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QUALIDADE DE VIDA DO RESPIRADOR BUCAL:
UMA REVISÃO SISTEMÁTICA

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UMA REVISÃO SISTEMÁTICA

Trabalho de Conclusão de Curso apresentado ao Curso de Especialização em Ortodontia da Faculdade de Odontologia da Universidade Federal do Rio Grande do Sul, como requisito parcial para obtenção do título de Especialista em Ortodontia.

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RESUMO

SCHWARZBACH, Marília. **Qualidade de vida do respirador bucal: uma revisão sistemática**. 2018. 27 f. Trabalho de Conclusão de Curso (Especialização em Ortodontia) – Faculdade de Odontologia, Universidade Federal do Rio Grande do Sul, Porto Alegre, 2018.

Objetivo: Verificar se a respiração bucal tem influência na qualidade de vida dos indivíduos. Materiais e métodos: Foi realizada uma busca nas bases de dados: Scielo, PubMed, Bireme (LILACS, BBO, Medline) e Web of Science, incluindo estudos de língua inglesa, portuguesa e espanhola e realizados em humanos. Foram excluídos os estudos do tipo: relato ou série de casos, revisões de literatura e revisões sistemáticas. Resultados: Foram encontrados 5666 títulos inicialmente e selecionados 16 resumos que se relacionavam com o assunto. Ao final da análise dos textos completos, 5 artigos compuseram a pesquisa e foram classificados de acordo com sua qualidade de estudo pela escala Newcastle-Ottawa. Diferentes protocolos de avaliar a qualidade de vida foram encontrados entre os estudos incluídos, e dois utilizaram questionários desenvolvido por pesquisadores. As pesquisas geralmente confirmam que a respiração bucal tem influência na qualidade de vida dos indivíduos; no entanto, eles não provam a sua influência. Foi identificada uma ausência significativa de evidências, relacionadas ao tema específico. Com base na análise da amostra final de artigos, concluiu-se que a respiração bucal parece ter um impacto sobre a vida de indivíduos com este padrão respiratório, porém a intensidade desse impacto não é clara. Além disso, também é evidente que estudos adicionais são necessários devido à falta de evidências associadas a essa área de pesquisa.

Palavras-chave: Respiração bucal, Qualidade de vida, Respiração.

ABSTRACT

SCHWARZBACH, Marília. **Qualidade de vida do paciente respirador bucal: uma revisão sistemática**. 2018. 27 f. Trabalho de Conclusão de Curso (Especialização em Ortodontia) – Faculdade de Odontologia, Universidade Federal do Rio Grande do Sul, Porto Alegre, 2018.

Abstract: To determine whether or not mouth breathing affects individual quality of life. Materials and methods: A search of databases was performed using Scielo, PubMed, Bireme (LILACS, BBO, Medline) and Web of Science, including studies in English, Spanish and Portuguese. Case reports, case series, literature reviews and systematic reviews were all excluded from this research. Results: Initially, 5666 articles were found and selected 16 abstracts that were related to the subject. By the end of the analyses of the full texts, 5 articles composed the research and were classified according to the Newcastle-Ottawa scale. Different protocols to assess quality of life were found among the included studies, and two questionnaires were developed by researchers. The researches generally confirmed that mouth breathing has an influence on the quality of life of individuals; nevertheless they do not prove its influence. Significant lack of evidence, related to the specific subject, was identified. Based on the analysis of the final sample of articles, it was concluded that mouth breathing appears to have an impact on the lives of individuals with this breathing pattern, however the intensity of this impact is not clear. Besides this, it is also apparent that further studies are required due the lack of evidence associated with this area of research.

Keywords: Breathing, Mouth breathing and Quality of life

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1 INTRODUÇÃO

A respiração, como uma função vital do ser humano, exerce uma direta influência sobre a manutenção da organização de todo o sistema estomatognático, músculos, dentes e ossos (FERLA et al., 2008). De acordo com Piva et al. (2014), um indivíduo em repouso tem o padrão de respiração predominantemente nasal, tendo como características o selamento labial e/ou lingual e o ar sendo inalado e exalado pelo nariz. Este tipo de respiração é o ideal para manter a estabilidade do sistema estomatognático.

