

Revision articles

The communication of the tracheostomized patient: an integrated review

A comunicação do paciente traqueostomizado: uma revisão integrativa

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ABSTRACT

It is an integrative review aiming at knowing the scientific production and analyze the strategies on the communication of the tracheostomized patient. The search on the site of the Virtual Health Library (Biblioteca Virtual em Saúde – BVS), with the descriptors “communication and tracheostomy”, resulted in publications of the Latin American and Caribbean Health Sciences Literature (Literatura Latino-Americana e do Caribe de Informação em Ciências da Saúde – LILACS), International Literature (MEDLINE), and Coleciona SUS databases. Scientific articles published between 2001 and 2015 were considered, as they represented the period of the greatest scientific production involving adults, and unrestrictedly for Spanish, English and Portuguese idioms or the type of study. Sixteen (16) publications, comprising 15 articles and 1 thesis, were selected, which were classified by categories: knowledge, communication and supporting resources. From the analyzed publications, it is verified that the concern on the communication of tracheostomized patients has been an increasing theme in the context of the scientific production in the past decade.

Keywords: Communication; Tracheostomy; Adult

RESUMO

Trata-se de revisão integrativa com objetivo de conhecer a produção científica e analisar as estratégias acerca da comunicação do paciente traqueostomizado. A busca no portal da Biblioteca Virtual em Saúde (BVS), com os descritores “communication and tracheostomy”, resultou em publicações das bases de dados Literatura Latino- Americana e do Caribe de Informação em Ciências da Saúde (LILACS), Literatura Internacional (MEDLINE) e Coleciona SUS. Foram considerados os artigos científicos publicados no período de 2001 a 2015, por representar o período com maior produção científica, que envolvessem adultos e, sem restrição quanto aos idiomas espanhol, inglês e português nem para o tipo do estudo. Foram selecionados 16 publicações, composta por 15 artigos e uma tese, as quais foram classificadas por categorias: conhecimento, comunicação, e recursos auxiliares. Diante das publicações analisadas, verifica-se que a preocupação acerca da comunicação do paciente traqueostomizado é tema crescente no contexto da produção científica nessa última década.

Descritores: Comunicação; Traqueostomia; Adulto

INTRODUCTION

Tracheostomy is a surgical procedure by means of which a tube is temporarily or indefinitely inserted through a hole in the trachea. It is one of the most frequent procedures in Intensive Care Units with 55.27% of prevalence among admitted patients to public ICUs in the Federal District, Brazil in 2014¹⁻⁴.

Added to the change in body image, characterized by the presence of the stoma, it is responsible for changes in the anatomy and physiology of the respiratory system, essential to vocal production^{5,6}. The difficulty in verbal communication between patients and healthcare professionals limits patients' participation in treatment planning as well as in social interaction⁷.

However, there are probable verbal and non-verbal methods to be selected and adapted to critically-ill patients, which collaborate for their well-being, safety and respect, being a major tool for delivering quality care, and cooperating for patients' fast recovery^{8,9}.

The suitability of effective communication not only enables patients' better adaptation to the daily routine of the hospital unit, but also fosters the identification of their health needs and humanized care delivery¹⁰.

Initially, tracheostomized patients are admitted to the Intensive Care Unit, which is usually characterized as rough, stressing and tiring environment, not only for patients and their family members, but also for the professionals who work there¹¹.

Research, which assessed family satisfaction in an ICU at one of the largest teaching hospitals in Southern Brazil, taking up 53.3% of patients' family members and companies for four years, identified negatively impacting factors on family satisfaction, such as: assessment of the understanding, availability, frequency and consistency of information; access and communication with the nursing team; ICU environment; support in the process of decision and care-related control¹².

The use of tracheostomy is a complex experience, described as unpleasant and uncomfortable, but not painful. Tracheostomized patients need to acknowledge the capacity as well as the competency of the team who cares for them, once this was an unknown procedure for them¹³.

Most authors from the current review work for the hospital above described, where it is evidenced the inexistence of the standardization of supporting resources which facilitate the communication between the multiprofessional team and communication-impaired patients in ICUs as well as in the other hospital wards.

Therefore, this study objectified to review scientific production on such thematics, and analyze the different communication strategies in use. Thus, narrative review has significant role for the state-of-the-art and ongoing education actions¹⁴.

