63 - EDUCATIONAL INTERVENTION AS AN INSTRUMENT FOR IMPROVING CARE GIVEN TO PATIENTS UNDER MECHANICAL VENTILATION IN AN INTENSIVE CARE UNIT NATAL/RN

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INTRODUCTION

Pneumonia is the second most common hospital infection (HI) in the United States of America (USA), representing 15% of all HI (CDC, 1997). Correlating these data, we can say the highest rates of nosocomial pneumonia occur on patients interned on intensive care units, undergoing mechanical ventilation (MV). When Pneumonia occurs on these patients it's named "mechanical ventilation-associated pneumonia" (VAP). This fact is due to the close relation between endotracheal intubation and the use of invasive ventilatory assistance apparatuses, a risk that's 03 to 21 times higher than when this device is not used (FERNANDES; VAZ FERNANDES; RIBEIRO-FILHO, 2000; BRASIL, 2000a).

In this sense, according to Pruitt; Jacobs (2006), the main risk factors for VAP described on literature are those that favor an increase on pathogen colonization, gastric content aspiration and diminution of defense mechanisms. Other risk factors that have been discussed are related to the use of inadequate assistance techniques.

In regard to assistance measures, respiratory physical therapy is a technique used to promote better secretion removal, reducing bronchial obstruction and the resistance of the respiratory tract, easing gas exchanges and reducing the respiratory work (WALLIS; PRASAD, 1999). To that end, physical therapists should sanitize hands before and after this procedure, interrupt enteral nutrition before the physical therapy maneuvers and use sterile and/or disinfected materials and equipment during care (CDC, 2004). Another point of extreme relevance is the interruption of nutrition before initiating maneuvers, since it helps prevent vomiting and aspiration of contents into the lungs and, consequently, the risk of pneumonia (OLIVEIRA; ARMOND; TEDESCO, 2001; DREYER et al., 2003).

Considering the importance of risk factors described hereby, several authors such as Salahuddin et al. (2004) developed educational programs as means to modifying actions performed by health professionals that may compromise patient security, thus ensuring the quality of assistance.

With our sights turned to the prevention of VAP, we set out from the presupposition that an educational program, based on deficits detected on ventilatory physical therapy on patients undergoing MV, can improve the quality of assistance and consequently minimize the risk of VAP. We, then, question: how is the respiratory physical therapy for patients undergoing MV being made? Can an educational program influence the improvement on the quality of assistance given by physical therapists during physical therapy to patients under MV?

Based on these questions, we establish the following objectives: to observe the care given by the physical therapist before and after respiratory therapy on patients under MV; to identify whether there's a difference between assistance given by physical therapists to patients undergoing MV before and after an educational intervention in a hospital in the city of Natal.

We thus expect this study's results to contribute to the improvement of the process MV patient care, minimizing problems due to iatrogenic actions caused by incorrect care offered to these patients.

MATERIAL AND METHODS

Quasi-experimental study, with quantitative approach, time-series outlining and prospective data, performed on Hospital do Coração de Natal (HCN), located in the city of Natal, characterized as being general, private and associated with the government-funded public health system (Sistema Único de Saúde - SUS).

This institution's choice is due to the fact it's a hospital that attends to a clientele of critically ill patients, necessitating high-complexity assistance, and thus at risk of contracting HI and VAP.

The respiratory physical therapy procedures on a total of 63 patients (48 of which before educational intervention and 15 afterwards) were performed by 03 physical therapists that carried their ICU activities on the last three work shifts.

The data collection instrument in use was constructed by Freire (2005) and adapted by us, with the objective of identifying care given by the team regarding respiratory physical therapy related to patients using MV. The instrument's first part comprises personal and professional identification, which include age, gender and instruction level, professional time of service, time of ICU work, participation on previous training programs on VAP prevention, amount of training, place where they received them and their duration.