A expressão “respiração bucal” é utilizada para conceituar indivíduos que substituem o padrão respiratório nasal pela respiração predominantemente bucal ou mista. O termo é aplicado quando esse padrão de respiração se faz presente por mais de seis meses (PIVA et al., 2014; POPOASKI et al., 2012)

A etiologia da respiração bucal está relacionada com vários fatores, tais como a hipertrofia de adenoide, tonsilas e conchas nasais, desvio de septo (se houver obstrução nasal), rinite alérgica, deformidades nasais e faciais, e, mais raramente, corpos estranhos (POPOASKI et al., 2012)

Quando o padrão respiratório ocorre de forma inapropriada, acarretando o uso de uma respiração bucal de suplência, podem ser observadas inúmeras alterações no organismo. As mais importantes, consequências da respiração bucal, são: alterações craniofaciais e dentárias, dos órgãos fonoarticulatórios, corporais, comportamentais e das funções orais. Há na literatura outras características mais específicas da área odontológica, como: olheiras, olhar vago, lábio superior curto e incompetente, lábios ressecados, vedamento labial inadequado; hipotonia, hipofunção dos músculos elevadores da mandíbula, má oclusão, além de desequilíbrio funcional da deglutição, sucção e fonação (FERLA et al., 2008; MENEZES et al., 2011).

Tendo por base estudos epidemiológicos, foi observado que a respiração bucal pode ser considerada um problema de saúde pública, pois entre 10% a 25% da população apresenta algum prejuízo respiratório e, portanto, tendo consequência na qualidade de vida dos indivíduos (NAGAE et al., 2013). Inicialmente a expressão “qualidade de vida” era associada com a melhoria das condições de vida, especialmente ligada à aquisição de bens materiais. Posteriormente, entretanto, o termo foi associado com o estado psicológico, físico e social, além dos aspectos econômicos. Portanto, a qualidade de vida relacionada à saúde é um termo contemporâneo e frequentemente usado em meios científicos (SEIDL, 2004).

A definição contemporânea do termo relaciona os aspectos de saúde física e mental de um indivíduo, assim como, o grau de sua independência, sua relação na sociedade e com a natureza. Em uma sucinta explicação, pode ser caracterizada como a satisfação pessoal em relação à própria vida. Embora a *World Health Organization* (1948) a defina como o bem estar físico, psicológico e social e não meramente a falta de doença, ainda não há uma definição universalmente aceita para esse termo (AKRANAVICIUTE; REZEVICIUS, 2007; SUSNIENE; JURKAUSKAS, 2009; PEREIRA; TEIXEIRA, 2012). Fica evidente que o conceito sobre a qualidade de vida é muito amplo e inclui aspectos objetivos e subjetivos da vida (MONTEIRO et al., 2010).

Existem variadas formas de se avaliar a qualidade de vida. A forma mais comum de avaliá-la é através de questionário, sendo que diversos foram criados e validados como instrumentos legítimos de avaliação.

Alguns autores acreditam que a respiração bucal pode ter um impacto negativo na qualidade de vida, não apenas na respiração, mas também consequências funcionais e comportamentais. Portanto, concluem que não há dúvidas sobre os sérios prejuízos que a respiração bucal tem sobre a qualidade de vida do paciente (MILANESI et al., 2014; POPOASKI et al., 2012; CAMPAHA; FREIRE; FONTES, 2008). Há, entretanto, outros autores que demonstram que há pouca evidência para suportar a teoria de que a respiração bucal tenha uma influência negativa na qualidade de vida dos indivíduos (NEIVA; KIRKWOOD; GODINHO, 2009; CESAR; SILVA; BALDRIGUI, 2016).

Devido à falta de evidência, o presente estudo teve por objetivo avaliar se a respiração bucal tem influência na qualidade de vida dos pacientes. Para isso, foi realizado um levantamento na literatura, pesquisando nas diferentes bases de dados para esclarecer sobre esse assunto.