METHODS

It is an integrative literature review whose objective was to gather and summarize the research results on a certain theme or subject in a systematic and organized way, contributing to the understanding of the proposed theme¹⁵. This kind of research covers the publications addressing the selected theme, enables the synthesis and conclusion of the selected studies, besides pointing to the need of further research due to the gaps found in them¹⁶.

In order to carry out this review, the six steps recommended for this kind of methodology were followed: definition of the guiding question; selection of the sample to be analyzed; analysis and interpretation of the selected studies; assessment of the results and presentation of the knowledge synthesis¹⁴⁻¹⁶.

The guiding question was how tracheostomized adult patients' communication occurs.

Bibliographic research was carried out in November of 2015, unrestrictedly for Spanish, English and Portuguese and for the type of study as well. For literature search, "*communication and tracheostomy*" descriptors were used.

Search was performed in the Latin American and Caribbean Health Sciences Literature (LILACS), International Literature (MEDLINE) and Colecion SUS databases. By means of the descriptors, a total of 167 articles were found, which were selected according to the inclusion criteria: full-text articles available in the databases; productions in Spanish, English and Portuguese; publications between 2001 and 2015 addressing adults. This period of reference was chosen because studies addressing this thematics increased in national and international settings.

It was established as exclusion criteria: non-related articles to the theme of tracheostomized patients' communication, different idioms from the ones mentioned in the inclusion criteria, studies carried out with children, and full text not available in the databases.

After the use of the filters, idioms and period of publication, 102 publications remained. Among them, three were found duplicated and two others were found triplicated, with 23 articles addressing the thematics. However, four articles did not address communication and three others were not available in the databases. Thus, 16 publications were selected for the current review (Figure 1).

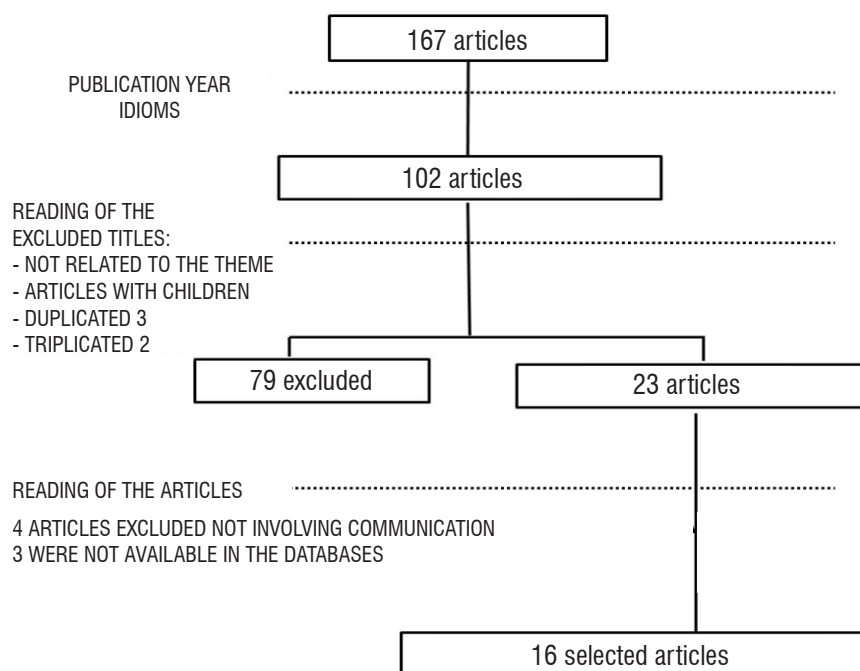


Figure 1. Flowchart of inclusion and exclusion of the articles found

LITERATURE REVIEW

The characterization of the studies contemplated information regarding authors, year and country of publication, research title, subjects, instrument for data collection and the obtained results (Figure 2).

In relation to the year of publication, one article from 2001, a dissertation from 2008, four articles from 2009, one article from 2010, two articles from 2011, one article from 2013, three articles from 2014 and three articles from 2015 were found, pointing out Brazil and United Kingdom with five publications each. In Brazil, the first publication was from 2001, and in the United Kingdom, it was from 2009.

