

TONGUE-TIE TEST: SITUATIONAL DIAGNOSIS ABOUT THE APPLICABILITY OF THE PROTOCOL IN NEWBORNS IN DISTRITO FEDERAL

Teste da Linguinha: diagnóstico situacional sobre a aplicabilidade do protocolo em neonatos do Distrito Federal

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ABSTRACT

Purpose: to analyze the phonoaudiological practice in the applicability of the “Tongue-tie Test” in Distrito Federal. **Methods:** it was prepared a self-explanatory questionnaire, composed by 10 questions. The questionnaire was disposed in a specific website created for this purpose. Participated in this research 44 phonoaudiologists from Distrito Federal. The statistical analysis of data was initially performed in simple frequency tables and then in cross-frequency tables. **Results:** participated in this research phonoaudiologists experienced in several areas, public and private sector. Only 27.27% of the participants evaluate the lingual frenulum in infants; most evaluates less than one year. The phonoaudiologists is the best known professional in Distrito Federal which performs evaluation of the lingual frenulum in infants. **Conclusion:** most of the phonoaudiologists who evaluate the lingual frenulum in newborns do not use specific protocol for the analysis. The criteria used during the examination vary.

KEYWORDS: Lingual Frenum; Clinical Protocols; Evaluation

■ INTRODUCTION

The ankyloglossia, commonly known as tongue-tie, is defined by a few authors as a development anomaly, characterizing an alteration in the lingual frenulum, that results in limitations in the movements of the tongue, consequently, in alterations of the functions of the stomatognathic system, it can be visualized in different age groups, including newborns¹⁻⁶.

The incidence of this alterations is variable, since there are differences between the researchers regarding the used criteria for evaluation and diagnosis^{3,7-10}.

Researchers support that the evaluation of the lingual frenulum must be performed in infants, in order to diagnose earlier possible alterations in the oral functions^{2,7}. A study found that, in ankyloglossia, the spot of fixation of the frenulum in infants may vary and do not show changes during the first year of life. The authors concluded that there were no changes in the lingual frenulum of all the infants who took part in this study, both in terms of thickness and fixation of the tongue and the floor of the mouth¹¹.

This subject has been object of study of several professionals in the health sector, particularly phonoaudiologists active in the area of Orofacial Motricity. Due to these studies and frequent diagnosis of alterations of the lingual frenulum in older children, created the “Tongue-tie Test”¹².

This new neonatal test consists in the application of the Lingual Frenulum Evaluation Protocol for Infants, performed in children born in brazilian hospitals and maternity wards, before the medical

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Conflict of interest: non-existent

discharge, and can be performed in infants before the 6th month of life¹³.

The "Tongue-tie Test" was created in 2012, being stipulated as mandatory initially in the city of Brotas - São Paulo. Since then, several cities started to approve Municipal Laws concerning the obligation of the test⁵. Consequently, it was proposed and approved under Federal Law no. 13.002, in June 20th of 2014¹⁴, coming into force 180 days after the official publication.

It is believed that, in all the Brazilian territory, till the release of the Federal Law, few phonoaudiologists, whether from public or private network, were evaluating for lingual frenulum in newborns or were apt to perform the Tongue-tie Test. With the obligation of the test, professionals who were not evaluating the lingual frenulum in infants, or even in other age groups, started doing it.

The objective of this research was to analyze the phonoaudiological practice in the applicability of the Tongue-tie Test in Distrito Federal - DF.

■ METHODS

This research has been approved by the Ethics and Research Committee of Education of the Central Plateau Union - UNIPLAC/DF, under the number 750.975.

The research was achieved by a self-explanatory online questionnaire, composed by 10 questions (Figure 1), available in a specific website created for

this purpose, in the period of September to October 2014. The informations about the research and the Consent Form were made available in the website.

Participated in this research 44 phonoaudiologists. Under the inclusion criteria, were considered the phonoaudiologists acting in different cities of the Distrito Federal, regardless of the practice area. Exclusion criterion: phonoaudiologists from other states.