2 ARTIGO CIENTÍFICO

SYSTEMATIC REVIEW

ORTHODONTICS

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QUALITY OF LIFE OF MOUTH BREATHING PATIENTS: A SYSTEMATIC REVIEW

Abstract: This review aimed to determine whether or not mouth breathing affects the quality of life of people. A search of databases was performed using Scielo, PubMed, Web of Science and Bireme (Lilacs, BBO, Medline) and including studies in English, Spanish and Portuguese. Prisma's recommendation was followed in order to select evidences in which two reviewers extracted data and compared results. Initially, 5.666 articles were found. Applying the inclusion, exclusion criteria and further analysis, only 5 remaining articles were considered suitable for inclusion in this research. Articles were classified according to the Newcastle-Ottawa scale version for cross-sectional studies. We found that different methodologies were used to assess quality of life among the included studies, such as OHIP-49, CPQ, Short form-36 and a questionnaire developed by researchers. The researches generally confirmed that mouth breathing has an influence on the quality of life of individuals; nevertheless they do not prove its influence. Significant lack of evidence, related to the specific subject, was identified among the selected studies. Based on the analysis of the final sample of articles, it was concluded that mouth breathing appears to have an impact on the lives of individuals with this breathing pattern, however the intensity of this impact is not clear yet. Furthermore, it is also apparent that more studies are required due to the lack of strong evidence associated with this area of research.

Keywords: Breathing, Mouth breathing and Quality of life

INTRODUCTION

Breathing, as a vital function of the human body, has a direct influence on the maintenance and the organization of the entire stomatognathic system, muscles, teeth and bones. The predominant breathing pattern of an individual in rest position is nasal breathing, where the lips are sealed and air is exhaled and inhaled through the nose. This type of breathing is ideal to maintain the stability of the stomatognathic system^{1,2}.

The term "mouth breathing" is used to describe individuals that replace the normal nasal breathing pattern with predominantly oral, or mixed pattern of breathing. The term is applied when the breathing pattern is observed for more than six months^{2,3}.

The etiology of mouth breathing can be related to several factors, such as hypertrophy of the adenoids, palatine tonsils and nasal turbinates, deviated septum (if any nasal obstruction is present), allergic rhinitis, nasal and facial deformities, and more rarely, foreign bodies³. There appears to be consensus in databases that when an individual's respiratory pattern is altered, resulting in a mouth breathing pattern, numerous changes can be observed in the body¹.

There are significant physiological changes that may occur as a result of mouth breathing. Alteration of craniofacial structures, jaws and alignment of the teeth, changes speech organs, as well as physical, behavioral and oral functions can all be observed. There are some other physiological changes, described in the literature, that can be associated with mouth breathing such as; vacant eyes, dark circles under the eyes, chapped and dry mouth, oral ulcers, inadequate lip seal; hypotonic lip, mandibular elevator muscle dysfunction, malocclusion, and disorders of swallowing, sucking and speech^{4,5}. The set of alterations caused by mouth breathing are also described as "mouth breathing syndrome" by a number of researchers⁴.

Based on epidemiological studies, it was observed that mouth breathing may well be considered a public health issue. Experiences with some kind of respiratory impairment are observed between 10% to 25% of the population which is believed to have a consequence on an individual's quality of life⁶.

Initially the term "Quality of Life" was associated with improvements in living standards, mainly linked to acquire material goods. Later, however, the term was used in relation to psychological, physical and social aspects, in addition to those economic factors. Therefore, health-related quality of life is a contemporary term that it is often used in the scientific fields⁷.

The contemporary definition relates the physical and mental health aspects, as well as the degree of independency, relationships in society and with nature. It can be summarized as the satisfaction of an individual with his or her own life. Although the World Health Organization (W.H.O.) defines it as physical, physiological and social well-being, and not merely to the absence of disease, there is still no universally accepted definition of what is termed “Quality of Life”^{8,9,10,11}. It is clear, therefore, that the concept of quality of life is a very comprehensive subject and includes objective and subjective aspects¹².

There are several methods to evaluate the quality of life. The usual way to assess is using a questionnaire, and there is countless examples of it that have been created and validated as legitimate quality of life assessment tools.^{13, 14, 15}.

Some researchers believe that mouth breathing can have a negative impact on quality of life and not only has a negative role in respiration, but also has behavioral and functional consequences. They conclude therefore, that there is no doubt that mouth breathing causes serious damage to the patient’s quality of life^{3,16,17}. Other scientists however, feel that there is little evidence to support the theory that mouth breathing has a negative impact on the quality of life of patients^{18, 19}.

The aim of this study was to assess whether mouth breathing affects the quality of life of individuals or if that does apply any impact. A search of the literature, using different databases, was conducted.

METHODS

A systematic review was conducted and its hypothesis was that mouth breathing does have a negative influence on the quality of life of both adults and children with this breathing pattern. All stages of the selection process and analysis of the texts were based on PRISMA's recommendations²⁰.