The second part is composed of respiratory physical therapy related to VAP occurrence risk, which included sanitizing of hands before and after this procedure; interruption of enteral nutrition before physical therapy maneuvers and the use of sterile and/or disinfected materials and equipment during care.

Data collection was performed on the months of November and December 2007 to March 2008, during the three shifts, on patients undergoing mechanical ventilation. To that end, we followed the ethical and legal principles that regulate research on human beings, exposed on resolution #196/96 from Conselho Nacional de Saúde, manifested by the registration protocol's approval from Comitê de Ética e Pesquisa (CEP) UFRN 101-04 (BRASIL, 2000b).

The data collection method used was systematized observation, demanding a previous meeting with all physical therapists from ICU 2, stressing our objective and asking for their collaboration by participating as research subjects. Afterwards, we asked them to read and sign a term of free and clear consent (TCLE), since the procedure demanding observation would be performed on a non-predetermined time schedule.

The data were electronically categorized and processed, through Microsoft-Excel XP and Statistica 6.0 software and analyzed by descriptive statistics, being presented in the form of table and column- and bar-type graphs.

RESULTS AND DISCUSSION

This study's results and discussions on the stage prior to educational intervention, interruption of enteral nutrition flux

before beginning physical therapy maneuvers was performed on only 5.1% of the observed procedures. After training, this care was performed on 10,0% of the evaluated occasions. We observe that, even though there was a change from 5.1% to 10.0%, the total situations when the procedure was not performed still remained rather high (90.0%) after educational activity. There was, in fact, no significant statistical difference (p = 0.57).

According to Oliveira, Armond and Tedesco (2001), the interruption of enteral nutrition prior to situations in which the patient undergoing MV is manipulated, such as physical therapy maneuvers, tracheal aspiration, bathing, among others, is a recommendation that helps prvent vomiting and bronchial aspiration of gastric contents.

In agreement with these authors, Sepúlveda and Oliveira (2000), in the II Consenso Brasileiro de Ventilação Mecânica directives, recommend enteral nutrition to be administered long before manipulating patients receiving nutrition through probes. Furthermore, they refer to situations when the physical therapist might aspirate the gastric contents in order to prevent bronchial aspiration.

In this context, similar to our findings, Farias, Freire and Ramos (2006) investigated this care's performance and observed that in 134 (76.14%) situations the nutrition was being administered through nasal-enteric probe (NEP) during physical therapy maneuver procedures.

On the sanitizing of hands, in the stage prior to intervention, in most cases (58.7%), this conduct was adopted before initiating physical therapy maneuvers. Likewise, after ending this procedure, in most observations, the professionals followed this recommendation (78.3%).

After the educational activity, however, there was a slight reduction on the execution of this measure, both before (53.3%) and after (73.3%) performing physical therapy maneuvers. There was, thus, in regard to the sanitizing of hands before and after physical therapy, no significant statistical difference (p= 0.72 and 0.69, respectively).

Silva et al. (2004) developed a study on a newborn ICU on Switzerland in order to evaluate how bacterial contamination on the health professionals' hands occurred during newborn assistance. They identified the situations that originated the most contamination as: handling of respiratory tract secretions (increase of 37.6 colony forming units - CFU - per minute) and skin contact (increase of 21.1 CFU/minute).

Based on these findings, the authors reinforced the notion that it's necessary for health professionals to adopt hand sanitizing, before and after performing care on patients (SILVA, et al., 2004).

In face of this action's recognition as a means of preventing all HI, the World Health Organization (WHO) has signed, since 2004, a pact with several countries, in order to assure protection for patients who need health assistance, titled “worldwide alliance for patient health”. This program prioritizes hand sanitizing and calls upon countries, through health regulation agencies, to invest on actions promoting the carrying out of this measure by health professionals. The Brazilian Ministry of Health has thus signed the alliance protocol and ANVISA (national agency for sanitary vigilance) has published a manual of orientations for hand sanitizing on health services, which offers updated information on the theme (BRASIL, 2007).