During the period of data gathering, the invitation to participate and the website's link were sent to the phonoaudiologists' e-mail, through APFDF – Professional Association of Phonoaudiologists of the Distrito Federal. The link was sent, also, for the e-mail of the phonoaudiologists who were not registered with the association, but those who have provided their e-mail addresses to collaborate with the research.

To perform this study, only one computer (Lenovo G400s) with internet access have been used.

The data gathered was disposed in a table created with MS Excel, organized automatically by the research website for statistical analysis. The data was treated statistically by the Software SAS®, version 9.4. Initially, the objective answers were analysed by simple frequencies and later the data was analysed in cross frequency tables. The descriptions made by the participants were considered and used in the discussion of this research.

QUESTIONNAIRE

Interviewee's initials: Age:
 Workplace: City: District:

Question 1 – On which area of Phonoaudiology do you work?

More than one option can be selected

- Audiology Dysphagia Educational Facial Aesthetics Forensic
 Hospital Language Orofacial Motricity Public Health Speech
 Other:

What is your time of practice?

In the case you work in more than one area, describe in the dialog box the areas of work and for how long you work on each area. Example: Audiology: 5 years / Educational: 3 years.

- 0-1 year 2-3 years 4-5 years 6-7 years 8-9 years 10 years or more.

Describe below

Question 2 – Work on which type of organization:

- Public Private Both

Question 3 – Performs lingual frenulum evaluation in infants?

- Yes No

If Yes, for how long?

- 0-1 year 2-3 years 4-5 years 6-7 years 8-9 years 10 years or more.

Question 4 – Performs lingual frenulum evaluation in other age groups?

- Yes No

If Yes, for how long?

- 0-1 year 2-3 years 4-5 years 6-7 years 8-9 years 10 years or more.

Question 5 – If you perform lingual frenulum evaluation in infants, do you use any specific protocol for standardization of the analysis and diagnosis?

Select only one of the fields below and describe the requested.

- I perform the evaluation and I use specific protocol.

Who is the author of the protocol?

I perform the evaluation, but I don't use a specific protocol.

Please, describe how the evaluation is performed.

I don't perform the evaluation.

Question 6 – At your workplace, any other professional performs the lingual frenulum evaluation in infants?

Yes No

Question 7 – Which professionals you know, in Distrito Federal, that perform the lingual frenulum evaluation in infants?

No one Dentist Nurse Phonoaudiologist Otolaryngologist

Other:

And how many professionals do you know, in Distrito Federal, that perform the Tongue-tie Test?

0 1 2 3 4 5

6 7 8 9 10 or more.

Question 8 – Do you find necessary to use a specific protocol for standardization of the analysis and diagnosis?

Yes No I don't know

Give your opinion (optional)

Question 9 – Do you think is necessary the obligation of this test throughout Brazil?

Yes No I don't know

Question 10 - Are you interested in training to apply the test?

Yes No

Figure 1 – Questionnaire

■ RESULTS

Participated in this research 50 phonoaudiologists, however, 6 (six) participations were disregarded because they were professionals from other states. The final sample was composed by 44 phonoaudiologists.

Phonoaudiologists active in different areas participated in this study, being 27,35% Audiology; 10,26% Dysphagia; 5,13% Educational; 0,85% Facial Aesthetics; 14,53% Hospital; 12,82% Language; 15,38% Orofacial Motricity; 4,27% Public Health; 8,55% Speech; and 0,85% other areas. It must be observed that in this item was allowed to select more than one option.

As to the period of professional experience in the indicated areas, the following data were obtained: 0-1 years: 5,13% (N=6); 2-3 years: 9,40% (N=11); 4-5 years: 17,95% (N=21); 6-7 years: 13,67%

(N=16); 8-9 years: 17,95% (N=21); 10 years or more: 35,90% (N=42).

Both professionals from public sector and private sector collaborated with the research, being 27,27% (N= 12) public; 31,82% (N= 14) private; and 40,91% (N= 18) from both sectors.

