

Original Article

Sociodemographic and occupational characteristics associated with burnout syndrome in healthcare workers post-COVID-19

Características sociodemográficas e ocupacionais associadas à síndrome de burnout em trabalhadores de saúde no contexto pós-COVID-19

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How to cite: Velasquez Muñoz, A. A., San Martin Santibáñez, R. P., Contreras Muñoz, M. P., & Vicuña Aguayo, E. A. (2024). Sociodemographic and occupational characteristics associated with burnout syndrome in healthcare workers post-COVID-19. *Cadernos Brasileiros de Terapia Ocupacional*, 32, e3825. <https://doi.org/10.1590/2526-8910.ctoAO399438252>

Abstract

This study analyzed the relationship between sociodemographic and occupational characteristics and burnout syndrome among 379 healthcare workers in southern Chile in 2022, using sociodemographic and occupational questionnaires and the Maslach Burnout Inventory. The association between variables was assessed using the chi-squared test (χ^2), and principal component analysis (PCA) was conducted. A burnout prevalence of 8.71% was found, with high levels of emotional exhaustion (41.7%) and low self-realization (40.6%). PCA showed that emotional exhaustion and depersonalization were associated with burnout, whereas self-realization was linked to the absence of this syndrome, suggesting it may be a protective factor. Contrary to expectations, low levels of burnout were observed post-pandemic. Associations were identified between burnout syndrome and factors such as the work environment, type of work, work shift, and caring for people at risk. Emotional exhaustion and lack of self-realization emerged as influential factors. These findings underscore the need for interventions aimed at improving working conditions and fostering psychological well-being in the healthcare sector.

Keywords: Burnout, Healthcare Workers, Pandemic, Sociodemographic Factors, Chile/Epidemiology.

Resumo

O estudo examinou a relação entre características sociodemográficas e ocupacionais e a síndrome de burnout entre 379 trabalhadores de saúde do sul do Chile em 2022,

Received on Mar. 13, 2024; 1st Revision on Apr. 19, 2024; Accepted on June 25, 2024.



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utilizando questionários sociodemográficos, ocupacionais e de Maslach. A associação entre variáveis foi avaliada usando o teste do qui-quadrado (χ^2), e análise de componentes principais (PCA) foi conduzida. Foi encontrada uma prevalência de burnout de 8,71%, com altos níveis de exaustão emocional (41,7%) e baixa realização pessoal (40,6%). A análise de componentes principais (PCA) mostrou que a exaustão emocional e a despersonalização estavam associadas ao burnout, enquanto a realização pessoal estava relacionada à ausência da síndrome, sugerindo um possível fator de proteção. Contrariamente às expectativas, foram observados baixos níveis de burnout pós-COVID-19. Foram identificadas associações entre a síndrome de burnout e fatores como a relação com o ambiente de trabalho, o tipo de trabalho, o turno de trabalho e o cuidado de pessoas em risco. Emergem as dimensões de exaustão emocional e a falta de realização pessoal como fatores influentes. Essas descobertas destacam a necessidade de intervenções destinadas a melhorar as condições de trabalho e promover o bem-estar psicológico no campo da saúde.

Palavras-chave: Burnout, Trabalhadores de Saúde, Pandemia, Fatores Sociodemográficos, Chile/Epidemiologia.

Introduction

Healthcare professionals play a significant role in the care and well-being of patients. However, they also face high levels of work-related stress, which can lead to burnout syndrome. This syndrome involves a series of behavioural, psychological, and physiological dysfunctions that can have negative repercussions for both individuals and the organization (Gil-Monte & Moreno-Jiménez, 2005).

Burnout syndrome was declared an occupational risk factor by the World Health Organization (WHO) in 2000; later in 2019, it was classified as a professional disease (Organización Mundial de la Salud, 2019), describing it as a disorder that emotionally and psychologically affects workers, resulting in a stressful and anxious environment.

Burnout syndrome, also known as burnout syndrome, was introduced by Herbert Freudenberger in 1974 (Aceves et al., 2006). Years later, Maslach & Jackson (1981) defined it as an inadequate response to chronic emotional stress, characterized by physical or psychological exhaustion, emotional depletion, or loss of energy and fatigue, which may manifest physically, psychologically, or as a combination. Additionally, a series of negative responses towards oneself appear, such as low morale, increased irritability, avoidance of professional relationships, low productivity, inability to cope with stress, loss of motivation towards work, and low self-esteem. Based on the studies conducted by these authors, they developed the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), aimed at healthcare professionals.