As for the use of disinfected materials during physical therapy maneuvers, in the stage prior to the educational intervention, on only 30.4% of the observations the professionals adopted this recommendation. In the stage following the educational activity, however, this measure was performed on 60.0% of the occasions. There was, thus, a statistically significant difference (p= 0.04).

According to practices recommended by SOBECC (2007), devices used on respiratory assistance are regarded as semi-critical articles due to them making contact with integral mucous membranes. That said, after use, these items require high-level disinfection or sterilization in order to assure quality and safety of use by the patient (APECIH, 2005).

Similar to our data, Freire, Farias and Ramos (2006) observed, in a study developed on the emergency and intensive care units in the Clóvis Sarinho emergency hospital, in Natal-RN, that in most situations (97.14%) the physical therapists used sterile and/or disinfected materials on physical therapy maneuvers.

However, in spite of our noticing that in most indications articles were being reprocessed, the professionals did not follow this recommendation on a considerable amount of them, exposing the patient to a completely avoidable risk of acquiring hospital infection.

CONCLUSION

We conclude in respect to the care on respiratory physical therapy, that before educational intervention: on 94.9% of the situations, enteral nutrition was not interrupted before physical therapy maneuvers; **after:** 90.0% of the time, enteral nutrition was not interrupted, resulting in no significant statistical difference (p= 0.57); **before:** on 58.7% of the observations hands were sanitized before respiratory physical therapy; **after:** on 53.3% of the observations hands were sanitized, resulting in no significant statistical difference (p = 0.72); **before:** on 78.3% of the observed cases, after performing physical therapy, professionals sanitized their hands; **after:** on 73.3% of the observations, after performing physical therapy, professionals sanitized their hands (p = 0.69); **before:** on 69.9% of the observations, materials used during physical therapy were not disinfected or sterile; **after:** on 60.0% of the observations, these devices were disinfected or sterile, resulting on a significant statistical difference (p = 0.04)

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EDUCATIONAL INTERVENTION AS AN INSTRUMENT FOR IMPROVING CARE GIVEN TO PATIENTS UNDER MECHANICAL VENTILATION IN AN INTENSIVE CARE UNIT NATAL/RN.

ABSTRACT

Introduction: Respiratory physical therapy on patients under mechanical ventilation (MV) is used to promote removal of secretions from the respiratory tract, easing gas exchanges. To that end, some actions guarantee the quality of assistance, such as the interruption of enteral nutrition before physical therapy maneuvers; sanitizing hands before and after physical therapy and the use of disinfected and/or sterile materials. **Objectives:** to observe the care given by the physical therapist before and after respiratory physical therapy as well as to identify whether there's a difference in assistance given to patients under MV by these professionals before and after an educational intervention. **Methodology:** quasi-experimental study, quantitative, time-series outlining and prospective data, collected between November and December 2007 to March 2008, performed on a hospital in Natal, with 03 physical therapists. **Results:** we observed that **before** educational intervention on 94.9% of the situations, enteral nutrition was not interrupted before physical therapy maneuvers; **after:** 90.0% of the time, enteral nutrition was not interrupted (p= 0.57); **before:** on 58.7% of the observations hands were sanitized before respiratory physical therapy; **after:** on 53.3% of the observations hands were sanitized (p = 0.72); **before:** on 78.3% of the observed cases, after performing physical therapy, professionals sanitized their hands; **after:** on 73.3% of the observations, after performing physical therapy, professionals sanitized their hands (p = 0.69); **before:** on 69.9% of the observations, materials used during physical therapy were not disinfected or sterile; **after:** on 60.0% of the observations, these devices were disinfected or sterile (p = 0.04). **Conclusion:** there was no significant statistical difference after educational intervention on the interruption of enteral nutrition during physical therapy or regarding sanitizing of hands before and after the procedure. The only care which presented significant statistical difference was the use of disinfected and/or sterile materials in the group being studied.

KEYWORDS: pneumonia, ventilator-associated, education, physical therapy department, hospital.

