Function & Disability Journal
2022, Volume 5

Research Paper

Prevalence of Cleft Lip and Palate and Access to Rehabilitation Services in the South-West of Iran: A 10-Year Study

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Article info:
Received: 09 Jul 2022
Accepted: 11 Aug 2022
Available Online: 08 Nov 2022

Funding

This study is extracted from MSc thesis in Speech-Language Pathology (SLP) approved by Iran University of Medical Sciences with grant number of 1400-1-6-21034.

Conflict of interest

The authors declared no conflict of interest.

ABSTRACT

Background and Objectives: Cleft lip and or cleft palate (CL/P) is one of the most prevalent malformations in the head and neck region. The etiology of this malformation is multifactorial, and the incidence of clefts may be affected by ethnic, racial, geographic, and socioeconomic factors, therefore this study aimed to investigate the prevalence, risk factors of CL/P, and access to rehabilitation services for these children in the south-west of Iran.

Methods: This cross-sectional study retrospectively analyzed birth data collected from hospitals (according to the International Classification of Diseases [ICD10] hospital registry code) in Shahrekord City, Iran, from 2011 to 2021. Frequency distribution and frequency of received rehabilitation services were analyzed. 76 children without this disorder were selected as a control group to evaluate the risk factors.

Results: The overall prevalence was approximately 0.93 per 1000 live births. The prevalence of Cleft Lip (CL), cleft palate (CP), and Cleft Lip and Palate (CLP) were 0.17, 0.27, and 0.49, respectively. Of the 38 infants born with CL/P, 20 infants (52.63%) were boys and 18 (47.36%) were girls (P>0.05). The variables of cleft history, maternal disease, maternal medicine history, low infant weight, and child disease were significantly associated with CL/P (P<0.05). Also, the children with CL/P significantly delayed speech development (P<0.05). A total of 26.31% of them did not have early surgery, 10.52% had no surgery, and 34.21% had no history of speech and language treatment.

Conclusion: Findings of this study showed that the overall prevalence of oral clefts was 0.93 per 1000 live births. However, some of these children did not have access to surgery and rehabilitation services in time; therefore it is necessary to plan to receive early surgery and rehabilitation services.

Keywords: Cleft lip, Cleft palate, Prevalence, Rehabilitation, Iran

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Cite this article as Derakhshandeh Z, Jalilevand N, Abolghasemi J, Momeni MA, Saffarian A. Prevalence of Cleft Lip and Palate and Access to Rehabilitation Services in the South-West of Iran: A 10-Year Study. Function and Disability Journal. 2022; 5:E51. http://dx.doi.org/10.32598/fdj.5.51

http://dx.doi.org/10.32598/fdj.5.51

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What is "already known" in this topic:

Cleft lip and or Cleft Palate (CL/P) are the most common congenital anomalies of the head and the neck. The etiology of this malformation is multifactorial, and the prevalence of clefts varies according to geography, ethnicity, and socioeconomic status. Therefore, some researchers examined the prevalence of CL/P in different cities and regions of Iran, such as Tehran City and northwest Iran.

What this article adds:

The results of this article indicated that the prevalence of the CL/P in Sharekord (south-west Iran) was 0.93 per 1000 live births in 10 years (2011-2021). Furthermore, the variables of cleft history, maternal disease, maternal medicine history, low infant weight, and child disease were significantly associated with CL/P. In addition, regarding access to rehabilitation services, 10.52% of participants had no surgery, and 34.21% had no history of speech and language treatment.

1. Introduction

Cleft lip and/or cleft palate (CL/P) are the second most common birth defects in the United States of America. Cleft lip and palate (CLP) is one of the most familiar malformations happening in the head and neck location. A cleft lip impacts facial aesthetics, while a cleft palate can affect feeding, middle ear feature, speech, and resonance. Isolated cleft palate or sub-mucous cleft is often related to craniofacial syndromes that encompass different anomalies. Clefts vary in type and severity; however, usually follow the path of the normal embryological suture lines [1]. The etiology of this malformation is multifactorial, and the incidence of clefts may additionally be affected by ethnic, racial, geographic, and socioeconomic factors [2].

