

Self-perceived health and clinical-functional vulnerability of the elderly in Belo Horizonte/Minas Gerais

Autopercepção de saúde e vulnerabilidade clínico-funcional de idosos de Belo Horizonte/Minas Gerais
La percepción de salud y vulnerabilidad clínico-funcional de mayores de Belo Horizonte/Minas Gerais

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ABSTRACT

Objective: To determine the self-perceived health status and clinical-functional vulnerability of the elderly attended at a Reference Center of Minas Gerais, Brazil and to evaluate the association between these variables through the Clinical-Functional Vulnerability Index (IVCF-20) instrument. **Method:** This is an epidemiological, retrospective study of 311 medical records. Statistical analyses were performed using the Stata program; the evaluations were by Pearson's Chi-square test and Poisson regression models. **Results:** The majority of the elderly presented negative self-perceived health status (70.10%); there was statistical significance between negative self-perceived health and the variables of mood and recent hospitalization. **Conclusion:** Perceived health status influences the morbidity and mortality of the elderly. Mood disorders and recent hospitalizations directly interfere with active aging.

Descriptors: Self-image; Epidemiology; Perception; Health of the Elderly; Vulnerability in Health.

RESUMO

Objetivo: Conhecer a autopercepção de saúde e a vulnerabilidade clínico-funcional de idosos atendidos em um Centro de Referência de Minas Gerais e avaliar a associação entre essas variáveis através do instrumento Índice de Vulnerabilidade Clínico Funcional (IVCF-20). **Método:** Trata-se de um estudo epidemiológico, retrospectivo de análise de 311 prontuários. As análises estatísticas foram realizadas com auxílio do programa Stata; as avaliações foram feitas através do teste Qui-quadrado de Pearson e modelos de regressão de Poisson. **Resultados:** A maioria dos idosos apresentou autopercepção negativa de saúde (70,10%); houve significância estatística entre a autopercepção negativa em saúde e a variável humor e hospitalização recente. **Conclusão:** As percepções do estado de saúde influenciam na morbimortalidade dos idosos. Os transtornos de humor e internações recentes interferem diretamente no envelhecimento ativo.

Descritores: Autoimagem; Epidemiologia; Percepção; Saúde do Idoso; Vulnerabilidade em Saúde.

RESUMEN

Objetivo: Conocer la percepción de salud y la vulnerabilidad clínico-funcional de mayores atendidos en un Centro de Referencia de Minas Gerais y evaluar la asociación entre esas variables a través del instrumento Índice de Vulnerabilidad Clínico Funcional (IVCF-20). **Método:** Se trata de un estudio epidemiológico, retrospectivo de análisis de 311 prontuarios. Los análisis estadísticos fueron realizados con auxilio del programa Stata; las evaluaciones fueron hechas a través del test Qui-quadrado de Pearson y modelos de regresión de Poisson. **Resultados:** La mayoría de los mayores presentó su percepción negativa de salud (70,10%); hubo significancia estadística entre la percepción de uno mismo negativa en salud y la variable humor y hospitalización

reciente. **Conclusión:** Las percepciones del estado de salud influyen en la mortalidad de los mayores. Los trastornos de humor e internaciones recientes interfieren directamente en el envejecimiento activo.

Descriptores: Propia imagen; Epidemiología; Percepción; Salud del Mayor; Vulnerabilidad en Salud.

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INTRODUCTION

Marked demographic, epidemiological and nutritional transitions have been seen in the last decades in Latin American countries⁽¹⁾. In Brazil, this phenomenon has been occurring in an accelerated way and is characterized, among other aspects, by a reduction in the fertility rate and increased life expectancy of the population. The Brazilian Institute of Geography and Statistics (IBGE) estimates that by the year 2060, Brazil will present an elderly population of approximately 58 million individuals. Currently, one in 10 Brazilians are 60 years of age or older⁽²⁾.

The aging world population is an advance for humanity, but it is also one of the greatest challenges for contemporary public health, since it implies social restructuring to meet the needs of this population group, due to aspects such as: higher prevalence of pathologies and incapacities inherent in the aging process⁽³⁻⁴⁾.

Among the pathologies, the prevalence of Chronic Non-Communicable Diseases (NCDs) is one of the main causes of morbidity and mortality in the population and are related to genetic inheritance and factors such as inadequate diet and sedentary lifestyle⁽¹⁾.