INTERVENTION ÉDUCATIVE EN TANT QU'INSTRUMENT POUR AMÉLIORER LES SOINS DU PATIENT SOUS VENTILATION MÉCANIQUE ET PHYSIOTHÉRAPIE RESPIRATOIRE EN RÉANIMATION - NATAL/RN

RÉSUMÉ

Introduction: la physiothérapie respiratoire est utilisée chez les patients sous ventilation mécanique pour promouvoir l'élimination de sécrétions des voies respiratoires, en facilitant les échanges gazeux. Ce faisant, certains soins assurent la qualité de l'assistance, tels que l'interruption de la diète entérique avant les manoeuvres physiothérapeutiques, l'hygiène des mains avant et après la physiothérapie respiratoire, et l'usage de matériel désinfecté et/ou stérile. **Objectifs**: observer les soins fournis par les physiothérapeutes avant et après la physiothérapie respiratoire, ainsi qu'identifier s'il y a différence entre l'assistance fournie par ces professionnels aux patients sous VM avant une intervention éducative et après. **Méthodologie**: étude quasi expérimentale, quantitative, à délimitation temporelle et sérielle, et aux données prospectives recueillies entre novembre 2007 et mars 2008, menée dans un Hôpital de Natal, avec 03 physiothérapeutes. **Résultats:** qu'**avant** l'intervention éducative, dans 94,9% des cas la diète entérique n'avait pas été interrompue avant les manoeuvres physiothérapiques; **après**, elle ne fut pas interrompue dans 90,0% des cas (p = 0,57); **avant** l'intervention éducative, dans 58,7% des cas il y eut nettoyage des mains avant la physiothérapie respiratoire; **après**, ce taux tomba à 53,3% (p = 0,72); **avant** l'intervention éducative, dans 78,3% des cas observés les professionnels nettoyèrent leurs mains à la fin de la physiothérapie; **après,** ils nettoyèrent leurs mains après la physiothérapie dans 73,3% des cas observés (p = 0,69); **avant** l'intervention éducative, dans 69,6% des cas le matériel employé au cours de la physiothérapie n'était pas désinfecté et/ou stérile; **après**, ce matériel était désinfecté ou stérile dans 60,0% des cas (p = 0,04). **Conclusion:** il n'y eut point de différence statistique significative après l'intervention éducative quant à l'interruption de la diète entérique pendant la physiothérapie et quant au

nettoyage des mains avant et après celle-ci. Le seul soin qui présenta une différence statistique significative dans le groupe en étude fut l'utilisation de matériel désinfecté et/ou stérile.

MOTS-CLÉS: pneumonie liée à la ventilation mécanique, éducation, Service Hospitalier de Physiothérapie.

INTERVENCIÓN EDUCATIVA COMO INSTRUMENTO PARA MEJORAR EL CUIDADO DEL PACIENTE BAJO VENTILACIÓN MECÁNICA EN LA FISIOTERAPIA RESPIRATORIA UNIDAD DE TERAPIA INTENSIVA NATAL/RN