The pathogenesis of CL/P is not entirely understood, and there is evidence that both genetic and environmental factors are vital determinants; however, their role in the development of CL/P is not fully understood. Some environmental risk factors which have been related to CL/P consist of maternal smoking, maternal alcohol use, an anticonvulsant drug, retinoid capsules, lack of prenatal care, and dietary deficiencies, some of which include folic acid, vitamin B6, and zinc [3]. Overall, oral clefts in any type (i.e., cleft lip [CL], cleft lip and palate [CLP], or isolated cleft palate [CP]) have been expected to occur in about 1 in 700 live births [4].

Epidemiology measures the disease's extent and burden (the proportion of all people affected by the disease). It helps reflect community health needs and monitor disease control programs [5]. The prevalence of clefts varies with geography, ethnicity, and socioeconomic status [6]. The prevalence of clefts differs significantly depending on the historical racial past. The highest prevalence is in Native Americans (1 in 300), Asians (1 in 500), and then Caucasians (1 in 800). The prevalence of clefts is the lowest among African descent (1 in 2000) [7]. The prevalence of CLP varies according to geographical and racial origin, and researchers have shown the different prevalence in different regions [8-11]. In a systematic review in Iran, the prevalence of CL/P became 1.24/1000. The prevalence of CP, CL, and CLP was 0.35/1000, 0.34/1000, and 0.88/1000, respectively. The maximum prevalence was in Tehran (the capital of Iran), and the minimum was in the northwest of Iran [12].

The importance of team management for patients with cleft lip and palate was first recognized by H. k. Cooper, at the Lancaster cleft palate health center in the early 1930s [13]. The cleft palate team includes a surgeon, an orthodontist, a speech-language pathologist, and at least one additional expert. The craniofacial team should include a craniofacial surgeon, an orthodontist, a mental health professional (psychologist or social worker), and a speech-language pathologist. Other contributors may include a neurologist, a neurosurgeon, and or an ophthalmologist. The Velopharyngeal Insufficiency (VPI) team needs a speech-language pathologist, an otolaryngologist, or a plastic surgeon, and preferably, a geneticist [1].

Considering the effect of geographical areas and race on cleft lip and palate prevalence and since no research has been done in this field in Shahrekord, as well as it is essential to receive rehabilitation and surgical treatment services at the right time for these children; however, the past studies in this field have not addressed

this critical issue, hence this study was conducted to investigate the prevalence and risk factors of CL/P and to evaluate the extent of access to surgical rehabilitation services for them in south-west Iran (Shahrekord).

2. Materials and Methods

This retrospective cross-sectional study was performed in south-west Iran (Shahrekord) from 20 March 2011 to 20 March 2021. The Ethics Committee of the Iran University of Medical Sciences approved this study (Code: IR.IUMS.REC.1400.578). All participants signed an informed constant to participate in this study. In addition, a code number was assigned to each participant's name to provide confidentially.

The population of this study included all infants born alive in hospitals (40929) affiliated with Shahrekord University of Medical Sciences with the city's maternity unit. The medical record center register of hospitals helped us in collecting statistics. All hospitals in Iran have registered patients' medical information according to the International Classification of Diseases (ICD 10th revision). Therefore, we collected data on infants with CL/P born in hospitals, along with the date of birth, gender, kind of clefts, and several critical maternal factors and medical assessments and management. The relevant ICD-10 diagnosis codes of CP, CL, and CL/P are Q35, Q36, and Q37, respectively. The cleft birth/1000 live births were calculated from 2011 to 2021. The records of speech and language offices were also gathered and studied to complete the data.

Participants: By searching the diagnostic codes of cleft lip and palate (ICD10) in the computer system of the statistics department of hospitals and treatment centers affiliated with Shahrekord University of Medical Sciences, and then direct questions from all private speech therapy centers in Shahrekord, 38 cases of CLP were identified in the target period. To evaluate the risk factors (disease factors), and to compare the variables randomly, in the same range of age (2-9 years), 76 children without this disorder were selected as a control group. After receiving the consent of the research participant, a researcher-made questionnaire was given to the parents. All participants included in this study, consisting of a case (a child born with CL/P) and two control cases (2 cases following children born without CL/P), completed a questionnaire concerning cleft traits and factors of interest, such as smoking, maternal age, and medication. In addition, the parents completed a questionnaire that covered demographic, behavioral, and health information.

