Original Article

https://doi.org/10.1590/2317-6431-2021-2621en

Audiology Communication Research
ISSN 2317-6431

Epidemiological profile of users referred to speech therapy in a municipality in Rio Grande do Sul

Perfil epidemiológico de usuários encaminhados para atendimento fonoaudiológico em um município do Rio Grande do Sul

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ABSTRACT

Purpose: This research aimed to characterize the epidemiological profile of users referred tospeech therapy in the city of Canoas/RS. **Methods**: This is an epidemiological, cross-sectional and descriptive study. The research was based on data from the Canoas/RS. Integrated Health Services Management System (SIGSS), with collection of the waiting list for speech therapy, under the control of the Municipal Regulation Board. **Results**: The waiting list included 850 referrals to Speech Therapy, dating from 01/18/2018 to 08/27/2021. The highest number of referrals was from children aged 4 to 7 years, with 244 (28%), 484 male users (56.9%), 702 white (82.6%) and referred by primary care (totaling 76, two%). The waiting time on the regulation list averaged 17.89 months (one year and six months) and varied with 186 users waiting between 7-12 months (21.8%), 168 users waiting between 0.6 months (19.7%) and 167 users waiting between 25-30 months (19.6%). The main complaints were language and speech (60.2%). **Conclusion**: According to the data found, there was a damming of the demand for speech therapy care by the SUS in Canoas/RS., with low turnover and long waiting time for the rehabilitation of users, mostly children. This study is expected to help in the identification of this demand, and thus, enable the creation of public policies of habilitation or rehabilitation in the municipality and improve the population's access to specialized care.

Keywords: Speech Therapy; Human Communication Disorders; Epidemiology; Public health; Primary Health Care

RESUMO

Objetivo: Caracterizar o perfil epidemiológico de usuários encaminhados para atendimento fonoaudiológico no município de Canoas (RS). **Métodos**: Estudo epidemiológico, transversal e descritivo. A pesquisa foi feita a partir de dados do Sistema Integrado de Gestão de Serviços de Saúde de Canoas (RS), com coleta da lista de espera para atendimento fonoaudiológico, sob controle da Diretoria de Regulação Municipal. **Resultados**: A lista de espera contemplou 850 encaminhamentos para Fonoaudiologia, datando de 18/01/2018 até 27/08/2021. O maior número de encaminhamentos foi de crianças de 4 a 7 anos de idade, com 244 (28%), sendo 484 usuários do gênero masculino (56,9%), 702 brancos (82,6%) e encaminhados pela atenção primária (totalizando 76,2%). O tempo de espera na lista da regulação teve média de um ano e seis meses e variou com 186 usuários aguardando entre 7-12 meses (21,8%), 168 usuários aguardando entre 0,6 meses (19,7%) e 167 usuários aguardando entre 25-30 meses (19,6%). As queixas principais foram de linguagem e fala (60,2%). **Conclusão**: Observou-se um represamento da demanda para atendimento fonoaudiológico pelo Sistema Único de Saúde em Canoas (RS), com baixa rotatividade e tempo de espera longo para reabilitação dos usuários, em sua maioria crianças. A partir deste estudo, espera-se auxiliar na identificação dessa demanda e, assim, possibilitar a criação de políticas públicas de habilitação ou reabilitação no município e melhorar o acesso da população ao atendimento especializado

Palavras-chave: Fonoaudiologia; Distúrbios da comunicação humana; Epidemiologia; Saúde pública; Atenção Primária à Saúde

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Conflict of interest: No.
Authors' contribution: BDS conceived the study, designed and performed analyses, collected and interpreted data, and wrote the paper; SPR and GD supervised the conception, analyses, data interpretation, and writing of the paper; CDS collected data and reviewed and edited the manuscript.
Funding: None.
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Received: February 07, 2022; **Accepted:** May 18, 2022

INTRODUCTION

As the Brazilian public health system (*Sistema Único de Saúde* - SUS) developed and Regulation L. 6965/1981 was promulgated, speech-language and hearing therapists were included in public health care, providing a new form of access to speech-language and hearing therapy (SLHT) and rehabilitation in Brazil[1]. However, even today, accessibility barriers to SLHT services exist in many local municipalities[2].