Thus, in order to understand population aging and inherent care demands, a multidimensional assessment is necessary, as it aims to provide better quality of life and health conditions for this population group⁽⁵⁾. Such an evaluation contributes to recognizing the most diverse biopsychosocial demands, values, beliefs, feelings, care needs, as well as sociodemographic, functional and cognitive factors. Thus, actions by a multi-professional team are necessary to meet the needs and individualities of each elderly person⁽⁶⁾.

With aging, the concept of health is modifiable for each individual, since each human being has a self-perceived health, which among the elderly is usually associated with functional capacity, independence, self-esteem and social life^(4,7). The elderly interpret the aging process and bodily illness in different ways, depending on their life history. Studies show that older people with a negative perception of health status have a higher risk of mortality when compared to the elderly who report their health as excellent^(4,8-11).

Self-perceived health status is a concept that has been used in epidemiological research on the health of the elderly, since it is an indicator of quality of life and precedes functional decline and mortality. In addition, self-perceived health is an important indicator of the impact of chronic degenerative diseases on their physical, social and mental well-being⁽⁸⁻⁹⁾.

Thus, this study is justified because, by determining the self-perceived health among the elderly, strategies can be created to investigate the actual health status of the elderly or identify the risk factors that indicate their clinical-functional vulnerability and consequently the creation of a specific and

individualized care plan to provide a better quality of life for the population group under study.

OBJECTIVE

The objective of this research was to assess the self-perceived health status and clinical-functional vulnerability of elderly patients attended at a Reference Center of Minas Gerais, Brazil and to evaluate the association between these variables through the Clinical-Functional Vulnerability Index-20 (IVCF-20) instrument.

METHOD

Ethical aspects

This study is linked to the macro-project entitled "Population aging study: knowing the elderly population of Belo Horizonte" and obtained approval from the Research Ethics Committee of the Federal University of Minas Gerais (UFMG).

Study design, place and period

An epidemiological and retrospective study of medical records was performed using convenience sampling. The study population comprised elderly patients attending a Reference Center in Belo Horizonte, Minas Gerais, Brazil.

The Reference Center was created in 1996 and in 1999 the Nucleus of Geriatrics and Gerontology (NUGG) was created. In 2003, it was recognized by the Ministry of Health, as the first Reference Center on Health Care for the Elderly in Minas Gerais. In 2010, it received new facilities that enabled the expansion and qualification of elderly care and research into the area of aging⁽¹²⁾.

The records of Emergency Care for the elderly were analyzed to perform a multidimensional evaluation, using the IVCF-20 instrument. Data from the medical records were collected during December 2016, referring to consultations in November and December of 2015.

Sample and inclusion and exclusion criteria

In this period, 819 patients were attended. For the composition of the sample of this study, the medical records that met the eligibility criteria were selected: patients referred from primary health care for geriatric and gerontological evaluation; aged 60 or over; of both genders and fully completed IVCF-20 instrument. The medical records of patients with suspected or confirmed diagnosis of dementia using Clinical Dementia Rating (CDR1, CDR2, CDR3) and patients who scored on cognition item 9 of the IVCF20 instrument were excluded (this forgetfulness prevents some daily activity), because these patients present alterations in the level of awareness, sensory perception and thought. Figure 1 presents a flow chart for the study sample selection process.