Characteristics and factors of interest were gathered, including gender, infant's family history of oral cleft (first or second degree), consanguineous marriage (yes/no), maternal age at birth (younger than 30/ older than 30 years), mother's smoking cigarettes, mother's ailment in being pregnant inclusive of flu, diabetes, thyroid ailment, others or none of these, uses of any multivitamin, folic acid-containing complement, and self-medicinal medicine or herbal supplement, antibiotics, anticonvulsant pills, multiple medications or others (none of them mentioned), infant gestational age at birth, birth weight (lower of 2500g: yes/no), the additional anomaly of the infant other than cleft, such as heart, cerebral, respiratory diseases.

To investigate the condition of the management and rehabilitation services, available for children with cleft lip and palate in this area, a structured questionnaire was completed. The variables included surgical history, records of feeding counseling, history of speech and language assessment, history of speech and language counseling, history of speech therapy interventions, and history of a hearing evaluation. For instance, to characterize the history of hearing assessment, answers were considered (yes/no). Then, based on the accumulated and recorded data, descriptive statistics were performed.

Statistical analysis

Statistical analyses were conducted using the SPSS software V24. Prevalence was calculated by using the percentages of CL/P in the overall sample. In addition, to study the effect of gender, infant's family history of oral cleft, consanguineous marriage, maternal age at the time of infant's birth, mother's smoking cigarettes, mother's disease in being pregnant diabetes, uses of medications, infant gestational age at birth, birth weight, the additional anomaly of the infant aside from cleft, the Chi-square test was used between the exclusive groups (case, control). $P<0.05$ were considered statistically significant.

3. Results

A total of 38 cases with CL/P and 76 controls were enrolled. The 38 cases were all children with CL/P born throughout the past ten years (2011-2021), and the complete questionnaires were obtained from the hospitals delivering cleft births and speech and language workplaces or centers. Seventy-six cases in the control group were children born without CL/P.

Table 1. Frequency of Cleft Types in South-West Iran From 2011-2021 by Gender

Genders	Girl	Boy	Total	No.	Prevalence Per 1000	df	Chi-square	Sig.
CL	4	3	7	18.42	0.17			
CP	7	4	11	28.94	0.27			
CLP	7	13	20	52.63	0.49	2	2.663	0.264
Total	18	20	38	100	0.93			

CL: Cleft Lip; CP: Cleft Palate; CLP: Cleft Lip and Palate.

The prevalence was approximately 0.93 per 1000 live births, and the prevalence of CL, CP, and CLP was 0.17, 0.27, and 0.49, respectively. The prevalence of CLP was higher than CL or CP. Of the 38 infants with clefts, 18 infants (47.36%) were girls and 20 (52.63%) were boys (P>0.05). Also, of the 38 infants with clefts, 7 infants were with cleft lips (4 girls and 3 boys), 11 were with cleft palate (7 girls and 4 boys), and 20 were with cleft lip and palate [7 girls and 13 boys (Table 1)].

Table 2 presents factors of interest in CL/P in two groups (CL/P and control). A chi-square test was used to determine the factors significantly related to CL/P. The family history of oral cleft (cleft history) was presented in 26.31 percent of the cases and 2.63% of the control group with a significant difference (P≤0.001). In our study, results about consanguineous marriage were significant with chi-square test (P≤0.001). A total of 42.10% of the case group and 14.47% of the control group had consanguineous marriages. Maternal age at the time of infant's birth was older than 30 years in 52.63% of the cases and 57.90% of the controls without a significant distinction (P≥0.593). Maternal history of smoking is associated with CL/P (P≥024). 1.31% of the control group and 10.53% of the case group had a history of maternal smoking. Outcomes about the mother's disease confirmed that the case and control groups had been heterogeneous regarding the maternal ailment, and the ratio became significant (P≥0.007). The use of maternal medicine was significant (P≤0.001). A total of 63.16% of the cases had a mother's medical history, although 10.53% of them had a history of taking the vitamin.

Preterm infant gestation in 36.84% of cases and 18.42% in the control group was without a significant difference (P≥0.094). Low birth weight (<2500g) was observed in 18 children of the cases (47.37%) and 8 children of the control group (10.53%) with a significant difference (P≤0.001). Child disease was in 71.05% of the CL/P cases and 2.62% of the control group with a significant difference (P≥0.001).