When asked if they perform lingual frenulum evaluation in infants, 27,27% (N= 12) of the participants said they perform the evaluation and 72,73% (N= 32) don't do it. Statistically, 33,33% of the evaluators work in the private sector; 41,67% work in the public sector; and 25% work in both sectors.

The percentage for period of experience of the phonoaudiologists who perform lingual frenulum evaluation in infants is showed on Figure 2. It is worth mentioning that one of the professionals who said to perform the evaluation, did not informed the period of experience in the evaluation.

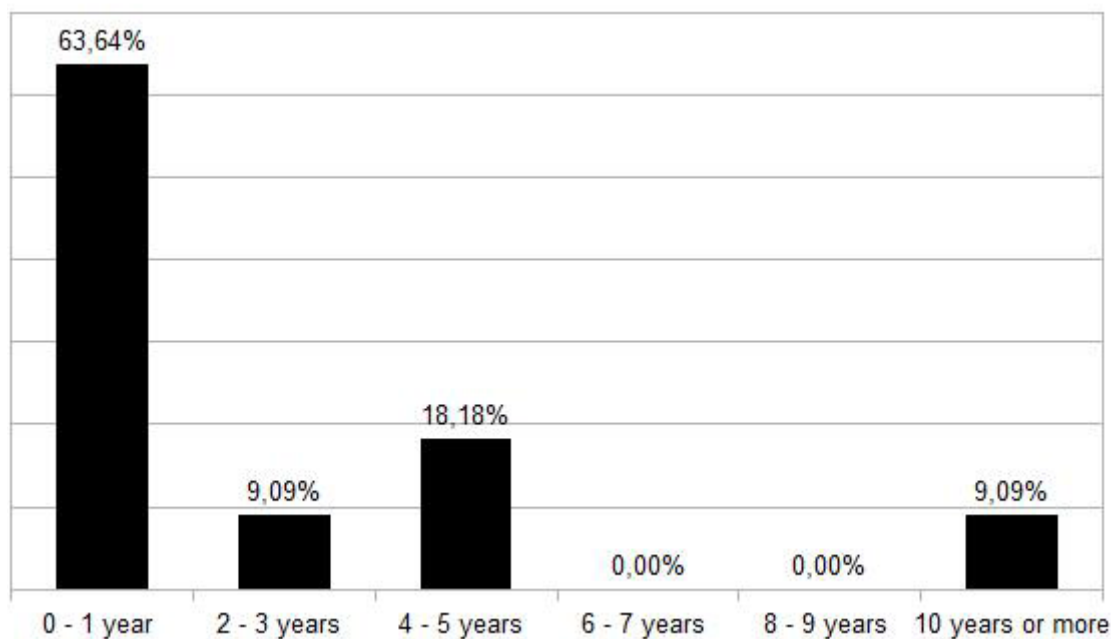


Figure 2 – Chart showing the percentage of experience in the lingual frenulum evaluation in infants

Regarding the lingual frenulum evaluation in other age groups, only 29,55% (N=13) of the phonoaudiologists perform the examination; 70,45% (N=31) don't perform the test.

The period of experience of the evaluators is presented on Figure 3. In this item one professional did not indicated for how long he performs the test.