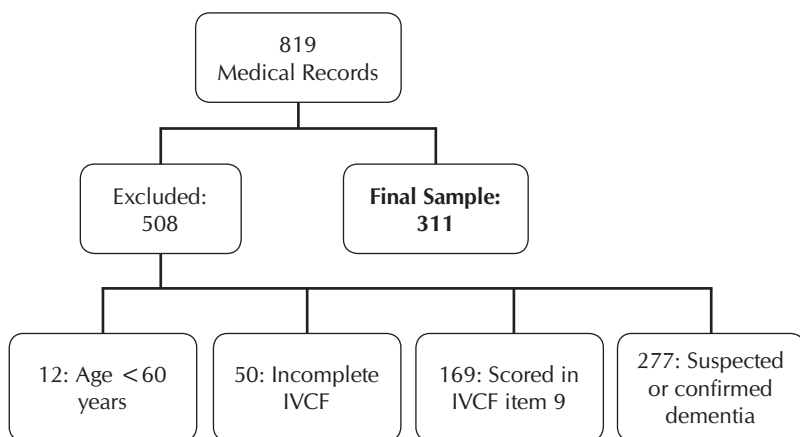


Figure 1 – Final study sample

Study protocol

Data collection used the IVCF-20, which was validated in 2014, and is an interdisciplinary screening instrument that contemplates multidimensional aspects of the health condition of individuals aged 60 years or older (age, self-perceived health, daily life activities, cognition, mood, mobility, communication and multiple comorbidities: polypathy, polypharmacy, and recent hospitalization). Each part has a specific score that when combined reaches a maximum value of 40 points. This tool identifies the functional clinical condition of the elderly as robust, at risk of frailty and frail⁽¹²⁾.

The higher the IVCF-20 score, the less favorable the clinical functional condition of the elderly. The classification of the functional clinical condition of the elderly is obtained from the following criteria: score from 0 to 06, the elderly are considered robust and may be accompanied by primary health care; scores from 07 to 14, the elderly are considered to be at risk of frailty, and should be referred for an intermediate multidimensional evaluation to be performed in the primary health care; and scores equal to or above 15 points, the elderly are considered in frail condition and should be referred for secondary health care and follow-up for a preventive, curative or palliative approach⁽¹²⁾.

Section 2 of IVCF-20 evaluates self-perceived health by asking the following question: “In general, compared with other people your age, would you say that your health is excellent, very good, good, regular, or poor?” In the instrument, this variable is dichotomized: patients who report their self-perception in health as excellent, very good or good, score 00 on this item, considering these patients to have a positive self-perceived health; On the other hand, patients who answered that their health is regular or poor score 01, and are considering to have a negative self-perceived health status⁽¹²⁾.

Analysis of results and statistics

The variables used in this study are related to: sociodemographic, clinical and functional issues: age (years); gender (male or female); self-perceived health; instrumental daily life activities (shopping, financial control, housework); basic daily life activities

(bathing alone); functional systems: cognition (forgetfulness), mood/behavior (sadness and lack of interest in previously enjoyable activities), mobility (reach, grasp and pincer grip, aerobic and/or muscular ability, gait, sphincter incontinence) and multiple comorbidities (polypathology, polypharmacy and recent hospitalization).

Statistical analysis was performed using the Stata program, version 14.0. The difference between the frequencies was tested using Pearson’s Chi-square. The frequencies, proportions and 95% confidence intervals (95% CI) of the proportions were calculated for the categorical variables. For the quantitative variables, mean and standard deviation (SD) or median and interquartile range (IQ) were used, due to the asymmetry of the variables.

Finally, to evaluate the association between clinical-functional vulnerability variable(s) (exposure/independent variables) and self-perceived health of the elderly (outcome/dependent variable), Poisson regression models were constructed (considering that the prevalence of the selected outcome in the studied population was frequent), crude and adjusted. The crude and adjusted estimates (by socioeconomic variables - age and sex - according to the theoretical question) were presented and the 95% CI calculated, considering a level of significance of 0.5 ($p < 0.5$) in all analytical procedures. The results were described and presented by means of tables.

RESULTS

According to the results presented in Table 1, of the 311 individuals evaluated, 29.90% characterized their self-perceived health as positive and 70.10% as negative.

Table 2 presents the frequency of IVCF-20 variables related to self-perceived health status in the elderly. The mean age was 77 years, with a prevalence of females (69.45%). Based on the inferential statistics of the variables associated with self-perceived health, a statistically significant association was found with the variables that make up the mood section: in the last months did you feel sadness or hopelessness ($p \leq 0.001$); loss of interest in a previously enjoyable activity ($p = 0.03$), and the variable hospitalization in the last six months ($p = 0.04$).

The significance of negative self-perceived health and the variables of mood and hospitalization in the last six months is highlighted.