In this study, 23.68% of the CL/P cases and 11.84% of the control group had delayed motor development without a significant difference (P≥0.102). On the other hand, 71.05% of the CL/P cases and 14.47% of the control group had delayed speech development with a significant difference (P≤0.001) (Table 3).

Table 4 presents the frequency of variables of surgical and rehabilitation services history of CL/P. The variables covered included surgical history, history of feeding counseling, history of speech and language assessment, history of speech and language counseling, and history of hearing assessment (Figure 1).

The results showed that 63.15% of children benefited from well-time surgery. However, a significant percentage of children did not have early surgery (26.31%), and 10.52% had no history of surgery. In addition, 84.21% of mothers of children with CL/P received nutritional counseling (breastfeeding education), and 86.84% of children had a hearing assessment. Furthermore, 65.78% of children had a history of speech and language assessment and counseling but 34.21% had no history of speech therapy intervention (Table 4).

4. Discussion

Our study aimed to analyze records about the prevalence of CL/P in the population of south-west Iran (Shahrekord) by using electronic medical records of hospitals and their relationship with the etiological factors for future focus and prevention, additionally, studies have been conducted on surgical and rehabilitation services for CL/P patients. Until now, the prevalence of oral clefts and etiology and relative risk factors was not mentioned for the population of this location.

We used electronic records (medical institution-based) of children born in hospitals and subsequently

Table 2. Factors of interest of Cleft Lip/Palate (CL/P) in two groups (Cleft Lip and or Cleft Palate [CL/P] and control) and Chi-square

Characteristics		No. (%)		Values	Sig.
		CL/P (n=38)	Control (n=76)		
Cleft history	No	28(73.69)	74(97.37)	15.088	0.000
	Yes	10(26.31)	2(2.63)		
Consanguineous marriage	No	22(57.90)	65(85.53)	10.701	0.001
	Yes	16(42.10)	11(14.47)		
Maternal age	<30	18(47.37)	32(42.10)	0.285	0.593
	=>30	20(52.63)	44(57.90)		
History of smoking	No	34(89.47)	75(98.69)	5.125	0.024
	Yes	4(10.53)	1(1.31)		
Maternal disease	None	24(84.02)	61(80.26)	14.219	0.007
	Flu	3(7.89)	2(2.63)		
	Diabetes	4(0.10)	0(0.0)		
	Thyroid	4(0.10)	12(15.80)		
	Other	3(7.89)	1(1.31)		
Maternal medicine usage	None	14(36.84)	16(21.05)	34.682	0.000
	Anticonvulsant medicines	1(2.63)	1(1.31)		
	Antibiotics	4(10.53)	2(2.64)		
	Herbal	2(5.26)	0(0.0)		
	Vitamin	4(10.53)	43(56.57)		
	Thyroid	6(15.79)	12(15.79)		
	Multiple	6(15.79)	0(0.0)		
	Other	1(2.63)	2(2.64)		
Gestational age at birth	Preterm	14(36.84)	14(18.42)	4.725	0.094
	Term	22(57.90)	58(76.32)		
	Post-term	2(5.26)	4(5.26)		
Low birth weight	No	20(52.63)	68(89.47)	19.531	0.000
	Yes	18(47.37)	8(10.53)		
Child disease	None	11(28.95)	74(97.38)	64.718	0.000
	Heart	7(18.42)	1(1.31)		
	Cerebral	1(2.63)	1(1.31)		
	Respiratory	7(18.42)	0(0.0)		
	Kidney	2(5.26)	0(0.0)		
	Multiple	10(26.32)	0(0.0)		

CL/P: Cleft Lip and or cleft Palate.

Table 3. Developmental disorders in children with Cleft Lip and or Cleft Palate (CL/P)

Variabels	Characteristics	No. (%)		Values	Sig.
		CL/P (n=38)	Control Group (n=76)		
Delayed motor development	No	29(76.31)	67(88.16)	2.672	0.102
	Yes	9(23.69)	9(11.84)		
Delayed speech development	No	11(28.95)	65(85.53)	36.493	0.000
	Yes	27(71.05)	11(14.47)		

CL/P: Cleft lip and or cleft palate.

diagnosed. Since possibly the children who were not recognized at birth inside the clinic had not been now collected, therefore we consider all workplace speech and language pathology documents in this place. In the research of Jalilevand et al., the results about CL/P prevalence in four west and north-west provinces of Iran indicated no differences in distribution between boys and girls [9]. Our study similarly suggested that CLP was not significant in girls and boys.