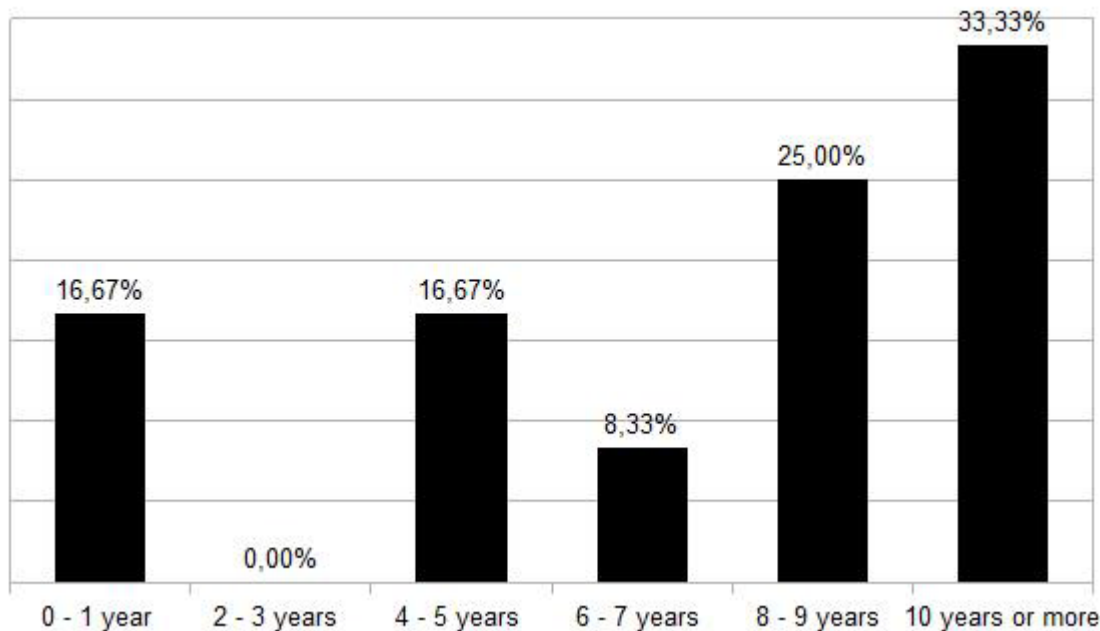


Figure 3 – Chart showing the percentage of experience in evaluation of the lingual frenulum in other age groups

To the professionals who perform the lingual frenulum evaluation in infants, it was asked if they use any specific protocol during the examination for standardization of the analysis and diagnosis. Only 25% (N=3) of the phonoaudiologists have said to use it and referred to the protocol proposed by Martinelli, Marchesan and Berrentin-Felix (2013); 75% don't use any protocol.

The phonoaudiologists were questioned about the existence of other professionals in their

workplace to perform the lingual frenulum evaluation in infants: 45,45% stated that are at least one other professional who does it and 54,55% answered that there is no other professional in their workplace.

When questioned about professionals known by them, in Distrito Federal, who perform the lingual frenulum evaluation in infants, it was obtained the data represented on Figure 4. Other professionals mentioned were pediatricians and milk bank staff.

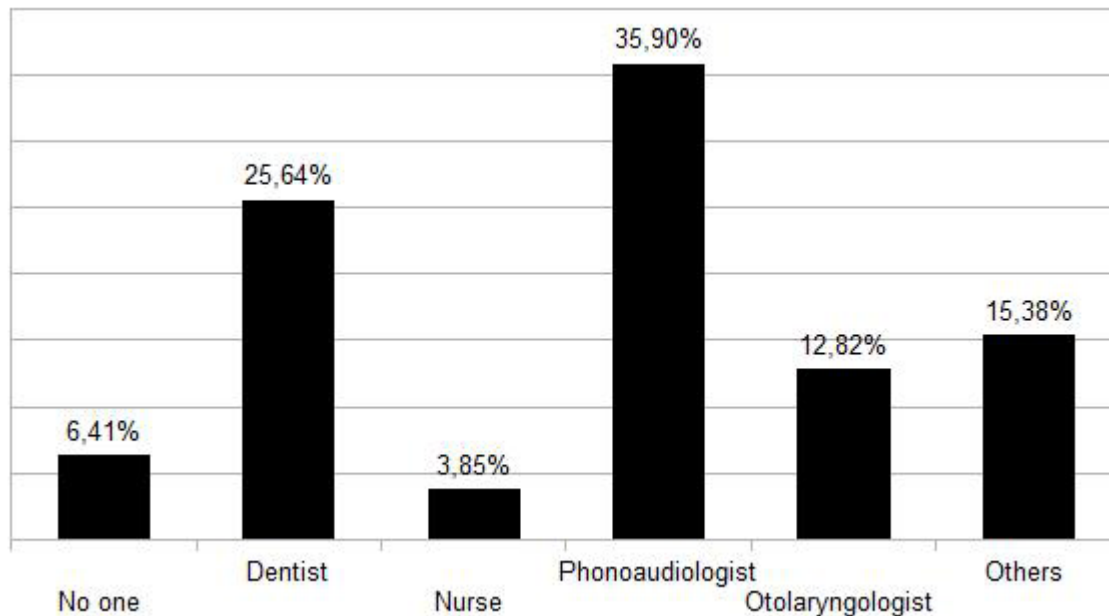


Figure 4 – Chart showing known professionals in Distrito Federal evaluating the lingual frenulum in infants