The COVID-19 pandemic globally generated an overload of the healthcare system and mental, emotional, and physical exhaustion among personnel (Pappa et al., 2020; Chew et al., 2020). In fact, in a study conducted between 2021 and 2022, physicians were surveyed to evaluate burnout syndrome, work-life balance, depression, and professional fulfillment using standard instruments. It was observed that 62.8% of physicians experienced burnout, a significantly higher percentage compared to 38.2% in 2020 (Shanafelt et al., 2022). Moreover, in a review conducted by Coleman et al.

(2021), early-career surgeons and surgical trainees were surveyed to identify factors associated with depression and burnout. The prevalence findings regarding burnout indicate that at least 21% of respondents reported positive symptoms across all areas of burnout assessment. This suggests a high prevalence of burnout among the surveyed individuals, underscoring it as a significant issue impacting a substantial portion of the studied population.

Various studies have reported high levels of emotional exhaustion, lack of self-realization, and depersonalization (Lasalvia et al., 2021; Elghazally et al., 2021). Additionally, this syndrome is associated with states of anxiety, depression, lack of interest in work, and decreased empathy with patients (Castillo-Ávila et al., 2015). Other studies mention that the consequences of burnout are not limited only to the physical and psychological health of workers but also affect the quality of care provided and organizational well-being (West et al., 2018).

However, in order to prevent the symptoms and associated consequences, it is necessary to identify the variables associated with this syndrome. According to psychosocial theories, in addition to personal characteristics, there are variables related to sociodemographic and work conditions. Among them, research mentions age, gender, job category, and workplace, where the relationship with peers and management team is relevant as determinants of the level of exhaustion experienced by staff (Jalili et al., 2021). Other studies add workload and communication skills as factors that may influence the development of the syndrome (Gómez-Urquiza et al., 2016). Another relevant variable to study, especially in the context of a pandemic, is caregiving for people with disabilities. The distress, feeling of isolation or not being accepted, as well as the stigma of not fitting within the norm, is another form of stress commonly experienced by parents of children with disabilities (Currie & Szabo, 2020), where research concludes that they are at high risk of developing burnout syndrome, manifested severely in levels of emotional exhaustion and low self-realization (Arias et al., 2019). In Chile, there are still no studies addressing Burnout syndrome in the current context, much less incorporating all healthcare workers, both clinical and administrative. Therefore, our study aims to analyze the relationship between sociodemographic and work-related characteristics associated with Burnout syndrome among healthcare workers in southern Chile in the post-COVID-19 period, in order to explore new ways to prevent and care for this professional condition and its consequences.

Hence, the objective of this study was to analyze the relationship between sociodemographic and work-related characteristics associated with Burnout syndrome among employees of a public institution in southern Chile during the post-COVID-19 period in 2022.

Methods

This study was an observational cross-sectional study, involving the distribution of an anonymous online survey coordinated by a public university in southern Chile. The study was conducted at a state institution comprising six healthcare centers, both at the secondary and tertiary levels of medical care. It was carried out during the months of May and August 2022, a period of increased incidence of new COVID-19 cases in Chile

(third wave of COVID-19), with the highest healthcare workload and population healthcare needs.

Participants

The sample consisted of 379 employees from a public institution in southern Chile. Included in this study were: physicians, university nurses, psychologists, physiotherapists, nutritionists, medical technologists, midwives, occupational therapists, higher-level nursing technicians (TENS), and administrative staff, such as engineers, secretaries, drivers, warehouse workers, assistants, and maintenance technicians, all of whom were under some form of contract with the healthcare service assistance network.

Data collection

The sampling was conducted using non-probabilistic methods, with the assessment instrument administered online along with informed consent. Initially, the research team visited the 6 healthcare centers to inform them about the study's purpose, followed by notification to all healthcare service employees via email and social media. The survey was conducted between May and August 2022, during the peak period of new COVID-19 cases in Chile, coinciding with the highest healthcare workload and population healthcare needs. From these efforts, 379 valid questionnaires were obtained.