Worldwide estimates indicate that 5% to 10% of children under 3 years of age have some type of communication disorder[3]. Regarding speech-language and hearing disorders among the Brazilian adult population[4], although data are scarce, studies have reported a prevalence of approximately 30.8%. It is common knowledge that the wait for SLHT through SUS is protracted and patient turnover is slow due to longer treatments[5,6]. In addition, SLHT services are limited and difficult to access, mainly because of poor regulation and referral criteria which make it difficult to begin and continue SLHT, regardless of the level of complexity[2].

Research carried out in nursery schools in Canoas, in Rio Grande do Sul (RS) showed a high prevalence of phonological disorders, with 55% of the children presenting communication issues[7]. Another study carried out in Porto Alegre (RS) reported a high demand for SLHT at one healthcare provider, with a predominance of complaints about preschool children with speech problems[8].

Against this background, the combined field of speech-language pathology and audiology has been widening its scope of service within SUS, thus creating a greater need for technical and scientific input to validate policymaking for the population[9]. Health professionals should know the health status of their territory before defining actions for the most frequent problems in the population[9,10]. As a rule, patient demand is greater than the availability of human, technological and financial resources in public health. Therefore, population studies are used to describe, analyze, plan and intervene in the health problems of human communities[9,10]. To understand the needs of populations, their epidemiological profiles must be studied before proposing solutions to problems and trying to improve quality of care[11,12].

In light of this, this study aimed to trace the epidemiological profile of patients who were referred to a public SLHT specialty clinic in the city of Canoas (RS). From the data, we expected to characterize age groups, genders, main health complaints and underlying diseases (using the ICD - International Classification of Diseases), as well as the health care providers that submitted referrals and the type of referring physician (whether general practitioners or specialists). This research is meant to assist in the creation of SLHT and rehabilitation policies for public health programs that can benefit Canoas.

METHODS

This was a descriptive, cross-sectional, epidemiological study. Research was carried out using data from the integrated healthcare service management system (*Sistema Integrado de Gestão de Serviços de Saúde* - SIGSS) in Canoas and the population consisted of referred patients from the same municipality on the waiting list for SLHT through SUS (speech-language and hearing therapist code in the Brazilian occupational classification - CBO 223810). Patients are referred by doctors to all levels of SUS services. These referrals go through outpatient regulation by the local regulation, control, audit and assessment board (*Diretoria de Regulação, Controle, Auditoria e Avaliação* - DRCAA) of the municipal health department of Canoas (*Secretaria Municipal de Saúde de Canoas* - RS), according to the municipal patient flow framework.

This research was carried out after being approved by the DRCAA and the university research ethics committee (*Comitê de Ética em Pesquisa* - CEP) at Universidade Luterana do Brasil - ULBRA, under approval nº 4867402 (CAAE: 46722121.4.0000.5349). The university's ethics committee waived the use of an informed consent form as there was no direct contact with the patients. It did, however, determine that a term of commitment form should be signed to access the data and justify the benefits of this research, as well as ensure that all registrations and confidential referral data were properly stored and used exclusively for scientific purposes, fully preserving the anonymity of the patients on the waiting list. The form was signed by the research authors and the institution where the data was collected.

Data collection was carried out in person at the DRCAA in September 2021, at times and dates predetermined by the sector. Employees provided training on how to use the system. The sample consisted of patients on the waiting list for SLHT in Canoas in 2018, when medical records were digitized and entered into the SIGSS database.

All referrals on the waiting list for SLHT services were included, according to Canoas' patient referral flow for specialized care classified under the occupational code CBO 223810 (speech-language and hearing therapist). The exclusion criteria included patients undergoing SLHT in another service sector in Canoas, and referrals with blocked access due to outdated registrations or not having a SUS medical card.

The municipality of Canoas, located close to the capital Porto Alegre, has a territorial area of 310,789 km[13], and an estimated population of 349,728 inhabitants in 2021, or 2.47 inhabitants/km^2, and a HDI (Human Development Index) of 0.75, according to data from the Brazilian statistics and geography institute IBGE (*Instituto Brasileiro de Geografia e Estatística*). Currently, speech-language and hearing therapists hired by the municipality work in the child and adolescent psychosocial healthcare center CAPS-I (*Centro de Atenção Psicossocial - Infantojuvenil*), the autism spectrum disorders specialty center CERTEA (*Centro de Referência em Transtorno do Espectro Autista*), the home care program (*Programa Melhor em Casa*), and the high-complexity care hospital system at points of access with no specialized habilitation or rehabilitation.