All selected production is from the health area, featuring diversification in relation to the study participants, with nine publications involving laryngectomees, neuromuscular disease, tracheostomized and healthy volunteers, and other four publications with health professionals, being three of them carried out with nurses and one publication with speech-language pathologists.

Only one of the articles addressed the experience of three tracheostomized patients, who reported their experiences during the tracheostomy period by means of a semi-structured interview¹³.

Reading of all the selected scientific production enabled to observe researchers' concern about the adoption of facilitating communication devices as

well as the implementation of specialized team for the effective management of the tracheostomy, and the identification of three categories on the theme of tracheostomized patients' communication: Knowledge, Communication and Supporting Resources, which will be presented as follows.

Knowledge

The knowledge of admitted, intubated or tracheostomized patients in Intensive Care Units and unable to communicate, was the theme approached by two authors from the current review^{17,18}. They reported the unique routine in this unit, which entails major stress, once it is unknown by the greatest part of the patients, mainly if it is associated with verbal communication impairment.

Unknowing the reasons for the intubation and/or the surgical procedure of the tracheostomy generated negative cognitive and psychological impact, bringing about misunderstandings and misinterpretations. Apart from reducing conflicts, proper communication aims to accomplish defined goals, mainly in the interaction between health professionals and patients, building bonds and clearing doubts in relation to the performed surgical procedure^{9,17-19}.

Communication with tracheostomized patients is important because it improves interaction, informs and calms down patients, besides humanizing care

| Authors, Year and Country | Research Title | Subjects and Instrument Used | Results |
|--|---|---|--|
| Melles and Zago (2001) Brazil | The use of the magic slate in the communication of the tracheostomized | - 86 tracheostomized patients; - Comparison of tracheostomized patients' data during 1 year after the implementation of a specialized service, and 1 year before its implementation | 73% considered the device adequate; 86% favored the communication with the healthcare team, and 96% accepted the device. |
| Alves (2008) Brazil | Communication in the Interpersonal Relationship Nurse/Older Oncology Client undergoing emergency tracheostomy (THESIS) | - 12 patients with neuromuscular disease, tracheostomized and receiving mechanical ventilation; - Blind clinical trial with evaluation of the recordings by two language-speech pathologists | Tracheostomy surgery may disrupt older clients' behavior for affecting needs, such as: food intake, breadth and communication. Once non-verbal communication grounds interpersonal relationships, by adopting resources like gestures, lip reading, paper and pencil, bed posture, touch and magic slate. In the current study, gestures and family presence were resources used to help decode clients' messages. |
| Silveira et al. (2009) Brazil | Brazilian speech valve for tracheostomy: diaphragm pressure standardization | - 106 language-speech pathologists, experienced in delivering care to tracheostomized patients; - Questionnaire developed by Ward et al. (2007). | Patients noticed significant change in their quality of life after beginning to use the speech valve. It was possible to use it full time, including during sleep in 43.75% of the patients, the others removed it during sleep. |
| Macbean et al. (2009) Australia | Optimizing speech production in the ventilator-assisted individual following cervical spinal cord injury: a preliminary investigation | - 2 male participants with spinal cord injury - 10 male participants without spinal cord injury (control group) | The use of PEEP** and/or Passy-Muir valve contributed to patients' communication receiving mechanical ventilation. Case-by-case assessment is necessary to determine the best method, and assessment of individual conditions regarding ventilation and speech devices, thus requiring the presence of a specialized team. |
| Foster (2009) Reino Unido | More than nothing: The lived experience of tracheostomy while acutely ill | - 3 tracheostomized patients; - QDA* | The experience reported by these patients is a complex network involving their perception of being tracheostomized, their underlying disease and recovery facing the unknown, finding new ways for communicating, and acceptance of their new self-image. |
| Batty (2009) United Kingdom | Communication, swallowing and feeding in the intensive care unit patient | - 1 tetraplegic patient; - Case Report | Literature review and aspects of the best practices to assess and manage patients with communication and swallowing disorders in an intensive care unit. It identifies some factors to be considered by the multidisciplinary team for efficient management of these patients. |
| Mota, França (2010) Brazil | Non-verbal communication in an Intensive Care Unit: validation of an alternative method | - 51 nursing professionals; - QDA* | Cards encouraged the nursing team to interact with critically-ill patients, unable to communicate verbally, thus they could deliver better nursing care. Patients became less anxious, could convey their concerns towards caring, and also their subjective messages. |
| Grossbac, Stranber e Chlan (2011) United States | Impact of a specialized multidisciplinary tracheostomy team on tracheostomy care in critically ill patients | -129 tracheostomized patients in a cardiac intensive care unit; - QDA* | Effective communication with patients receiving mechanical ventilation is deemed to be necessary in order to meet their psychological and physiological needs. Several resources are recommended, such as gestures, head and lip movements, writing, picture cards, and other state-of-the-art technological devices for alternative communication. In the presence of tracheostomy, it is recommended the partial or total cuff deflation and the use of the speaking valve. Nurses should identify the most adequate strategy, elaborate a care plan for the patient, family members and team in order to enable effective non-verbal communication. |
| Mestral et al. (2011) Canada | Promoting Effective Communication for Patients Receiving Mechanical Ventilation | - 86 tracheostomized patients; - Data comparison of tracheostomized patients for a year after the implementation of a specialized service, and one year before its implementation | Decision making while caring for tracheostomized patients demands specialized knowledge, preventing complications and enabling decision-making based on consistent evidences. |