The following question was researched in the literature: Does mouth breathing influence the quality of life?

In order to select the studies included in this review, a search was conducted in the following databases: PubMed, Scielo, Web of Science (LILACS, BBO, Medline) and Bireme, using the following terms individually or in combination: "Respiração bucal", "Qualidade de vida" and "Respiração" in Portuguese. Also "Mouth breathing", "Quality of life" and

"Breathing" in English and "Respiración bucal", "Calidad de vida" and "Respiración" in Spanish. The descriptors used are listed in the Medical Subject Headings (Mesh).

This systematic review only included studies relating to the quality of life of mouth breathers performed on humans and published in ~~either~~ English, Spanish or Portuguese.

Case reports, case series, literature reviews and systematic reviews were all excluded from this search.

Two examiners independently selected the studies identified in the search of the databases according to the inclusion/exclusion criteria. Following the inclusion and exclusion criteria, each examiner analyzed the various studies and compared their findings. Any disagreement between the examiners was resolved by consensus. As a result, the articles selected by both examiners were independently evaluated in two phases. To begin with the first phase, examiners verified the abstract of each study and selected the ones that were suitable for this review. Following this, in the second phase of analysis, the articles from this remaining group were analyzed in full text according to PRISMA's recommendation. The evidences included in this last phase were classified in relation to its sample size, author and year of publication, country of origin, type of Study, methodology of assessment of quality of life and outcomes to quality of life.

In order to assess the quality of the selected studies was used the Newcastle-Ottawa scale adapted for cross-sectional studies. This tool is based on three categories: group selection, comparability between groups, and outcome or exposure assessment. The selected articles were classified according to the Newcastle-Ottawa scale guidance as shown in the Table 1.²¹

Table 1. Example of quality assessment of the cross-sectional studies based on the Newcastle-Ottawa scale.

STUDY	SELECTION*		COMPARABILITY**	OUTCOME***		SCORE****	
	Diagnosis of mouth breathing ¹	Representativeness and selection of individuals with mouth breathing ²	Assessment of quality of life ³	Control of confounders ⁴	Statistics ⁵	A clear impact on quality of life ⁶	
Article	◊	◊	◊◊	◊	◊	◊	7

* A maximum of 4 points; ** a maximum of 1 point for each item; *** a maximum of 1 point for each item; **** a maximum of 7. ◊ 1 point.

¹ a) Clinical examination with independent validation ◊, b) without clinical examination or based on self reports, c) no description.

² a) Individuals with mouth breathing in a defined catchment area or community, random sample, sample calculation ◊, b) not satisfying requirements in part (a) fully, c) not stated.

³ a) Validated measurement tool ◊◊, b) Non-validated measurement tool, but the tool is available or described ◊, c) No description of the measurement tool.

⁴ a) Adjustment for confounders ◊, b) no description related to the adjustment analysis for confounding variables.

⁵ a) The statistical test used to analyze the data is clearly described and appropriate ◊, b) The statistical test is not appropriate, not described or incomplete.

⁶ a) There was a significant outcome relating the subjects ◊, b) There was an doubt or a limited outcome related to the subject.

RESULTS

As result of the search, it was initially identified 5.666 titles. Sixteen of them were selected as they were related to the subject. Following to the first phase, with the analysis of their abstracts six more articles were excluded as they had no direct relation with the subject and / or for meeting the exclusion criteria.

Only ten articles were included in the study group as they met all the inclusion criteria previously outlined.

Moving to the second phase, after methodological analysis of the remaining articles a further five articles were discarded as they intended to investigate mouth breathing patterns and correlations to factors unrelated to the subject of this review. As a result, they did not present methodologies that were acceptable to the proposed objectives of this study as outlined. In summary, five articles were included in the final study group and were subjected to further evaluation and assessment. The selection process is outlined in figure 1.