The phonoaudiologists were questioned about professionals known by them, in Distrito Federal, who perform the Tongue-tie Test: the majority, 54,54%, indicated not knowing any professional who perform the test; 18,18% know in average 1 (one) professional; 6,82% - two professionals; 6,82% - three professionals; 4,55% - four professionals; 2,27% - five professionals; and 6,82% of the participants indicated to know 10 or more professionals.

Concerning the opinion of the phonoaudiologists about the necessity of using specific protocol to standardize the analysis and diagnosis, 79,55% (N=35) of the participants believe there is need; 6,82% (N=3) do not think it is necessary; and 13,64% (N=6) had no opinion.

The statistic data shows that, between the professionals who evaluate the frenulum of infants; 66,67% find it necessary to standardize the test; 8,33% do not think it is necessary; and 25% had no opinion. Between the professionals who do not evaluate, 84,38% believe it to be necessary; 6,25% do not think it is necessary; and 9,38% had no opinion.

Between the professionals who said to perform the lingual frenulum evaluation in infants and do not use a specific protocol, 55,56% find it necessary to standardize the test; 11,11% disagree with the use of he protocol; and 33,33% had no opinion.

About the obligation of the test being performed throughout the country, 65,91% believe the law is necessary; 22,73% do not think it is necessary; and 11,36% had no opinion. Between the

phonoaudiologists who perform the lingual frenulum evaluation in infants, 66,67% find it necessary the test to be mandatory; 25% do not think is necessary; and 8,33% had no opinion. And between the professionals who do not perform the evaluation, 65,62% believe the law is necessary; 21,88% do not think it is necessary; and 12,50% had no opinion.

Regarding the interest of the phonoaudiologists in training to apply the test, 75% have interest and 25% do not have interest. Statistically, between the professionals who already perform the test 91,67% have interest in training and 8,33% have no interest.

■ DISCUSSION

Before the approval of the Federal Law no. 13.002/2014, which demands the fulfillment of the Lingual Frenulum Evaluation Protocol for Infants, there were questions from health sector's professionals about the obligation of another neonatal examination. The questionings highlighted that the evaluation was performed routinely, without the need of a new law^{12,15}. However, the oral cavity inspection in the first moments of life of the newborn, usually, was superficially performed, and could go unnoticed some alterations that could compromise the oral health of the newborn¹⁶. Also was not frequent the evaluation of the infants in the dental offices and otorhinolaryngologists¹. Therefore, the lingual frenulum altered, most of the times, would stay unnoticed until the start of talks, once, in at

least half of the cases, are damages in the speech somehow^{17,18}.

Marchesan reports that is common with children in other age groups to show damage in the speech for lack of diagnosis when they were still infants^{12,15}. The phonoaudiologist usually is the first professional to receive these patients^{12,18}.

It is noted that, between the phonoaudiologists who participated in this study, active in the public sector or the private sector, it was not common to perform the lingual frenulum evaluation in infants, since the majority (63,64%) of the professionals who affirmed to perform the evaluation only do it for less than a year. Between the professionals who perform the lingual frenulum evaluation on people of other age groups, 83,33% are experients in the evaluation, being considered the period of experience longer than four years.

It was possible to verify that 53,85% of the professionals who perform the lingual frenulum evaluation in people of other age groups do not evaluate newborns; and that 50% of the professionals who affirmed to do the lingual frenulum evaluation in infants do not perform the evaluation in other age groups. It is believed that the fact of the professionals, who have limited experience, only perform the evaluation in infants and do not evaluate people of other age groups can be related to the obligation of the Tongue-tie Test.