Data collection was carried out using a data extraction form previously drafted by the regulation sector and the authors of this study, with the variables defined according to the research objectives. After collection training, searches for patients listed under the "referral" tab in the SIGSS database were performed. The extracted variables were referral dates, ICD-10 code, health complaints, health care providers that submitted referrals, and the type of referring physician. Similarly, searches were carried out under the tab, "patient registration", for the variables of patient gender, race/skin color, family primary care assignment (*Estratégia Saúde da Família* - ESF) and geographical quadrant in Canoas.

As for the referral data, the waiting time was divided into 0-6 months, 7-12 months, 13-18 months, 19-24 months, and 25-30 months of waiting, and so on, in intervals of six months. The mean waiting time in months and the interquartile range were also calculated.

As for the patient health complaints, given the heterogeneity of terms and nomenclature, keywords were used to categorize characterizations. For example, "patient with swallowing problems" and "patient choking" were collected as "swallowing" complaints. "Patient with slurred/unintelligible speech", "patient confuses letters and sounds" and "patient with impaired articulation/dysarthria/aphasia" were included in the "speech and language" complaints. "Patient does not hear well" and "patient with hearing loss" were included in the "hearing" complaints. "Patient with a hoarse voice" and "dysphonic/aphonic patient" were included in the "voice" complaints. "Patient with an intellectual disability" and "patient with a neurological delay" were included in the "neurodevelopment" complaints. "Difficulty breastfeeding" was included in the "breastfeeding" complaints. "Food refusal" was included in "food" complaints. The category "unspecified complaint" was used when there were no plausible case descriptions to include a complaint in any of the previously mentioned categories.

Data were tabulated and a descriptive analysis was performed using Microsoft Excel 2016 software to present the distribution of absolute and relative frequencies for each variable, individually. In addition, the mean, median, standard deviation and interquartile range were calculated to further summarize the variables.

RESULTS

Through the SIGSS computerized database, 850 referrals on the waiting list for the speech-language and hearing therapy were included for analysis. The date of the first referral for SLHT in the system was 01/24/2018. The last referral in the system was dated 08/27/2021 (Figure 1).

Among the referrals for SLHT, 484 (56.9%) were male. Regarding race/skin color, 702 referrals (82.6%) identified as white, while the rest identified as other races. Patient ages ranged from 11 months to 96 years, with an average of 23 years. The largest group of referrals consisted of 244 children aged 4 to 7 years (28.7%). In addition, 50 referrals (5.9%) did not report their race/skin color when registering, a percentage that was higher than the self-reported population of 32 black patients (5.8%) (Table 1).

Regarding time on the waiting list for SLHT, the average wait was approximately 1 year and 6 months, with a median of 16 months (Chart 1). Among the referrals, 168 (19.76%) waited for 0 to 6 months, 186 (21.88%) for 7 to 12 months, and 167 (19.65%) for 25 to 30 months (Table 2).

Results regarding the waiting time showed that the sample did not follow normal distribution, as the data were quite variable. Of the 850 analyzed records, only one did not have the waiting time, therefore the distribution coefficients were calculated using 849 records. Half (50%) of the sample, or 425 patients, waited for SLHT for 9 to 26 months, which translates into an interquartile range of 17 months. However, the data distribution presented an outlier representing a waiting time of 64 months - a discrepant value considerably outside the distribution. Finally,