Instruments

To study the presence of Burnout Syndrome (BS) in healthcare personnel, the Maslach Burnout Inventory - Human Service Survey (MBI-HSS) (Maslach & Jackson, 1981) was used, which is validated for Chilean professionals (Olivares-Faúndez et al., 2014). This questionnaire consists of 22 items evaluated on a Likert scale from 0 to 6 points, which is further divided into 3 subscales: emotional exhaustion (EE), composed of 9 items; depersonalization (DP), composed of 5 items; and self-realization (SR), composed of 8 items. For practical purposes, the total score for each dimension can be categorized into three groups: high, medium, and low, where the cutoff points to categorize the degree of each subscale are given by the 33rd and 66th percentiles of their respective score 19. The categories are as follows: EE (low < 20, medium 20-35, high > 35), DP (low < 2, medium 2-6, high > 6), and PA (low < 34, medium 34-40, high > 40). The BS risk categories are: high degree of emotional exhaustion, high degree of depersonalization, and low degree of self-realization (Vega et al., 2017).

To define the presence of burnout syndrome, we followed Maslach's recommendation, which recognizes the presence of BS when there is simultaneously a high level of emotional exhaustion, a high level of depersonalization, and low self-realization.

The sociodemographic characteristics studied included: age, gender, marital status, number of children, profession, caregiving responsibilities for at-risk individuals (people with disabilities, children under 2 years old, older adults). The labor-related characteristics studied were: years of service in the institution, daily working hours, type

of shift (rotating or day shift), department or service, perceived level of difficulty of their role, support perceived from their superiors, and relationship with the work environment.

Ethical aspects

The online survey included consent to participate in the study. This study was approved by the Scientific Ethics Committee of the Valdivia Health Service (ORD.416). All procedures followed ethical standards outlined in the Declaration of Helsinki of 1964 and its subsequent updates.

To preserve the confidentiality of participants beyond the anonymous survey, several measures were implemented due to the sensitive nature of the information. First, the collected data was coded and stored on two computers with restricted access only to the principal investigators. Additionally, any identifiable information was removed or replaced with codes before analysis. Finally, it was ensured that the data remained confidential and was not shared with third parties without the explicit consent of the participants.

Statistical analysis

To analyze the results, the normality of the data was verified using the Shapiro-Wilk test. Descriptive statistical tools were employed, mainly including univariate and bivariate frequency tables. Additionally, proportion parameters were estimated using confidence intervals. To assess the correlation between the variables of interest, the chi-square test (χ^2) was used. These analyses were conducted using SPSS software version 28. Furthermore, multivariate data analyses were performed using principal component analysis (PCA) with GraphPad Prism software version 10.2.1. The level of significance was set at $p < 0.05$.

Results

The sociodemographic and work-related characteristics of the participants who completed the MBI-HSS questionnaire are detailed in Table 1. Among the participants, 28.8% were male, while 71.2% were female. Regarding marital status, 39.8% reported being single, and 32.7% were married. Concerning having children, 68.9% had at least one child. Regarding work tenure, 66.7% of participants had more than five years of experience, while the remaining had less than 5 years. In terms of working hours, 96.6% worked more than 7 hours per day. Regarding the perceived difficulty level in their work, 65.2% of participants considered it high or very high. Regarding the level of support from their supervisors, 40.9% felt normal support, while 38.3% perceived high or very high support. 79.6% perceived a good relationship in their work environment.

Our analysis revealed a prevalence of Burnout syndrome of 8.7% (Table 2). Regarding the dimensions of Burnout syndrome, emotional exhaustion accounted for 41.7%, while 61.7% showed low depersonalization (Table 2). Additionally, 40.6% expressed a high level of self-realization (Table 2). These results are consistent with those obtained through Principal Component Analysis (PCA) (Figure 1).