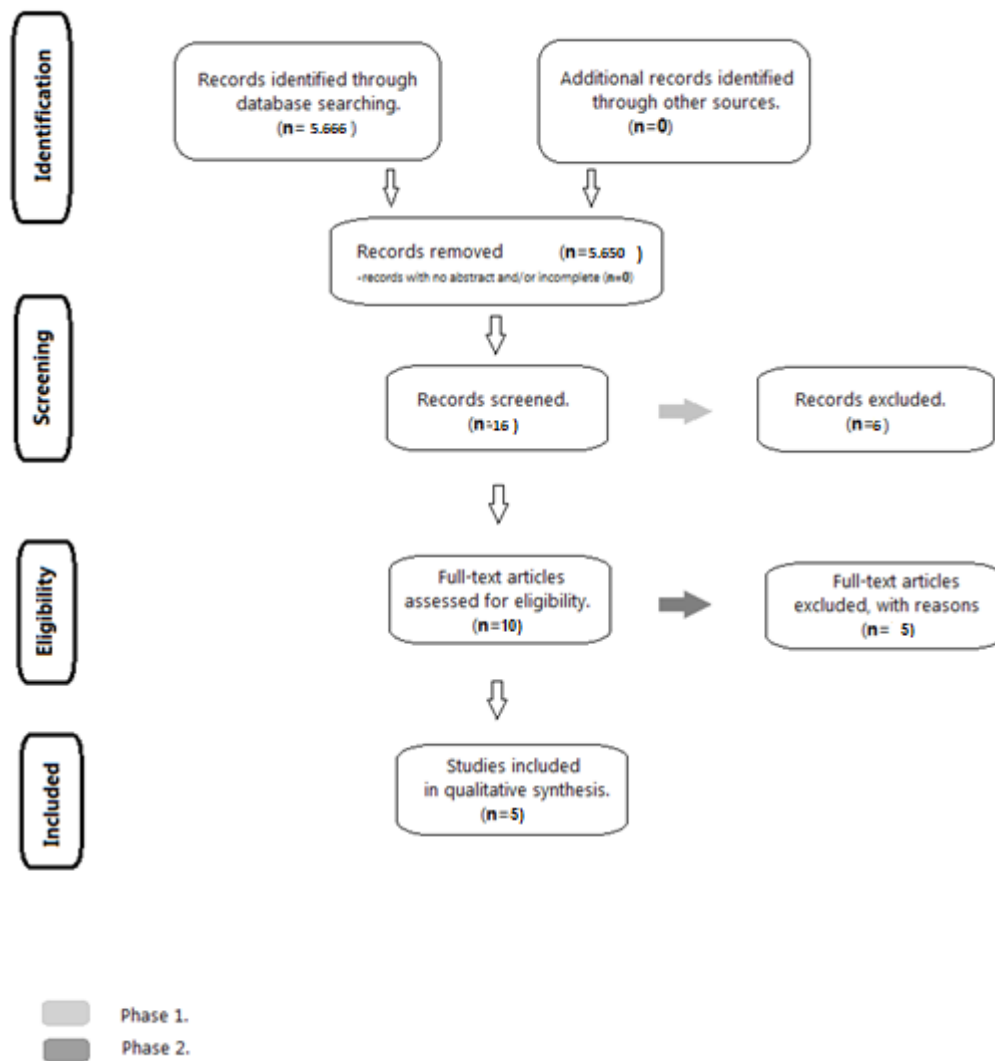


Figure 1. Flow diagram of the selection process in accordance to the PRISMA guidelines.

The initial search resulted in 16 articles which were considered to relate to the subject area of this review. Table 2 describes the reason why ten articles failed to meet the inclusion criteria in phase 2.

Table 2. Excluded articles and the criteria used for their removal.

Authors (year)	Exclusion criteria
PHASE 1	
Abreu RR et al (2009) ²²	It is not related to patients' quality of life.
Cunha RA et al (2014) ²³	It is not related to patients' quality of life.
Piva F et al (2014) ²	It is not related to patients' quality of life.
Rosen CL et al (2002) ²⁴	It was related to sleep-disorders, unrelated to mouth breathing.
Santamaría AC, Fredes FC (2017) ²⁵	It is not related to patients' quality of life.
Ungkanont K, Areyasathidmon S. (2006) ²⁶	It was related to sleep-disorders, unrelated to mouth breathing.
PHASE 2	
Locker D, Jokovic A, Tompson.B (2005) ²⁷	It compared a group with dental caries with a group with mouth breathing and it evaluated the quality of life between these two groups of patients.
Nagae MH et al (2013) ⁶	It compared mouth breathing with oronasal breathing.
Uhlig SE et al (2015) ²⁸	It focused on the postural adaptations as a consequence of mouth breathing and quality of life.
Ribeiro AF et al (2016) ²⁹	It focused on the temporomandibular joint adaptations as a consequence of mouth breathing and quality of life.
Carminatti M et al (2017) ³⁰	It focused on the impact of dental caries, malocclusion and oral habits on the quality of life of preschool children.