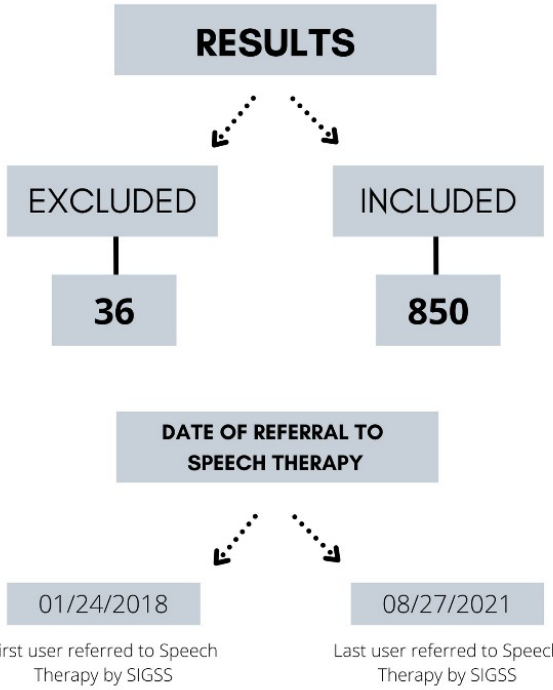

Figure 1. Flow chart of results
Subtitle: SIGSS = the integrated healthcare service management system

Table 1. Sociodemographic characteristics of the referrals for speech-language and hearing therapy in the municipality of Canoas, in Rio Grande do Sul (RS), 2018-2021

Sociodemographic characteristics of the referrals for speech-language and hearing therapy in the municipality of Canoas (RS), 2018-2021	n	%
1. GENDER	362	42.6
Woman	484	56.9
Man	4	0.5
Not reported		
2. RACE/SKIN COLOR	50	5.9
Not reported	0	0.0
Indigenous	7	0.8
Yellow	32	3.8
Black	59	6.9
Brown	702	82.6
White		
3. AGE GROUP	145	17.1
0-3 years	244	28.7
4-7 years	143	16.8
8-12 years	40	4.7
13-17 years	28	3.3
18-29 years	19	2.2
30-39 years	21	2.5
40-49 years	56	6.6
50-59 years	66	7.8
60-69 years	56	6.6
70-79 years	26	3.1
80-89 years	6	0.7
90-99 years		
TOTAL	850	100

Results for the frequency analyses
Subtitle: % = percentage; RS = Rio Grande do Sul; n = number of referrals on the waiting list
Source: Prepared by the authors

Chart 1. Waiting times for speech-language and hearing therapy in the municipality of Canoas, in Rio Grande do Sul, 2018-2021 – distribution divided into quartiles

WAITING TIME (in months) Distribution divided into quartiles	
MAXIMUM (*outlier*)	64.00
3rd QUARTILE	26.00
MEAN	17.89
MEDIAN	16.00
1st QUARTILE	9.00
MINIMUM	0.00
INTERQUARTILE RANGE	17.00

Table 2. Time on the waiting list for speech-language and hearing therapy (at intervals of six months), in the municipality of Canoas, in Rio Grande do Sul/RS, 2018-2021

Time on the waiting list for speech-language and hearing therapy (at intervals of six months), in the municipality of Canoas/ RS, 2018-2021	n	%
0-6 months	168	19.76
7-12 months	186	21.88
13-18 months	98	11.53
19-24 months	130	15.29
25-30 months	167	19.65
31-36 months	46	5.41
37-42 months	16	1.88
43-48 months	37	4.35
49-54 months	0	0.00
55-60 months	0	0.00
61-66 months	1	0.12
Not reported	1	0.12
Total	**850**	**100**

Subtitle: n = number of referrals on the waiting list; % = percentage; RS = Rio Grande do Sul

the arithmetic mean of the data was approximately 18 months. Chart 1 shows the distribution divided into quartiles and the waiting times.

Among the referrals, 740 (87.1%) presented one of the categorized speech-language or hearing complaints. Most complaints were language and speech problems in 584 individuals (60.5%), followed by swallowing disorders in 115 individuals (11.9%) and neurodevelopmental disorders in 59 patients (6.1%). Among the disorders that led to referrals, the most common ICD-10 code was F80 - language disorders, in 295 individuals (34.7%), as shown in Table 3.

Regarding the health care providers that submitted referrals, 539 were sent for SLHT by primary health care services (this includes family health clinics and basic health care units - 76.2%) whereas only 225 referrals (23.7%) came from medium and high complexity institutions (ULBRA university hospital), a medical specialties center and the Nossa Senhora das Graças hospital (Table 4).

As for the municipal quadrants, there was a predominance of 169 referrals from the northwest quadrant/region (33%). Furthermore, most referral requests (n=452) were made by general practitioners (75.6%) and 486 patients (57.2%) received care from a family health strategy team.