Table 1 – Distribution of the elderly patients’ self-perceived health status, Belo Horizonte, Minas Gerais, Brazil, 2015

Self-perceived health	n	%	95% CI
Positive	93	29.90	24.79-35.02
Negative	218	70.10	64.98-75.21
Total	311	100.00	

Note: 95% CI = 95% Confidence Interval

Table 2 – Frequency of Clinical-Functional Vulnerability variables related to self-perceived health status, Belo Horizonte, Minas Gerais, Brazil, 2015

Variables	Self-perceived health		Total n (%)	*p value
	Positive n (%)	Negative n (%)		
Potential adjustments				
Age (years)	77.38 (7.38)	77.07 (8.15)		0.75
Sex				
Male	25 (26.32)	70 (73.68)	95 (30.54)	
Female	68 (31.48)	1.148 (68.52)	216 (69.45)	
Potential exposures				
ADL***** Instrumental				
Prevented from shopping				
No	69 (30.80)	155 (69.20)	224 (100.00)	0.58
Yes	24 (27.59)	63 (72.41)	87 (100.00)	
Prevented from controlling money				
No	80 (30.08)	186 (69.92)	226 (100.00)	0.87
Yes	13 (28.89)	32 (71.11)	45 (100.00)	
Prevented from performing some daily activity				
No	81 (30.22)	187 (69.78)	268 (100.00)	0.58
Yes	12 (27.91)	31 (72.09)	43 (100.00)	
ADL***** Basic				
Stopped bathing alone				
No	87 (30.31)	200 (69.69)	287 (100.00)	0.58
Yes	6 (25.00)	18 (75.00)	24 (100.00)	
Cognition				
Forgetfulness				
No	14 (38.89)	22 (61.11)	36 (100.00)	0.21
Yes	79 (28.73)	196 (71.27)	275 (100.00)	
Worsening of forgetfulness				
No	58 (33.92)	113 (66.08)	171 (100.00)	0.09
Yes	35 (25.00)	105 (75.00)	140 (100.00)	
Mood				
Sadness, or hopelessness				
No	42 (45.65)	50 (54.35)	92 (100.00)	0.001*
Yes	51 (23.29)	168 (76.71)	219 (100.00)	
Loss of interest or pleasure, in previously enjoyable activities				
No	75 (33.33)	150 (66.67)	225 (100.00)	0.03*
Yes	18 (20.93)	68 (79.07)	86 (100.00)	
Reach, grasp, and pincer grip				
Inability to raise the arm				
No	92 (29.87)	216 (70.13)	308 (100.00)	0.89
Yes	1 (33.33)	2 (66.67)	3 (100.00)	
Inability to handle or hold small objects				
No	93 (30.10)	216 (69.90)	309 (100.00)	0.35
Yes	-	2 (100.00)	2 (100.00)	
Aerobic and muscle capacity				
Unintentional weight loss**				
No	34 (28.10)	87 (71.90)	121 (100.00)	0.95
Yes	3 (27.27)	8 (72.73)	11 (100.00)	
Body Mass Index < 22 g/m**				
No	19 (24.05)	60 (75.95)	79 (100.00)	0.21
Yes	18 (33.96)	35 (66.04)	53 (100.00)	
Calf circumference < 31cm**				
No	27 (27.84)	70 (72.16)	97 (100.00)	0.93
Yes	10 (28.57)	25 (71.43)	35 (100.00)	
Gait speed 4 min > 5 sec **				
No	13 (30.23)	30 (69.77)	43 (100.00)	0.69
Yes	24 (26.97)	65 (73.03)	89 (100.00)	

To be continued

Table 2 (concluded)

Variables	Self-perceived health		Total n (%)	*p value
	Positive n (%)	Negative n (%)		
Gait				
Walking difficulties				
No	89 (30.38)	204 (69.62)	293 (100.00)	0.46
Yes	4 (22.22)	14 (77.78)	18 (100.00)	
Two or more falls in the last year				
No	69 (31.65)	149 (68.35)	218 (100.00)	0.3
Yes	24 (25.81)	69 (74.19)	93 (100.00)	
Sphincteral incontinence				
Involuntary loss of urine or feces				
No	41 (31.06)	91 (68.94)	132 (100.00)	0.7
Yes	52 (29.05)	127 (70.95)	179 (100.00)	
Communication				
Vision problems				
No	90 (30.00)	210 (70.00)	300 (100.00)	0.84
Yes	3 (27.27)	8 (72.73)	11 (100.00)	
Hearing problems				
No	92 (29.97)	215 (70.03)	307 (100.00)	0.83
Yes	1 (25.00)	3 (75.00)	4 (100.00)	
Multiple comorbidities				
five or more chronic diseases**				
No	25 (21.55)	91 (78.45)	116 (100.00)	0.41
Yes	14 (27.45)	37 (72.55)	51 (100.00)	
Daily use of five or more different drugs**				
No	3 (42.86)	4 (57.14)	7 (100.00)	0.21
Yes	36 (22.50)	124 (77.50)	160 (100.00)	
Hospitalization in the last six months**				
No	29 (20.57)	112 (79.43)	141 (100.00)	0.04*
Yes	10 (38.46)	16 (61.54)	26 (100.00)	