The total live births with CL/P in our study were 20 boys and 18 girls. The maximum common type was CLP, and the overall prevalence was 0.93 per 1000 live births. In the study of Namdar et al., this number was 1.2 [8] and it was obtained in west and north-west Iran (0.557, 0.352, 0.503, and 0.559), Tehran City (1.3), and Gorgan City (1.05) [9-11]; such variability can be attributed to the geographic place of ethnic origins of the population.

The cleft history in the family was determined in 26.31% of the cases and 2.63% of the control group with a significant difference. Similarly, in the research of Yanez-Vico, a significant relationship was observed between CL/P and cleft history in the family [14]. In this observation, results about consanguineous marriage had a significant difference. A total of 42.10% of cleft infants were offspring of consanguineous marriage, and 14.47% of the control group was also children of consanguineous marriage. In the study of Ünal-Logacev,

Table 4. Frequency of Variables of Surgical and Rehabilitation Services History

Variables		No. (%)
Surgical history	None	4(10.52)
	Delay	10(26.31)
	Without delay	24(63.15)
History of feeding counseling	None	4(10.52)
	Yes by doctor/nurse	32(84.21)
	Yes by speech & language pathologist	2(5.26)
History of speech and language assessment & consoling	None	13(34.21)
	Yes	25(65.78)
History of speech and language treatment	None	13(34.21)
	Quit	19(50)
	Discharge	6(15.79)
History of hearing assessment	None	5(13.15)
	Yes	33(86.84)

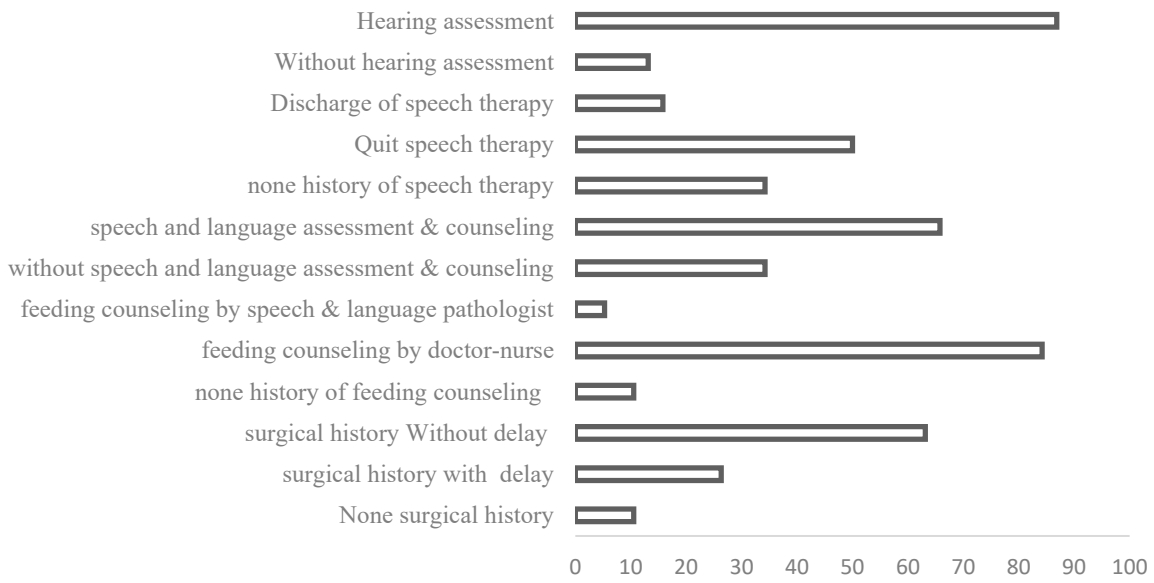

Figure 1. Percent of Surgery and Rehabilitation Services Experienced by Participants

20% of the cleft lip and palate patients were offspring of consanguineous marriage and approximately 30% had a family history of CL/P [15]. Maternal age at the time of infant's birth was more than 30 years in 52.63% of the cases and 57.90% of the control group without a significant difference. These results became identical to Chowchuen's study, which revealed that the percentage of mothers aged above 30 years with a child with CL/P was without a significant difference [16].