| Authors, Year and Country | Research Title | Subjects and Instrument Used | Results |
|--|--|---|---|
| Garguilo et al. (2013) France | Patient-Controlled Positive End-Expiratory Pressure With Neuromuscular Disease Effect on Speech in Patients With Tracheostomy and Mechanical Ventilation Support | - 12 patients with a neuromuscular disease, tracheostomized, and undergoing mechanical ventilation; - Blind clinical trial with recording assessment by two speech-language pathologists | PEEP** enhancement fosters significant improvement in speech, enabling phonation during all the respiratory cycle for most patients. PEEP** use, controlled by the patients and individually adjusted, could be implemented for home use, improving communication and autonomy in tracheostomized patients. |
| Mcgowan et al. (2014) United Kingdom | UK survey of clinical consistency in tracheostomy management | - 106 speech-language therapists, experienced in tracheostomized patients' care delivery; - Questionnaire developed by Ward et al.(2007). | The study enabled to determine the level of clinical consistency in speech-language therapy and tracheostomy care in adult patients. It unfolded moderate-to-high consistency in several areas of the clinical practice, such as swallowing, management, assessment instruments like decannulation protocols, speech valves and assessment of the cuff balloon pressure by means of manometers. |
| Mcgrath e Wallace (2014) United Kingdom | The UK National Tracheostomy Safety Project and the role of speech and language therapists | - Review Article | The creation of the National Tracheostomy Safety Project was developed to try and answer poorly-described aspects in literature concerning tracheostomy care. It enables the multidisciplinary team to use such guidance to enhance individual and group skills. |
| Muthuswamy et al. (2014) United Kingdom | Utility of optical facial feature and arm movement tracking systems to enable text communication in critically ill patients who cannot otherwise communicate | - 16 healthy volunteers; - QDA* | Communication barriers significantly impact patients' and multidisciplinary team's well-being. The combination with low-cost technology enables communication of patients with burns and in intensive care due to the nature of their injuries. |
| Mitate et al. (2015) Japan | Speaking Tracheostomy Tube and Modified Mouthstick Stylus in a Ventilator-Dependent Patient with Spinal Cord Injury | - 1 tetraplegic patient; - Case Report | The use of the speech valve was possible for only ten minutes without fatigue. Then, a pen was adapted in the upper jaw, and by means of a communication board and a touch-sensitive screen iPad, communication was possible between the patient and the team. |
| Gaspar et al. (2015) Brazil | The nursing team and the communication with the tracheostomized patient | - 51 nursing professionals; - QDA* | It was evidenced that when the patient is unable to communicate, the nursing team tries to guide and foster different communicative ways, such as gestures, signs and written communication because they understand that communication enhances the interaction among the parties, reduces anxiety, facilitates understanding among the patient, family and multidisciplinary team. In the research participants' perception, the development of communication strategies with hospitalized patients by the nursing team is essential for better care as well as they contribute to patients' better and faster recovery. |
| Sutt (2015) Australia | The use of tracheostomy speaking valves in mechanically ventilated patients results in improved communication and does not prolong ventilation time in cardiothoracic intensive care unit patients | -129 tracheostomized patients in a cardiothoracic intensive care unit; - QDA* | The use of speaking valves in tracheostomized patients favors the recovery of verbal communication and improves oral intake. The study showed that the insertion of the speaking valve during the process of ventilation weaning, did not evidence any adverse effects on the ventilation time. |