Table 1. Sociodemographic and Occupational Characteristics of Healthcare Workers.

| Variables | n (%) |
|---|--------------|
| Gender | |
| Male | 109 (28.8%) |
| Female | 270 (71.2%) |
| Marital Status | |
| Married | 124 (32.7%) |
| Living together | 67 (17.7%) |
| Divorced | 23 (6.1%) |
| Separated | 12 (3.2%) |
| Single | 151 (39.8%) |
| Widowed | 2 (0.5%) |
| Having children | |
| Yes | 261 (68.9%) |
| Not | 118 (31.1%) |
| Years of Seniority | |
| < 1 Year | 29 (7.7%) |
| Between 1 Year and 4 Years 11 Months | 97 (25.6%) |
| ≥ 5 Years to 14 Years | 190 (50.1%) |
| ≥ 15 Years | 63 (16.6%) |
| Daily Working Hours | |
| < 1 hour | 3 (0.8%) |
| Between 1 hour and 3 hours 59 minutes | 1 (0.3%) |
| Between 4 hours and 6 hours 59 minutes | 9 (2.4%) |
| Between 7 hours and 9 hours 59 minutes | 232 (61.2%) |
| > 10 hours | 134 (35.4%) |
| Difficulty Level of Work | |
| Low | 3 (0.8%) |
| Normal | 129 (34%) |
| High | 161 (42.5%) |
| Very High | 86 (22.7%) |
| Level of Supervisor Support | |
| Very Low | 29 (7.7%) |
| Low | 50 (13.2%) |
| Normal | 155 (40.9%) |
| High | 84 (22.2%) |
| Very High | 61 (16.1%) |
| Relationship with Work Environment | |
| Poor | 11 (2.9%) |
| Fair | 66 (17.4%) |
| Good | 209 (55.1%) |
| Excellent | 93 (24.5%) |

Note. n: number of participants. (%): frequency of participants.

Table 2. Dimensions and Presence of Burnout Syndrome in Healthcare Workers.

| Variables (Dimensions) | n (%) |
|----------------------------------|-------------|
| Emotional Exhaustion | |
| Low | 129 (34%) |
| Intermediate | 92 (24.3%) |
| High | 158 (41.7%) |
| Depersonalization | |
| Low | 234 (61.7%) |
| Intermediate | 67 (17.7%) |
| High | 78 (20.6%) |
| Level of Self-realization | |
| Low | 99 (26.1%) |
| Intermediate | 126 (33.2%) |
| High | 154 (40.6%) |
| Presence of Burnout | |
| Not | 346 (91.3%) |
| Yes | 33 (8.7%) |

Note. n: number of participants. (%): frequency of participants.

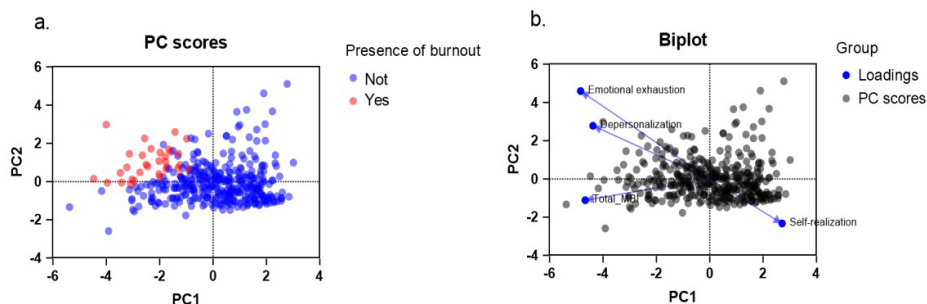


Figure 1. Principal component analysis (PCA). PC scores (a) and biplot (b) using the first two principal components obtained from healthcare workers in Chile in post-COVID-19 (n = 379) with presence of burnout syndrome (red) and without burnout syndrome (blue).

The PCA allowed us to redefine the data into a new set of axes called principal components (PC), facilitating the observation of their natural organization. Our PCA analysis resulted in a model with 2 components, which explained 88% of the total variation. PC1 represented 61% of the total variance of the data, while PC2 represented 28%. By plotting the principal components (PC1 and PC2), we could observe clustering trends (Figure 1). From the analysis of the results, a trend towards emotional exhaustion was evidenced in participants with Burnout syndrome, while the variable of self-realization showed a stronger association with individuals without Burnout (Figure 1).