Table 3. Classification of Diseases, with ICD-10 codes of the referrals for speech-language and hearing therapy in Canoas, Rio Grande do Sul, 2018-2021

Classification of Diseases, with ICD-10 codes of the referrals for speech-language and hearing therapy in Canoas (RS), 2018-2021	ICD-10 code	n	%
Specific developmental disorders of speech and language	F80	295	34.7
Speech disturbances, not elsewhere classified	R47	124	14.6
Sequelae of stroke, not specified as haemorrhage or infarction	I69.4	67	7.9
Dysphagia, unspecified	R13	57	6.7
Not reported	-	33	3.9
Voice disturbances	R49	32	3.8
Other and unspecified hearing loss	H91	23	2.7
Pervasive developmental disorders	F84	22	2.6
Dysarthria and anarthria	R47.1	20	2.4
Autistic disorder	F84.0	18	2.1
Adult onset fluency disorder (stuttering)	F985	17	2
Dyslexia and other symbolic dysfunctions, not elsewhere classified	R48	15	1.8
Spastic quadriplegic cerebral palsy	G800	13	1.5
Dysphasia and aphasia	R470	10	1.2
Down Syndrome	Q90	10	1.2
Total		850	100

Subtitle: n = number of referrals on the waiting list; ICD-10: International Statistical Classification of Diseases

Table 4. Health care providers that submitted referrals in the municipality of Canoas, Rio Grande do Sul (RS), 2018-2021

Health care providers that submitted referrals in the municipality of Canoas, Rio Grande do Sul (RS), 2018-2021	n	%
ULBRA university hospital	138	16.2
Família União clinic	68	8.0
Família Estância Velha clinic	58	6.8
Natal basic healthcare unit	49	5.8
CAIC basic healthcare unit (children and adolescents)	33	3.9
Centro de Especialidades Médicas	33	3.9%
Nossa Senhora das Graças hospital	31	3.6%
Harmonia family health clinic	30	3.5%
Guajuviras II family health clinic	28	3.3%
Praça América basic healthcare unit	28	3.3%
Boa Saúde basic healthcare unit	28	3.3%
Pedro Luiz da Silveira basic healthcare unit	25	2.9%
Olaria basic healthcare unit	23	2.7%
Rio Branco basic healthcare unit	21	2.5%
Fernandes basic healthcare unit	20	2.4%
Total	**850**	**100**

Subtitle: n = number of referrals on the waiting list; % = percentage; RS = Rio Grande do Sul; ULBRA = Universidade Luterana do Brasil; CAIC = Centro de Atenção Integral à Criança e ao Adolescente

DISCUSSION

This study showed that the waiting list included 850 referrals for SLHT, with an average waiting time of 18 months. The highest number of referrals were white male preschoolers

sent by primary care services. The main complaints were language and speech problems and the most frequent ICD-10 code physicians reported was F80 – Specific Developmental Disorders of Speech and Language.

The significant frequency of patients who identified themselves as white reflects a similar percentage to the distribution of race/skin color throughout Canoas, where an estimated 85% of the population self-declared as white, in 2012[13]. The absence of self-declared indigenous patients is also noteworthy, because Canoas has an indigenous population of at least 500 people, according to 2010 census data. Moreover, underreporting may have occurred in this survey data[13].

This frequency is justified by current studies on health determinants that demonstrate that white patients have better access to health[14]. Racial and ethnic equity and universal access to health should be a guarantee for these populations, through national policies addressing the integral health of black and indigenous populations. In this case, difficulty in accessing institutions can be a sign of institutional racism[15].

There was also a greater number of male adults and children. Other studies have published similar results, and this can be explained by the fact that the neurological maturation of boys is generally slower than that of girls, in the first stage of childhood[16].

The data about waiting times were similar to the findings of other studies, such as those from a SUS-affiliated teaching clinic where patients waited 6.6 months, on average, to start SLHT[17]. A literature review showed a wait of at least six months for the first SLHT consultation and a lack of criteria representing patient severity of disorder[18]. Thus, the long waiting time may be caused by the low numbers of available speech-language therapists and audiologists and disorganized interfaces throughout health networks[2].