The literature mentions that the lingual frenulum evaluation do not have standardization, fitting the evaluator to decide the criteria used to evaluate and diagnose the alteration of the frenulum of the tongue^{8,19,20}. However, the booklet for the Tongue-tie Test¹³ suggests the use of the protocol proposed by Martinelli, Marchesan and Berrentin-Felix⁷. The phonoaudiologists who affirmed to use the specific protocol during the exam (25%) cited exactly this one as the one used.

The orientations to perform the Tongue-tie Test clarify that, in the first 48 hours of life, it must be performed the anatomical and functional evaluation, consisting in the observation of the posture of the lips at rest, positioning and shape of the tongue during the crying and visualization of the lingual frenulum. In case of doubt for the diagnosis or when there is no possibility of visualization of the frenulum, it must be performed a retest after 30 days of life. In the retest, besides the new anatomic and functional evaluation, it must be performed the anamnesis and non-nutritive and nutritive suction evaluation¹³.

Some of the professionals who do not use protocol commented how they perform the evaluation: *"I verify the effectiveness of the non-nutritive and nutritive suction in maternal breast"; "The clinical evaluation is discussed as a team and is*

based on prior knowledge of normality, but there is no evaluation protocol or intervention"; "I realize the evaluation through the frenulum view and I forward to the otorhino for action if I find relevant"; "After initial interview with pregnancy data, childbirth and breastfeeding, I observe with finger touch in the oral cavity, evaluate the handle of the baby to the breast and sucking"; "Wearing gloves, I evaluate the baby's sucking and the lingual frenulum anatomy". Another professional described who evaluates using non-nutritive sucking, and positions the baby's tongue with the opening of the lower lip, evaluating the tongue posture, also its appearance, in its anterior-lower portion. If it resembles a heart shape, the professional infers that there is an inadequacy of the lingual frenulum insertion.

It is possible to verify that the applicability of the exam has been diversified, not following specific parameters. It is believed that the evaluation, when performed in a objective manner, using a specific protocol, promotes better credibility of the exam to the family and even the professionals of the health sector. It is noted that 79,55% of the participants of this study believe that there is the necessity of using a specific protocol.

The vision of each professional regarding the evaluation should be valued, however, it is important to highlight that the standardization of the evaluation enables more reliable evaluation and more assertive diagnosis, as well as enabling epidemiological studies⁷.

It can be inferred that, in Distrito Federal, there is a lack of phonoaudiologists to apply the new neonatal examination. The population in Distrito Federal consists of approximately 2.852.372 inhabitants²¹, according to the Federal Council of Phonoaudiology²² the DF counted with 691 phonoaudiologists in September of 2014. Theoretically, the proportion of 2.42 professionals per inhabitant would be sufficient to meet the population's needs, since the recommendation is 1 phonoaudiologist to 10,000 inhabitants²³. However, clinical practice has another reality, since there is a wide variety of areas for speech therapists and considering that each area has its clinical specificity.

Based on this assumption the participants were questioned about the existence of another professional of the health sector to the lingual frenulum evaluation in infants in their workplaces. Also questioned to what other professionals they know in DF that make the evaluation in infants.

In this way, 45,45% (n=20) of the phonoaudiologists said that there are other evaluators at their workplaces. Statistically, there are other evaluators in the workplace 66,67% (n=8) of the phonoaudiologists also evaluate; and, among the participants who

do not evaluate infants, 37,50% (n=12) stated that there were professionals to carry out the evaluation.

The most indicated professionals who evaluate the lingual frenulum in infants in DF are the proper phonoaudiologists (35,90%), dentists (25,64%), otolaryngologists (12,82%) and nurses (3,85%). Other professionals cited were pediatricians and milk bank staff (15,38%), being that pediatricians were most cited. Some participants said they did not know any professional (6,41%).