Our chi-square (χ^2) analysis revealed multiple significant associations in the study, as detailed in Table 3. Regarding the perception of the level of difficulty in the job, significant associations were observed with gender and shift work, respectively ($p < 0.05$). In relation to relationships in the work environment with colleagues from the unit or service, significant associations were found with the type of work, whether clinical or

administrative, and with the shift work ($p < 0.05$). Additionally, the level of emotional exhaustion showed a significant association with the type of work performed (clinical or administrative) ($p < 0.05$). Finally, a significant association was found between the presence of burnout syndrome and the variables of the relationship with the work environment and the responsibility of caring for people at risk ($p < 0.05$) (Table 3).

Table 3. Association of Sociodemographic and Occupational Variables with Burnout Syndrome in Healthcare Workers.

| Dimension | Variables | Chi-square (χ^2) | p-value |
|--|---|-------------------------|---------|
| Perception of labor difficulty | Gender | 9.9 | 0.02 |
| | Work Shift | 13.1 | 0.01 |
| Work environment relationship with colleagues from unit or service | Type of work (clinical or administrative) | 13.4 | 0.04 |
| | Work shift | 10.1 | 0.02 |
| Level of emotional exhaustion | Type of work (clinical or administrative) | 8.4 | 0.02 |
| Presence of Burnout | Work environment relationship | 9.9 | 0.02 |
| | Care of people at risk | 6.2 | 0.01 |

Discussion

Our findings suggest that during the post-COVID-19 period, burnout levels among healthcare professionals (both clinical and administrative) in Chile were low. Emotional exhaustion and depersonalization emerged as significant variables in the presence of burnout syndrome. However, the self-realization variable could serve as a protective factor for those professionals who did not present burnout.

Our study revealed a prevalence of burnout syndrome of 8.7%, consistent with similar findings in the literature. Elghazally et al. (2021) reported a prevalence of 6% among healthcare professionals during the pandemic ($n=201$), using the same categorization of the MBI-HSS instrument. However, other studies in healthcare workers during the pandemic show divergent percentages. Ruiz-Morocho et al. (2022) and Alkhamees et al. (2021) reported prevalences of 15.7% and 27.3%, respectively, although both studies had smaller samples, composed of 36 and 33 participants. However, other research has shown higher prevalences of burnout syndrome (Olivares et al., 2022; Castro et al., 2022; Lasalvia et al., 2021; Orrù et al., 2021).

It is important to note that the previously cited studies were conducted at different times, making it difficult to compare the results due to variations in the epidemiological situation during the pandemic in each country. Regarding responses and measures during the pandemic in different countries, they were influenced by the socio-political context. In Chile, following the first confirmed case on March 3, 2020, the government implemented actions such as a state of emergency, social distancing, dynamic quarantines, curfews, unification of the health system, increased ICU beds, economic subsidies, police permits for movement, and mass vaccine purchases (Canals et al., 2020). Compared to Ecuador and Colombia, where the response was slower, Colombia had more infections, while Ecuador had a higher mortality rate (Paz-Gómez & Santelices Enríquez, 2021).

In a study conducted by Küçükali et al. (2023) on healthcare professionals from three different university hospitals in the post-COVID-19 period, the same instrument as in our study, the MBI, was used to measure burnout. This study confirmed that the pandemic had not increased levels of burnout, consistent with our results. However, they identified that emotional exhaustion was more associated with those employees working in shift systems. It is known that shift systems can lead to lack of sleep, and poor-quality sleep increases emotional exhaustion (Seda-Gombau et al., 2021; Acar Sevinc et al., 2022). Additionally, the long working hours and high turnover during the pandemic period could influence the variable of work environment relationship (Heath et al., 2024). This aligns with our PCA analysis, which revealed that the variables of emotional exhaustion and depersonalization appear to be determinants in the presence of burnout.

On the other hand, in our study, according to the PCA analysis, we observed that the variable of self-realization had a greater influence on employees without burnout. Self-realization refers to the sense of achievement and personal satisfaction at work, as well as the perception of one's own growth and professional development (Maresca et al., 2022). When individuals experience high levels of self-realization in their work, they are less likely to experience burnout. This is because it can provide a sense of purpose and meaning in work, which can counteract the negative effects of work-related stress and emotional fatigue (Vagni et al., 2020). Individuals who feel fulfilled in their work may be more motivated, committed, and resilient in the face of stressful work demands (Ellinas & Ellinas, 2020).