The Brazilian federal speech-language pathology and audiology council (*O Conselho Federal de Fonoaudiologia* - CFFA) estimates that the minimum time for access to SLHT is two months and, for orofacial myofunctional and language disorders, the wait can surpass twelve months[19]. Our results corroborate these CFFA findings. In 2016, the supply of SLHT services around the country was estimated at at 6.18/105 inhabitants, predominantly in the states of Santa Catarina, Paraná and São Paulo[20-22].

These studies show that cities with the worst social indicators have fewer public therapeutic services[21,22]. Another study also demonstrated a shortage of SLHT in SUS services, highlighting that these professionals tend to work in large cities or municipalities with at least 40,000 inhabitants[23].

The health care for communication disorders offered to the Brazilian population by SUS is limited[20]. Access to adequate management of these disorders is also directly linked to socioeconomic development[20]. In addition, in Brazil there is a predominance of private establishments with municipal ties that provide medium and high complexity services to SUS. This brings to the fore important discussions regarding strategies of intergovernmental negotiation, investment, planning and expansion of the service network[24].

Concerning the health complaints, physicians demonstrated difficulty in identifying and describing the symptoms of speech-language and hearing disorders. This may underscore the poor understanding other health professionals may have of communication disorders, as shown in another study[25]. However, most professionals who referred patients were able to identify speech and language disorders. This is in line with other findings in the literature about the high incidence of language disorders in 7% to 10% of children[26]. Another study demonstrated that speech articulation disorders affect four out of every thousand children aged 4 to 8 years[27].

Regarding the residential area quadrants, the highest percentage of patients came from the northeast quadrant. The Mathias Velho neighborhood is located there, and is the most populous one in the municipality with approximately 38,000 inhabitants. This is also where the family health clinic (CSF) is headquartered. It is a health unit with the second highest number of referrals for SLHT. This CSF is one of the units that offers a speech-language and hearing residency and had a speech-language and hearing therapist on staff at the family health support center (NASF) from 2014 to 2018. This history may have facilitated the identification of communication disorder complaints by the family health strategy (ESF) unit. In addition, the university hospital in Canoas is also a teaching unit linked to the Lutheran university (ULBRA), and has speech-language and hearing therapists on staff.

The current risk classification of referrals, together with the protracted time on the waiting list, lead to superficial provisions for health care and few standards to define priority criteria for speech-language and hearing therapy. Furthermore, in the local context of speech-language pathology and audiology, it is still proving difficult to establish criteria to manage the demand for patient care services[20].

The most expressive data found in this study was the high number of referrals on the waiting list in Canoas, with long waiting times and no prospect of speech-language and hearing therapy or rehabilitation. Another study showed that the faster the intervention with SLHT, the better the results and the lower the costs for health services[28]. In addition, it is known that early diagnoses and interventions are necessary for adequate changes in communication and cognitive development in childhood, due to neuroplasticity[29].

For the effective consolidation of speech-language pathology and audiology in SUS services, indicators related to speech-language and hearing health must be studied[5,25]. Epidemiological data can justify speech-language and hearing policies at the collective level, in addition to characterizing the population that needs specialized care from speech-language and hearing therapists[5,9].

Therefore, this study corroborated the findings of other researchers, demonstrating the current need to further implement public policies for SLHT in SUS services. It is known that there is a high prevalence of communication disorders in the population, and this makes it essential to have a speech-language and hearing therapist on SUS health teams to promote health care, prevent harm and rehabilitate patients. However, Canoas does not presently have speech-language and hearing therapists in primary health care or secondary care services, demonstrating a major gap in its health care system.

Our study had limitations, mainly in relation to patient information that may have been outdated or incomplete in the system. Thus, it was not possible to collect data regarding patient education or socioeconomic profile. Also, there was a considerable variety of nomenclature and descriptions health professionals used to refer patients with health complaints. In addition, the data could have been correlated to discover other relevant findings.

CONCLUSION

Important SLHT access bottlenecks throughout SUS services in Canoas were identified, such as low patient turnover and long waiting times for rehabilitation, mostly for children. There has been a high demand in the preschool age group, and long waiting times can negatively impact the health, learning and sociability of these patients, in addition to increasing health costs and contributing to the disorganization of outpatient network throughput. Further study, discussions and joint efforts between state and municipal administration services are imperative to create public policies for SLHT and rehabilitation in Canoas.

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