The five remaining studies were from Brazil and each research used different methodologies to evaluate patient's quality of life, as described in Table 3^{3, 16, 31, 32, 33}.

Table 3. Selected articles and their characteristics.

Author and year of publication	Country	Type of study	Sample size	Age	Methodology of assessment of quality of life	Outcomes related to quality of life
Strine PJS et al (2011) ³¹	Brazil	Transversal	30	18-25 years	OHIP-49	Negative influence on the Oral Health Quality of Life questionnaire.
Leme MS, Barbosa TI, Gavião MBD. (2013) ³²	Brazil	Transversal	328	8-14 years	CPQ	Negative influence on the Oral Health Quality of Life questionnaire.
Popoaski C et al (2012) ³	Brazil	Transversal	71	4-17 years	Specific questionnaire made by the authors	Negative impact, but more studies are needed.
Milanese JM et al (2014) ¹⁶	Brazil	Transversal	44	18-30 years	Short Form-36 (SF-36)	Slight impact on quality of life during the adult phase.
Leal RB et al (2016) ³³	Brazil	Transversal	1911	9-10 years	MBQoL questionnaire Specific questionnaire made and validated by the authors	Negative influence on the Oral Health Quality of Life questionnaire.

Each study used different questionnaires to evaluate quality of life. Strine et al.³¹ aimed to analyze quality oral life with Oral Health Impact profile (OHIP-49). Leme et al.³² assessed the impact of Oral Health on Quality of Life with the use of a questionnaire called Children perceptions Questionnaires (CPQ), divided into two groups CPQ (8-10) and CPQ (11-14) according to the children's ages. Milanese et al.¹⁶ assessed quality of life using the Short Form-36 questionnaire (SF-36). Popoaski et al.³ and Leal RB et al. (2016)³³ developed and validated a questionnaire, Mouth Breather Quality of Life (MBQoL) on a previous pilot study.

Strine et al.³¹ assessed orofacial dysfunction, which includes mouth breathing, and concluded that it can influence the quality of oral life. For Leme et al.³² oral habits can negatively impact the quality of life. Furthermore, orofacial dysfunction is associated with a bad quality of life in individuals with oral habits. As in the previous study, breathing is a criterion for evaluating the orofacial dysfunction, and it can therefore be considered as an important factor in orofacial dysfunction, and consequently, in quality of life. Popoaski et al.³ indicate that mouth breathing syndrome appears to be related to a negative impact on the quality of life of individuals. However, they noted that more studies are needed to validate their questionnaire as an instrument to assess quality of life. Milanese et al.¹⁶ reveals that mouth breathing has consequences on respiratory function, even in adulthood, with a decrease in respiratory muscle strength and functional exercise capacity. However, this study found that mouth breathing had little implication on individual quality of life. Leal et al.³³ evaluated

a large sample size of 1911 children aging from 9 to 10 years, diagnosing 54.8% of the children as mouth breathers and with a poor quality of life in comparison to nasal breathers.

The methodological quality of the selected articles was assessed according to the Table 4. The outcome was that two of the articles had 3 points, two had 4 points and 1 had 5 points using the scale up to 7 points.

Table 4. Quality assessment of the cross-sectional studies based on the Newcastle-Ottawa scale.

STUDY	SELECTION		COMPARABILITY		OUTCOME		SCORE
	Diagnosis of mouth breathing	Representativeness and selection of individuals with mouth breathing	Assessment of quality of life	Control of confoundours	Statistics	A clear impact on quality of life	
Strine PJSA et al. (2011) ³⁰			◊◊		◊		3
Leme MS, Barbosa TI, Gavião MBD. (2013) ³¹			◊◊		◊		3
Popoaski C et al. (2012) ³	◊	◊	◊	◊			4
Milanese JM et al. (2014) ¹⁶	◊	◊	◊◊				4
Leal RB et al. (2016) ³²	◊	◊	◊◊			◊	5

◊ 1 point.

DISCUSSION

In a review, Campanha, Freire, Fontes¹⁷, raised and claimed that mouth breathing is directly related to a negative impact on quality of life. They cited many examples of this impact, mentioning some negative characteristics that affect the lives of individuals with that type of breathing. Cunha et al.²³ conceptualize and characterize the mouth breathers and explain the consequences that this type of breathing causes. However, it does not clarify if the patient's quality of life was assessed or how was performed its evaluation. These are some examples of the many articles investigating this subject. Therefore, the present systematic review came to prove that studies with the same purpose as this review exist in a limited number.