The Federal Law does not specify which of the health area's professionals can apply the Tongue-tie Test and also left unsaid rules relating to its applicability. It is known that different professionals can evaluate the lingual frenulum in infants if they have training for this. However, when it comes to evaluating stomatognathic function, one can not avoid considering that phonoaudiologists, mostly experts in the field of Orofacial Motricity, are more suitable professionals to such procedure, as this area is concerned with the study of the structural and functional aspects of the orofacial and cervical regions²⁴.

Therefore, it is concluded that this professional should be part of the multidisciplinary team to evaluate and diagnose the changes of the lingual frenulum, since it is important to note the tongue function during the evaluation of the frenulum^{1,4,6,7,17,19} and not only the morphological aspect.

Some authors report that the diagnosis should be conducted with participation of a multidisciplinary team consisting of a pediatrician, dental surgeon and phonoaudiologist².

When asked about the number of professionals that research participants know in Distrito Federal which apply the Tongue-tie Test, the majority (54.54%) say they do not know any other professional. The fact that there are few professionals known in DF applying the evaluation protocol called «Tongue-tie Test» probably is due to the time duration that hospitals and maternity wards had to conform to the law enforcement given that the data were collected within the period of adjustment.

It was questioned the interest of phonoaudiologists in training in order to apply the new neonatal exam: 75% of participants stated being interested. It

is noteworthy that it is important to the health sector professionals having a study focused on improving the study of functions and orofacial anatomy, in order to be guaranteed the effectiveness of evaluations of the lingual frenulum and consequently being able to apply the Tongue-tie Test. It also highlights that the achievement of constant training will ensure greater safety for the professional during the evaluation of the lingual frenulum and increase the quality of attendance to newborns²⁵.

It is worth remembering that evaluation that considers only the anatomical aspects is not set to Tongue-tie Test, since the application of this protocol requires anatomofunctional evaluation.

Before the approval of the Federal Law, several Brazilian states had approved municipal laws, this being a reflection that the Tongue-tie Test was well accepted by the population. In this study, we aimed to also check the acceptance of the phonoaudiologists themselves regarding the obligation of the examination. We found that the majority, 65,91%, is in accordance with the new law. However, 22,73% believe it is unnecessary and 11,36% of the professionals had no opinion on the subject.

Some authors believe that the «Tongue-tie Test» should be routine in hospitals to prevent the damage caused by ankyloglossia⁵.

It is believed that further studies are necessary for a more detailed analysis of the parameters used by health care professionals during the evaluation of the lingual frenulum in infants, being conducted not only in the population of phonoaudiologists, but also in a larger number of participants.

■ CONCLUSION

Most phonoaudiologists who participated in this study and that stated to evaluate newborns had no experience in the lingual frenulum evaluation of infants before the approval of the Federal Law. Those professionals have performed the test in a subjective manner, without the use of a specific protocol, having different criteria to each other for the application called «Tongue-tie Test».

RESUMO

Objetivo: analisar a atuação fonoaudiológica na aplicabilidade do Teste da Linguinha no Distrito Federal. **Métodos:** foi elaborado um questionário autoexplicativo, composto por 10 questões. O questionário foi disposto em um site específico, criado para tal fim. A amostra da pesquisa foi composta por 44 fonoaudiólogos do Distrito Federal. A análise estatística dos dados foi realizada inicialmente em tabelas de frequências simples e posteriormente em tabelas de frequências cruzadas. **Resultados:** participaram da pesquisa fonoaudiólogos experientes em diversas áreas de atuação, do setor público e privado; apenas 27,27% dos participantes avaliam o frênulo lingual em bebês, a maioria avalia há menos de um ano. O profissional mais indicado a realizar a avaliação do frênulo lingual em bebês, no Distrito Federal, é o fonoaudiólogo. **Conclusão:** a maioria dos fonoaudiólogos que avaliam o frênulo lingual em neonatos não utilizam padronização durante a análise. Os critérios utilizados durante o exame são variados.

DESCRIPTORIOS: Freio Lingual; Protocolos Clínicos; Avaliação

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<http://dx.doi.org/10.1590/1982-021620151768915>

Received on: June 18, 2015

Accepted on: July 28, 2015

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