In our research, results about the maternal history of smoking were significantly different; however, only 10% of mothers in the case group had a smoking history. In China, Hong's study indicated that smoking prevalence amongst mothers was only 2.4% [17]. Findings associated with the mother's disease confirmed that the case and control groups were heterogeneous regarding the mother's disease, and the ratio was significant. A total of 15.98% of the CL/P group and 19.74% of the control group had a history of maternal disease. In the research of Ünal-Logacev, 7% of the mothers had a disease throughout their pregnancy, 21.4% indicated that they used medicine, and 51.8% indicated intense strain and pressure during pregnancy [15].

The results of the use of maternal medicine proved that 63.16% of mothers in the cleft group and 10.53% of mothers in the control group had no history of taking medicine during pregnancy. In Chowchuen's research, the mother's usage of self-medicine or a menstrual regulation supplement was significantly related to CL/P [16]. Preterm infant gestation was determined in 50% of cases, and an identical percentage was in the control group without a significant difference. Low birth weight (<2500 g) was determined in 47.37% of the cases and 10.53% of the control group with a significant difference. In Chowchuen's study, low birth weight became an important factor [16]. Fetuses with CL/P are at accelerated risk of having low birth weights but not premature delivery [18].

Child disease was observed in 71.05% of the CL/P cases and 2.62% of the control group in our research with a significant difference. The findings consistent with the Aljohar study suggest that the percentage of CL/P is significantly associated with defects, particularly with heart disease [19]. Based on the same results, it can be concluded that a substantial percentage of children with cleft lip or palate have different congenital anomalies together with heart, brain, respiratory, kidney, or multiple diseases (for example, concurrent coronary heart and respiratory disease). In the present study, more respiratory and coronary heart diseases were observed. The case and control groups were heterogeneous in terms of speech. A significant relationship was observed between the two groups regarding speech delay variables. Significantly, a large percentage of children with CL/P had delayed speech development compared to children of the control group. However, no significant relationship was observed between the two groups concerning motor delay variables.

Our Study about the history of surgery showed that approximately 37% of cases had no early surgical treatment. An overview of the history of feeding coun-

seling showed that mainly (approximately 84%) a doctor or nurse provided feeding instruction to mothers in the hospital. Moreover, our results from the history of speech and language assessment and counseling showed that approximately 66% of the cases had been assessed in speech and language but 34% of the children studied no longer had this status. Approximately one-third of the parents of children with CL/P did not refer to a speech therapist for speech and language intervention. Approximately 50% of cases left the speech therapy session before completion or discharge. Only 15% of cases stated that the assembly procedure was finished and discharged. The auditory assessment history statistics showed that the majority of children (approximately 87%) had a hearing assessment.

5. Conclusion

According to the importance of investigating the prevalence of CL/P and the environmental risk factors of CL/P, as well as studying the history of surgical and rehabilitation services provided to these children, it is essential to conduct a study to investigate these issues. In our research, the prevalence was approximately 0.93 per 1000 live births. CL, CP, and CLP prevalence was 0.17, 0.27, and 0.49, respectively. The overall prevalence was not significant in boys and girls. The variables of cleft history, maternal disease, consanguineous marriage, medicine history, low infant weight, child disease, and delayed speech development were significantly associated with CL/P. Most mothers of children with CL/P had a complete-term pregnancy. Approximately one-third of children with CL/P did not have access to early surgical procedures, speech, and language assessment, or counseling. On the other hand, most children received hearing assessments and maternal feeding instruction, and counseling.

Ethical Considerations

Compliance with ethical guidelines

The Ethics Committee of the Iran University of Medical Sciences approved this study (Code: IR.IUMS.REC.1400.578). All participants signed informed consent to participate in this study.

Funding

This study is taken from the master's thesis in speech-language pathology (SLP) approved by the Iran University of Medical Sciences with grant number 1400-1-6-21034.