Note: * $p \leq 0.05$; **"Not applicable" cases were excluded; ***Pearson's chi-square, except for age;**** Mean and SD / Student's simple t-test; ***** ADL: activities of daily living.

Table 3 – Prevalence ratio and Confidence Interval (95% CI) adjusted and non-adjusted for self-perceived health status, Belo Horizonte, Minas Gerais, Brazil, 2015

Clinical-Functional Vulnerability	Outcome	
	Self-perceived health	
	PR (95%CI)*	PR (95%CI)**
Sadness or hopelessness in the last month		
Absent	1.00	1.00
Present	1.41 (1.15-1.72)	1.43 (1.17-1.75)

Notes: PR = Prevalence Ratio; 95% CI = 95% Confidence Interval; *Gross Model; **Model adjusted for sex and age; p value = 0.001 (Poisson Model).

The median of the final score was 11 (IQ = 8-15), with statistically significant differences in the two samples of self-perceived health ($p < 0.01$) (data not shown).

Table 3 presents the analysis of the inferential statistics of the variable sadness or hopelessness associated to the self-perceived health of the elderly. It should be emphasized that the variables age and gender were important adjustment variables.

The results show that the prevalence of elderly people with negative self-perceived health is 1.43 times greater among the elderly who presented feelings of sadness or hopelessness.

DISCUSSION

Studies have underscored that, as the degree of dependence increases, there is a greater decline in functionality as the elderly individuals become frail; the elderly are therefore more likely to perceive their health status as negative⁽¹³⁻¹⁵⁾.

The health of the elderly is manifested by their capacity to achieve aspirations and the satisfaction of needs; consequently, well-being and functionality are equivalent, both being determinants in self-perceived health among this population⁽¹⁵⁾.

Self-perceived health in the elderly is an important indicator of the general health conditions of this population⁽¹⁶⁾. In the present study, the majority of elderly subjects presented a negative perception of their health (70.1%). These results are corroborated by other studies, which report that the negative perception of health in the elderly is mainly related to loss of autonomy and functional decline⁽¹⁷⁻¹⁹⁾.

In a study carried out in Campinas, São Paulo, the results showed that the majority of the elderly reported health of intermediate quality (50%) or good (31.8%)⁽⁸⁾. These results are similar to those presented in the research conducted in Bambuí, Minas Gerais, in which the elderly defined their health as good or reasonable (24.7%)⁽⁴⁾.

Nevertheless, the elderly can also perceive their health status as positive⁽²⁰⁻²¹⁾. Study results show that 81% of the elderly have a positive self-perceived health; however, it is worth noting that the sample of the elderly in this study was independent in terms of daily living activities and considered as robust elderly individuals, which could be associated with the reports of positive self-perceived health⁽²²⁾.

The difference in the results between the self-perceptions of the aforementioned studies can be explained by different answer options in the questions regarding self-perceived health and the method of categorization, which is not homogeneous. In addition, there may be differences between the regions studied, in terms of socioeconomic, demographic, and functional class variations in relation to the sample studied, which could affect the clinical-functional vulnerability of the elderly⁽²⁰⁾.

In the literature, the classifications for self-perceived health are different: good, fair or poor; and positive or negative. Thus, each author adopts the classification according to the theoretical framework used in their particular study.

The factors that may interfere in the elderly's perceived health include: age, sex, chronic health conditions, family and social support, functionality, and lifestyle. The physical, psychological, emotional and social problems also negatively reflect their performance of functions and, consequently, their self-perceived health⁽⁴⁾.