Keys to the figure: *QDA= Questionnaire developed by the authors

**PEEP = Positive End-Expiratory Pressure

Figure 2. List of the studied articles published in the LILACS, MEDLINE and Colecion SUS on tracheostomized patients' communication

delivery⁹. Family presence is part of the strategy which benefits patients' communication. The triad, patient, family member and healthcare team, favors quality care and early health education¹⁹.

During hospitalization, patients' and family members' counselling, suggesting alternative and effective communicative ways, helps recovery and reduce anxiety^{18,19}. The choice of the most adequate strategy for each patient is a skill acquired along the professional practice, involving gestures; writing, since the patient is literate or has the habit of writing; lip reading; magic slate and illustrative cards, being fundamental, to all resources, patient and message recipient's positioning¹⁹.

Thus, the adoption of resources, such as gestures and written communication, added to the presence of family members, facilitates the understanding of patients' needs^{9,19}.

According to the authors of this review, the knowledge of tracheostomized patients is a daily theme, addressed in the hospital they work for. The multiprofessional team explains patients the need of the surgical procedure and clears doubts so that they actively participate in the decisions.

Communication

The prevalence of communication impairments in patients who need mechanical ventilation is about 16 to 24%, causing significant anxiety for the patients and making their participation difficult in treatment decisions^{20,21}.

By restricting communication, the use of mechanical ventilation brings about the reduction of information exchange, depression, social withdrawal, and motivation to participate in caring, making patients dependent on non-verbal strategies as well as the support of devices such as the speaking valve and the use of Positive End-Expiratory Pressure (PEEP)²².

Survey held at an Intensive Care Unit showed that before the adoption of the speaking valve in patients who subsequently died, none of them could communicate in an effective way, but after the adoption of the valve, five out of a total of 14 patients admitted to the ICU had the chance of verbal communication with their family members before dying. Apart from enabling verbal communication, it improves swallowing, however, its impact on the respiratory mechanics due to the loss of the alveolar recruitment caused by the reduction of lung volumes at the end of the expiration has still been unknown, leading to alveolar collapse

and atelectasis, consequently, extending their length of stay in the ICU²².

On the other hand, individualized adjustment of the PEEP enables speaking during expiration with vocal quality and no respiratory discomfort. PEEP must be adjusted to obtain proper speaking, without fatigue, associated with the Passy-Muir valve, increasing subglottic pressure and enabling speech production²³. Deflation of the tracheostomy cuff is necessary for speech (even if not totally), even though patients are in mechanical ventilation¹⁸.

Verbal communication with the speaking valve was described as a "huge" benefit by a tracheostomized patient in the ICU, unlike two other patients, who had written communication available for them, described a feeling of frustration caused by lack of coordination and muscle weakness¹³.

The recommendation of a speaking valve is an alternative to reduce the harm caused by the absence of verbal communication, but it depends on the proper functioning of the vocal cords, being paralysis a contraindication for that¹⁸.

Research which standardized Brazilian speaking valve, reported that apart from adequate and effortless speaking, it was possible to carry out sports activities, besides reducing the expectorated secretion and improving local hygiene. Among the 32 participants in this study, 43.75% could use it full time, the others removed it for sleeping^{13,24}.

The presence of a specialized team with a language-speech pathologist showed important results in Montreal, with lower number of calls due to complications, such as tube obstruction; reduction of decannulation time; increase of patients undergoing decannulation from 59.4% to 68.5%, and increase in the placement of speaking valves from 19.4% to 67.4%²⁵.

In some public hospitals, placement of speaking valves is already part of the performed procedures, as well as the coverage by healthcare plans. Guidance for patients' effective communication with their family members is carried out after the tracheostomy procedure during the visiting hours. The team shows the alternative possibilities of dialogue in practice by interacting with the patient through the most adequate communication resources.