Many types of questionnaires were created to assess Quality of life, such as WHO10L-100, developed by the *World Health Organization* (WHO), as well as Short Form-36 (SF-36) and Child Perceptions Questionnaire (CPQ). CPQ is a specific measurement tool to evaluate quality of life in children.^{13, 14, 15} Quality of life is a wide subject and also its assessment. This

study observed that there is much variation amongst authors on the assessment of quality of life. In the five articles selected in this review, five different methods were used to evaluate the quality of life in individuals. Therefore, the comparison among them became difficult.

There is an association between breathing and quality of life and therefore it is essential to pay attention to it²⁶. Aside from the subject discussed in this research, quality of life is related to many other topics and scientific fields. Consequently, it is important to have a legitimate assessment tool for evaluating quality of life to allow a better comparison between published studies.

The final group of articles submitted for analysis of data collection was based on five articles. Two of them presented the topic of orofacial dysfunction, being evaluated by NOT-S (Nordic Orofacial Test-screening). As one of the NOT-S criteria was the breathing pattern, these articles showed that orofacial dysfunction is related to a poor quality of life. However, it was unclear whether it was specifically the mouth breathing that caused a worsening in quality of life or whether other criteria were considered in NOT-S evaluation that can be considered as contributing factors. For this outcome from these two articles no conclusion can be drawn on whether or not mouth breathing has a specific impact on the quality of life for individuals, as it was not evaluated specifically^{31,32}.

One of the studies divided individuals into two groups, namely mouth breathers and nasal breathers. Each group was submitted to a specific questionnaire, designed by the authors, to assess their quality of life. It is clear that the findings of this study are not fully reliable, as this questionnaire has not been tested and / or applied previously in order to prove its efficiency. However, the authors are comfortable saying that there was a significant difference in the results between mouth and nasal breathers. The conclusions of this study should stimulate researchers to test their questionnaire, validating it as a tool to assess quality of life³.

One study analyzes if the breathing pattern had influence on the quality of life of adults, who were mouth breathers when they were children. To evaluate the quality of life, the researchers used the Short Form-36 (SF-36) questionnaire. The results showed that mouth breathing during the childhood had a small negative impact on the quality of life in the adulthood of this sample. Nevertheless, the object of this review was to determine if the quality of life is negatively impacted by the amount of time that the individual has the mouth breathing pattern. However, if the adult phase was slightly impacted because of the mouth breathing pattern, it is possible to predict that quality of life during childhood was more severely impacted. Unfortunately, this was not proven¹⁶.

The last selected study presented results similar to another study¹⁶, and it analyzed the impact of mouth breathing pattern on the quality of life of schoolchildren from 9 to 10 years old. The researchers developed and validated a questionnaire, Mouth Breather Quality of Life (MBQoL) and used other questionnaire to evaluate sociodemographic data and health-related aspects. They performed clinical examination to diagnose the children as mouth or nasal breather. The conclusion was that the negative impact of mouth breathing on quality of life was undeniable. Children aging 9 years had a poorer quality of life than those aging 10 years, possibly because of the better health conditions due to previous treatment or improvement of their immunity due to aging. Also, mouth breathing patients had varied abnormalities that most likely exerted a negative effect on growth, development and quality of life, showing the importance of early diagnosis and treatment³³.

Although the search in the database identified a wide range of related studies, the fulfillment of this systematic review has shown that there is a clear shortage in literature concerning this issue and further studies are needed with more consistent methodologies and specific results about the subject.

CONCLUSION

Generally, the evidences point to the possible negative impact that mouth breathing brings to the quality of life of individuals. However, further studies using a more standard methodology, are needed for a deeper comprehension of the subject. By studying the available scientific evidence we have determined that the intensity of the impact of mouth breathing on the quality of life of individuals is not completely clear.

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3 CONCLUSÃO

À luz das evidências científicas podemos concluir que a intensidade do impacto da respiração bucal na qualidade de vida dos indivíduos não está completamente clara. No geral as evidências apontam que a respiração bucal exerce uma possível influência negativa. Entretanto, mais estudos, utilizando padronização de metodologia, são necessários para uma melhor compreensão do assunto.

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