With increasing age, individuals tend to present more health problems, such as disabilities and prevalence of chronic diseases, which contribute to negative self-perception of health. Regarding gender, negative self-perceived health status was higher among women; this result is similar to that found in the study, in which there was a higher presence of comorbidities and depression in the female subjects, when compared to the males⁽⁹⁾.

The elderly with chronic diseases may report their health as negative⁽⁷⁻¹⁶⁾. However, these results are inconsistent with other studies, in which elderly individuals with up to three chronic diseases, when controlled and asymptomatic, may consider their health to be positive^(4,14).

In the present study, the factors that were significantly associated with negative health perception among the elderly were: hospitalizations in the last six months and mood, specifically sadness and loss of interest in performing activities. The association of these variables to negative self-perceived health in the elderly can be attributed to the inclusion of these items in the IVCF-20, since, for the creators of this instrument, the presence of these variables suggests greater clinical-functional vulnerability of the elderly⁽¹²⁾.

In a previous study, the number of prior medical consultations and hospitalizations had statistical significance with poor self-perceived health in the elderly⁽¹⁶⁾. For the elderly, recent hospitalizations and restrictions in the hospital environment may have an impact on their health, thereby compromising their functionality⁽²³⁾.

It is also possible to cite that the negative self-perception by the elderly hospitalized in the last six months can be related, among other factors, to non-guarantee of the resolution of their health needs, especially when these are related to the decompensation of chronic conditions. Chronic disease and

functional disabilities of the elderly result in a greater and prolonged use of health services and hospitalizations⁽¹⁵⁾.

Regarding mood, the results showed a significant association with negative self-perception of health; these data are compatible with other studies⁽²⁰⁻²⁴⁾. The mood variable is associated with mental functions, such as level of awareness, sensory perception and thought, as well as the motivation necessary for activities or social participation of the elderly. Thus, mood is considered an indispensable function in the preservation of autonomy, as it is important for the maintenance of functional capacity⁽¹²⁾.

It should be kept in mind that worsening of mood or low motivation ranges from isolated sadness to major depression⁽¹⁵⁾. Depressive disorder is much more than a period of sadness, pessimism, low self-esteem or depression, following a loss or a drastic change in life. It is an emotional alteration that is associated with a high risk of morbidity and mortality⁽²⁵⁾.

However, the symptoms referred to above are often under-reported or even ignored by health professionals because they believe that these manifestations are due to the aging process itself. The evaluation of mood is of paramount importance in the self-perception of the health of the elderly, since their perspective on personal health is relevant to their well-being⁽²⁵⁾.

Therefore, the multidimensional evaluation should investigate the social, emotional and functional aspects of the elderly in relation to the preservation of autonomy and independence. For this, the establishment of bonding and interaction favors the construction of a receptive relationship, mainly in the identification of subjective data related to the health of the elderly. Consequently, evaluating the self-perceived health status is fundamental in the construction of a specific care plan for each individual.

Thus, the actions taken in face of the physical, social and especially the psychological needs of the elderly will be directed to the promotion of active and healthy aging—as advocated by the National Policy on the Elderly⁽²⁶⁾.

Limitations of the study

It is important to consider some limitations of this study, such as the use of convenience sampling, research with a single sample group, and the use of a relatively new instrument (IVCF-20).

Contributions to the area of nursing and public health

The study points out significant contributions to the knowledge of Nursing in Gerontology. It will contribute to the structuring of health care policies for the elderly via the incorporation of tools that take into account the self-perception of health status and the clinical-functional vulnerability of the elderly.

CONCLUSION

In the present study there was a prevalence of females and the majority of these elderly individuals characterized their health status as negative. The relationship of negative self-perceived health status with mood variables and recent hospitalization in the IVCF-20 instrument is highlighted. Such a relationship may be related to loss of autonomy, functional decline and prolongation of hospital stay, suggesting greater clinical-functional vulnerability of the elderly.

Aging and health status perceptions influence the promotion of the psychological, physical, functional and clinical dimensions, including aspects related to the morbidity and mortality of the elderly.

The need is emphasized for health professionals to consider previous hospitalizations and recognize mood disorders

among the elderly; since these items can interfere directly in the functional capacity, independence and autonomy of this age group.

It should also be underscored that evaluation by a multi-professional team of the self-perceived health status of the elderly is an important tool to minimize their vulnerability.

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