Authors' contributions

Conceptualization: Arezoo Saffarian, Zahra Derakhshande; Nahid Jalilevand, Mohammadali Momeni; Methodology: Arezoo Saffarian, Nahid Jalilevand Jamileh Abolghasemi; Investigation: Arezoo Saffarian, Zahra Derakhshande; Data analysis: Zahra Derakhshande, Jamileh Abolghasemi: Writing – Original Draft: Arezoo Saffarian, Zahra Derakhshande; Writing – Review & Editing: All authors; Supervision: Arezoo Saffarian.

Conflict of interest

The authors declared no conflicts of interest.

Acknowledgments

The researchers appreciate and thank the participants who took part in this study.

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Function & Disability Journal
2022, Volume 5

مقاله پژوهشی

شیوع شکاف کام و لب و دسترسی به خدمات توانبخشی در جنوب غرب ایران: یک مطالعه ۱۰ ساله

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تاریخ دریافت: ۱۸ تیر ۱۴۰۱
تاریخ پذیرش: ۲۰ مرداد ۱۴۰۱
تاریخ انتشار: ۱۷ آبان ۱۴۰۱

چکیده

مقدمه شکاف لب/کام (CL/P) یکی از شایع ترین ناهنجاری هایی است که در ناحیه سر و گردن ایجاد می‌شود. علت این ناهنجاری چند عاملی است و بروز شکاف ممکن است تحت تأثیر عوامل قومیتی، نژادی، جغرافیایی و اجتماعی-اقتصادی باشد، بنابراین هدف از این مطالعه بررسی شیوع، عوامل خطر CL/P و دسترسی به خدمات توانبخشی در کودکان در جنوب غرب ایران بود.

مواد و روش‌ها این مطالعه مقطعی به صورت گذشته‌نگر داده‌های تولد جمع‌آوری‌شده از بیمارستان‌های شهرکرد را از ۳۰ اسفند ۱۳۹۰ تا ۳۰ اسفند ۱۴۰۰ مورد تجزیه و تحلیل قرار داد. همچنین مدارک این کودکان در دفاتر گفتار و زبان نیز جمع آوری شد. توزیع فراوانی، عوامل خطر و فراوانی خدمات توانبخشی دریافتی، مورد تجزیه و تحلیل قرار گرفت. برای ارزیابی عوامل خطر، برای مقایسه متغیرها به صورت تصادفی، ۷۶ کودک بدون این اختلال به عنوان گروه کنترل انتخاب شدند.

یافته‌ها شیوع کلی تقریباً ۰/۹۳ در ۱۰۰۰ تولد زنده بود. شیوع CL، CP و CLP به ترتیب ۰,۱۷، ۰,۲۷ و ۰,۴۹ بود. از ۳۸ نوزادی که با CL/P به دنیا آمدند، ۲۰ نوزاد (۵۲/۶۳ درصد) پسر و ۱۸ نوزاد (۴۷/۳۶ درصد) دختر بودند (P<۰/۰۵). متغیرهای سابقه شکاف، بیماری مادر، سابقه پزشکی مادر، وزن کم نوزاد و بیماری کودک به طور معنی داری با CL/P مرتبط بودند (P<۰/۰۵). تاخیر در رشد گفتار در کودکان مبتلا به CL/P به طور معنی داری مشاهده شد (P<۰/۰۵). همچنین، ۲۶,۳۱ درصد از این کودکان جراحی زودهنگام انجام نداده‌بودند، ۱۰,۵۲ درصد اصلا جراحی نداشتند و ۳۴,۲۱ درصد هیچ سابقه درمان گفتاری و زبانی نداشتند.

نتیجه‌گیری یافته های این مطالعه نشان داد که شیوع کلی شکافهای دهان ۰/۹۳ در ۱۰۰۰ تولد زنده بود. برخی از این کودکان به موقع به خدمات جراحی و توانبخشی دسترسی نداشتند، بنابراین باید برای بهبود دریافت خدمات جراحی زودهنگام و توانبخشی برنامه ریزی شود.

کلیدواژه‌ها:
شکاف لب، شکاف کام، شیوع، توانبخشی، ایران

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Cite this article as Derakhshandeh Z, Jalilevand N, Abolghasemi J, Momeni MA, Saffarian A. Prevalence of Cleft Lip and Palate and Access to Rehabilitation Services in the South-West of Iran: A 10-Year Study. Function and Disability Journal. 2022; 5:E51. http://dx.doi.org/10.32598/fdj.5.51

http://dx.doi.org/10.32598/fdj.5.51

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