RESUMEN

Introducción: la fisioterapia respiratoria en pacientes bajo ventilación mecánica (VM) es utilizada para promover la retirada de secreciones de las vías aéreas, facilitando los cambios gaseosos. Para tanto, algunos cuidados garantizan la calidad de la asistencia, tales como interrupción de la dieta enteral antes de las maniobras fisioterapéuticas, higienización de las manos, antes y después de la fisioterapia respiratoria y el uso de materiales desinfectados y o estériles**.Objetivos:** observar los cuidados prestados por el fisioterapeuta antes y después de la fisioterapia respiratoria bien como identificar si hay diferencia entre la asistencia prestada por esos Profesionales a los pacientes bajo VM antes y después de una intervención educativa. **Metodología:** estudio casi experimental, cuantitativo, de lineamiento tiempo, serie y datos prospectivos, colectados entre Noviembre y Diciembre de 2007 a Marzo de 2008, realizado en un Hospital de Natal, con 03 fisioterapeutas. **Resultados**: antes de la intervención educativa, en 94,9% de las situaciones la dieta enteral no fue interrumpida antes de las maniobras fisioterapéuticas; después en 90.0 % de las veces, la dieta enteral no fue interrumpida (p=0,57), antes en 58,7% de observaciones. Las manos fueron higienizadas antes de la fisioterapia-respiratoria, después en 53,3% de las observaciones, las manos fueron higienizadas (p=0,72), antes: en 78.3% de las veces observadas, al término de la fisioterapia, los profesionales higienizaron las manos; después en 73,3% de las observaciones, al fin de la fisioterapia los profesionales higienizaron las manos (p=0.69) antes en 69,6% de las observaciones: los materiales usados durante la fisioterapia no estaban desinfectados y/o estériles; después: en 60.0% de las observaciones esos dispositivos estaban desinfectados o estériles (p=0.04). **Conclusión:** no existió diferencia estadística significativa después de la intervención educativa cuanto a la interrupción de la dieta enteral durante la fisioterapia; y cuanto a la higienización de las manos antes y después del procedimiento. El único cuidado que presentó estadística significativa. Fue el uso de materiales desinfectados y/o estériles en el grupo estudiado.

PALABRAS CLAVE: neumonía asociada a la ventilación mecánica, educación, servicio hospitalar de fisioterapia.

INTERVENÇAÕ EDUCATIVA COMO INSTRUMENTO PARA MELHORAR O CUIDADO DO PACIENTE SOB VENTILAÇÃO MECÂNICA NA FISIOTERAPIA RESPIRATÓRIA EM UNIDADE DE TERAPIA INTENSIVA - NATAL/RN.

RESUMO

Introdução: a fisioterapia respiratória em pacientes sob ventilação mecânica é utilizada para promover a remoção de secreções das vias aéreas, facilitando as trocas gasosas. Para tanto, alguns cuidados garantem a qualidade da assistência, tais como interrupção da dieta enteral antes das manobras fisioterápicas; higienização das mãos antes e depois da fisioterapia respiratória e o uso de materiais desinfetados e/ou estéreis. **Objetivos**: observar os cuidados prestados pelo fisioterapeuta antes e após a fisioterapia respiratória bem como identificar se há diferença entre a assistência prestada por esses profissionais aos pacientes sob VM antes e após uma intervenção educativa. **Metodologia**: estudo quase-experimental, quantitativo, delineamento tempo-série e dados prospectivos, coletados entre novembro e dezembro de 2007 a março de 2008, realizado num Hospital de Natal, com 03 fisioterapeutas. **Resultados:** observamos que **antes** da intervenção educativa em 94,9% das situações a dieta enteral não foi interrompida antes das manobras fisioterápicas; **após:** em 90,0% das vezes a dieta enteral não foi interrompida (p = 0,57); **antes:** em 58,7% observações as mãos foram higienizadas antes da fisioterapia respiratória; **após:** em 53,3% das observações as mãos foram higienizadas (p = 0,72); **antes:** em 78,3% das vezes observadas, ao término da fisioterapia os profissionais higienizaram as mãos; **após:** em 73,3% das observações, ao fim da fisioterapia os profissionais higienizaram as mãos (p = 0,69); **antes**: em 69,6% das observações, os materiais usados durante a fisioterapia não estavam desinfetados e/ou estéreis; **após:** em 60,0% das observações, esses dispositivos estavam desinfetados ou estéreis (p = 0,04). **Conclusão:** não existiu diferença estatística significativa após a intervenção educativa quanto à interrupção da dieta enteral durante a fisioterapia, e quanto a higienização das mãos antes e após o procedimento. O único cuidado que apresentou estatística significativa foi o uso de materiais desinfetados e/ou estéreis no grupo estudado.

PALAVRAS-CHAVE: Pneumonia Associada à Ventilação Mecânica, Educação, Serviço Hospitalar de Fisioterapia.