In a study conducted by Mele et al. (2021), cross-sectional surveys and qualitative interviews were combined to explore how healthcare workers perceived the response to the COVID-19 pandemic, considering gender differences and roles. It was found that healthcare workers identified as women and with dependents under the age of 10 experienced the highest levels of anxiety, which could contribute to the development of burnout syndrome. Additionally, Czepiel et al. (2024) examined how various COVID-19-related exposures affected the mental health of healthcare workers, highlighting significant gender differences. They found that women were less likely to perceive personal protective equipment as sufficient, which was associated with depressive symptoms and psychological distress. Moreover, women experienced more interpersonal adversity and less social support, factors linked to increased mental health issues. At the country level, higher COVID-19 mortality rates were associated with greater psychological distress among women, underscoring the influence of contextual factors on mental health outcomes. Moreover, our findings indicate an association between the levels of work difficulty and shift work. Excessive working hours and prolonged shifts are known to lead to physical and mental overload, which adversely impacts healthcare services and significantly contributes to developing burnout syndrome (Izdebski et al., 2023).

Additionally, some studies have suggested that the relationship between seniority and burnout follows an inverted U-shaped curve. This means that burnout levels tend to be higher in both workers with little work experience and those with very extensive work experience, while workers with intermediate tenure have lower levels of burnout (Makara-Studzińska et al., 2020; Załuski & Makara-Studzińska, 2022).

Moreover, the perception of the level of support from leadership is a variable that has been associated with the level of exhaustion and hence with burnout syndrome. In this regard, Sørengaard & Langvik (2022) presented in his study that emotional support

from coworkers, supervisors, and the organization as a whole can help workers cope with stress and work demands. When workers feel they have a solid support system, they are less likely to experience burnout. Furthermore, our study found an association between the variable of being responsible for a high-risk individual and a higher prevalence of burnout syndrome. This is consistent with Küçükali et al. (2023), who observed that healthcare professionals who were in constant interaction with COVID-19 patients throughout the day experienced increased anxiety and fear that their family members under their care might become infected with COVID-19. Based on the above, the low prevalence of burnout syndrome in our study could be explained.

The COVID-19 pandemic represents the greatest disruption experienced by healthcare systems in the last century. One would expect this situation to lead to increased stress and, consequently, burnout among healthcare workers. However, our study does not support this assumption. We have not found a significant difference in the presence of burnout syndrome in a post-COVID-19 context. Unlike many other studies, our approach included all healthcare workers (both clinical and administrative staff) belonging to a state healthcare entity and not just frontline workers.

Thus, promoting a healthy work environment that fosters teamwork, effective communication, and participation in decision-making (West et al., 2018), as well as healthy lifestyles such as physical activity, balanced diet, adequate rest, and effective time management, could be preventive factors in professions subject to professional burnout.

Limitations and future research

This study has several limitations that warrant consideration. Firstly, the recruitment method employed a non-random sampling technique, which may limit the generalizability of the findings. Additionally, the reliance on self-reported data via online surveys introduces the potential for response bias and may not fully capture the nuances of the participants' experiences. Furthermore, the study focused on a specific timeframe and geographic region, which may restrict the applicability of the results to other contexts. Future research could benefit from employing random sampling methods and conducting longitudinal studies to assess changes in burnout levels over time. Moreover, future investigations could explore additional variables such as resilience, coping strategies, organizational culture, and social support networks to better understand the complex nature of burnout and its predictors. Lastly, interventions aimed at preventing and mitigating burnout should be developed and evaluated to promote the well-being of healthcare workers and improve the quality of patient care.

Conclusion

Despite expectations of an increase in burnout due to the COVID-19 pandemic, our study does not support this assumption, finding low levels of burnout syndrome among healthcare workers during the post-COVID-19 period. However, high levels of emotional exhaustion and depersonalization were strongly associated with burnout, while self-realization was more associated with those professionals without burnout. Additionally, we observed significant associations between burnout syndrome and various variables, such as the work environment, type of work (clinical or

administrative), work shift, and the responsibility of caring for individuals at risk. Finally, it is important to promote a healthy work environment that includes evidence-based actions and interventions tailored to the local context.

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Funding Source

Funding was provided by the Health Internal Project (Grant No. S-02-20) from Universidad de Los Lagos.

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