Supporting Resources

The most adequate supporting resources for each patient will depend on the screening of speech-language pathology or specialized team. They comprise

material such as paper and pencil; picture cards with their needs (bathing, pain, bed turning, coldness, heat, among others); a list with the commonest sentences and phrases; gestures and mime to facilitate communication and reduce frustration due to non-verbal communication. It should be pointed out that formerly written messages, whether needs, wishes and/or feelings should not be thrown out, as they facilitate the speed in communication without being rewritten¹⁷.

Strategies to facilitate communication include the correct positioning of the professional and/or family member next to the patient, preferably opposite him/her; environmental light adjustment to facilitate lip reading; reduction of background noise, turning off radios or television and closing the door to buffer external conversations. Patients must be encouraged to speak clearly and slowly, must focus on key words or phrases that may give hints and meaning to sentences, avoiding interruptions that may disrupt thinking process and distract patients¹⁸.

Blinking differently to mean yes and no is also an option, but this may lead to misinterpretations for being easily taken as a natural blink. In this case, patients should turn their eyes to one side, and then to the other side meaning oppositions¹⁸.

The use of the magic slate favors faster and more efficient written communication, no matter the decubitus adopted by the patient²⁶. Making cards depicting biopsychosocial needs, and with the letters of the alphabet also facilitate patients' communication with the healthcare team, fostering nurse/ patient interaction²⁷.

Fatigue of a tetraplegic patient using a speaking valve in the tracheostomy has driven multidisciplinary team to adapt a pen comprised of a stick and conductive urethane foam attached to the upper jaw, a resin plate and an iPad enabled the communication with the team, reducing this patient's depression due to the absence of communication^{28,29}. Experienced speech-language pathologists in delivering care to tracheostomized patients reported an increase in tracheostomized patients' referrals for deglutition screening before starting the oral diet³⁰.

The use of a speaking valve improves oral intake, besides favoring verbal communication. When it is associated with mechanical ventilation, it poses a positive impact on the quality of life for supplying patients' psychological and physiological needs^{17,22,23}.

Patients with severe disease related to neuropathy, myopathy or face, arm and hand burns, are often

incapable of communicating by writing, oral language due to the tracheostomy, or lip reading, frustrating the healthcare team as well as the patient. Healthy volunteers tested two low-cost technology systems, which enabled sentence writing on a screen, by using rough movements with the upper limb. Several typing mistakes occurred during sentence writing, but that did not hinder understanding³¹.

Among the available resources to communicate with tracheostomized patients and used in the hospital, where the authors of this manuscript work, can be pointed out: mime, lip reading and writing, possible when the patient is literate and does not present any significant functional impairment. Cards with drawings depicting patients' main requests, such as bed turning, hygiene, lighting levels, the visual analog scale for pain, and signs for yes and no, are also available. As this material has already been printed, it contributes to accelerate and facilitate the communication process.

Selecting the most adequate method for effective communication with tracheostomized patients demands specialized knowledge on the part of the multidisciplinary team, and needs to be founded in scientific evidences in order to enhance individual and collective skills, besides improving practice and management of patients with communication disorders^{13,18}.

This literature review contributes with the possibility to gather different approaches and techniques used to facilitate tracheostomized patients' communication, once the published articles involved so many populations as well as distinct approaches. On the other hand, this diversity of approaches reduced the results by considering each applied technique.

It should be pointed out that tracheostomized patients' communication was the concern of all those authors. Thus, it could be evidenced that only one study gave voice to patients by reporting their experience by means of semi-structured interview. Therefore, it is suggested further research involving a larger number of patients who have undergone the tracheostomy procedure during hospitalization, and may report how the communication process took place, contributing not only to the analysis of the effectiveness of the diverse resources used and proposed by literature, but also to the possibility of creating other approaches, considering the reported limitations.

CONCLUSION

The current review evidenced the increasing scientific production on the thematic of tracheostomized

patients' communication in the past decade, as well as the importance of the multiprofessional team for care delivery of tracheostomized patients, not only for efficient management, but also for early decannulation.

Disregarding the presence or not of a speech-language pathologist in the healthcare team, the authors understood that the different resources and strategies addressed in this article, are feasible to be adopted by healthcare professionals.

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