Complaints of voice problems are common among teachers and the most frequently vocal symptoms were hoarseness, dry throat, vocal effort and fatigue when talking.^(30,31) Some aspects should be highlighted in the prevention and treatment of voice problems among teachers: workload, number of students per classroom, school structure, exposure to physical and mental burden, school violence, stress, dust in the workplace and talking while carrying weight.^(30,31)

Still regarding health conditions, teachers with complaints of musculoskeletal symptoms had significant differences in most quality of life domains when compared to teachers who did not report these symptoms. The association between QoL and musculoskeletal symptoms was also evidenced in a study with teachers from the municipal education system of a capital in the Northeast region.⁽¹⁰⁾ The most common musculoskeletal symptoms reported are in the shoulders, upper back, neck, ankles and/or feet.⁽³²⁾

The results presented contribute to the area of nursing by presenting elements related to teachers' QoL that make it possible to rethink health beyond the biological dimension, guiding the construction of a comprehensive care. It is necessary to understand that comprehensive care occurs when interventions are designed based on the recognition of the complexity, potentiality and uniqueness of individuals/groups, so that it is possible to promote equity, enhance health care and reduce vulnerabilities and risks arising from social, economic, political, cultural and environmental determinants.⁽³³⁾ Thus, occupational nursing has an important role in the provision of services and in health protection and health promotion among workers. Occupational nurses can work in collaboration with multi-professional teams and as leaders in the development and management of programs.⁽³⁴⁾

This study has a cross-sectional design and does not allow establishing cause-effect relationships, which can be considered a limitation. There may have been an overestimation of QoL values, as workers on health leave during the collection period did not participate in the study. However, we sought to strengthen the research with a random

and representative sample in terms of school network and geographic location.

Conclusion

The quality of life of elementary school teachers from the municipal education system of the capital of Mato Grosso presented lower scores in the "environment domain". There were significant differences in QoL domains between the groups in relation to gender, level of education, commute time, workload and employment bond. Vocal disorders, common mental disorder and complaints of musculoskeletal symptoms affect teachers' quality of life, as these symptoms are associated with significant differences in most domains and in the perceptions of health and QoL.

Collaborations

Santos EC, Espinosa MM and Marcon SR contributed to the conception, planning, execution of the research; data entry, analysis and interpretation; elaboration and writing of the article; relevant critical review of the intellectual content and final approval of the version to be published.

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