64 - EDUCATIONAL ACTION RELATED TO BED POSITION AS A STRATEGY TO MINIMIZE THE RISK OF PNEUMONIA ASSOCIATED WITH MECHANICAL VENTILATION

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INTRODUCTION

Mechanical ventilation-associated pneumonia (VAP) is a form of hospital pneumonia which affects patients undergoing invasive mechanical ventilation (MV) (SADER et al., 2001). This pathology is frequent on Intensive Care Units (ICU), causing and increase on hospitalization period, in the morbidity and mortality rates and with significant repercussion on costs (BERALDO, 2008).

The relative risk for this type of pneumonia is associated to the hospital's complexity, patient characteristics and preventive care used by the health team during hospitalization (NNISS, 2004). One of such risks is the patient's prolonged immobilization on the bed in supine position (GUSMÃO; DOURADO; FIACONNE, 2004).

Other relevant aspects associated to VAP risk is the presence of an endotracheal tube, MV and a state of altered consciousness, since they can allow the draining of contaminated secretions accumulated on the oral-pharynx area and/or aspiration of gastric juices, allowing contamination (BERALDO, 2008).

In this sense, believing in the importance of changing professional practice actions through the application of educational programs, aiming to prevent or reduce hospital infection (HI) rates, several authors developed educational strategies which brought a reduction of upwards of 50% to VAP rates. Among these, we underline Salahuddin et al. (2004), Babcock et al. (2004), Rosenthal, Guzman and Crnich (2006), Who performed multicentric studies with statistically significant results.

In this perspective, in order to perform this result which is part of a larger research, a dissertation Masters, we set out from the presupposition that an educational program directed at health professionals, based on deficits detected on the process of care to patients undergoing MV, can improve the quality of assistance and consequently lower VAP risk.

With that in mind, we constructed the following question: is there a difference between assistance given by health professionals on the ICU, in regard to the positioning in bed, to patients undergoing MV, before and after an educational intervention?

Based on this question, we established the following objective: to find out whether there's a difference in the assistance given by health professionals to patients undergoing MV interned on an ICU in regard to the position in bed, before and after an educational intervention in the city of Natal. We intend thus to have this research's results to help on the improvement on the process of care given to patients under MV, minimizing iatrogenic actions produced by inadequate care given to these patients.

MATERIAL AND METHOD

Quasi-experimental study, with quantitative approach, time-series outlining and prospective data, performed on Hospital do Coração in Natal/RN. The population consisted of

31 professionals, among which were 22 nursing technicians, 03 nurses, 03 physical therapists and 03 physicians.

The data collection instrument use was constructed by Freire (2005) and adapted by us. The first part of the instrument comprises personal and professional identification, which include age, gender and instruction level, as well as professional category, time of service in the profession, time of work on an ICU, participation on previous training on VAP prevention, amount of training, place where the training was undertaken and its duration. The second part comprises the care given to the patient in relation to the patient's positioning in the bed. We made observations on the change of decubitus every 02 hours and to the maintenance of the bed's back rest on an elevation between 30° and 45°.

Data collection was performed in the months of November 2007 to march 2008, during the three shifts, on patients undergoing MV. Before initiating data collection, we had a meeting with all of the ICU's health professionals, on which we exposed our study's objectives and our intention of developing and educational intervention based on the participation and collaboration of all those involved. We also made clear that participation on the study's three stages was necessary. Afterwards, we asked them who accepted to take part of the study to read and sign a term of free and clear consent (TCLS), since all procedures would take place without previous scheduling.

With this precautions, 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, 2000).

It's important to stress that undergraduate students researching for Base de Pesquisa de Enfermagem Clínica took part on this study's development. In order for this collaboration to be effective, we had a preparatory stage with theme-specific bibliography study over 02 months. Afterwards, we had meetings to discuss this material and present the data collection instrument. Before initiating the collection, we went into the field to test the instrument together, in order to standardize its procedures.

The first stage of the collection consisted of a structured observation in which we adopted the process of event sampling. Once the first data collection stage was finished, we began the educational intervention directed at VAP prevention, in the period of January 02 to 31, 2008, with about 40 hours of classes for each of the 12 groups. These encounters happened in the professionals' work area itself, in the hospital auditorium or in the hospital infection control service room, during working hours.

Once the educational intervention was finished, we began the second and last stage of data collection, which consisted on a new observation of assistance given to patients undergoing MV, in the period from February 01 to March 27, 2008. The professionals participating in this stage were the same who took part in the first collection stage and in the educational intervention. Given that, we used the structured observation method, as we had done in the first stage of data collection.

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

RESULTS AND DISCUSSION

By analyzing the data, we detected a predominance of young professionals, in the age group of 20 to 30 (51.6%), female (64.5%) with completed middle-level instruction level (67.8%); most were nursing technicians (71.0%) with a service time of 05 to 09 years (40.0%); having being working on an ICU for 01 to 04 years (51.6%); 64.5% stated never having taken part on educational activities regarding VAP prevention and among those who did (35.5%), 72.7% had been to 01 or 02 events, offered by their employer (38.4%), with a duration of 12 to 24 hours (45.4%). As for gender and age group, Freire, Farias e Ramos (2006) found data similar to ours. Regarding the level of instruction, the predominance of middle-level instruction can be justified by the significant presence of nursing technicians, since that is the minimum requirement for the formation of this professional category.

In respect to the observation of care related to positioning in bed, in the stage that preceded educational intervention, on most observed opportunities was preceded by a decubitus change. It's worth stressing that there were situations in which the decubitus change was not executed due to clinical counter-indications, such as the bilateral presence of drains in the torso and severe hemodynamic instability, among others.

In the stage following the educational activity, the decubitus change was performed on 78.2% of the observations. Given that, there was a significant statistical difference (p = 0.0005). The absence of the patient's active or passive movement is a frequent cause for complications such as pressure ulcers, loss of muscle strength, thrombus-embolism, osteoporosis and pneumonia (JERRE et al., 2007). In order to prevent part of these problems, Passos and Castilho (2000) recommended the execution of decubitus change, since it allows better alveolar ventilation and eases gas exchanges.

Still in this context, Sepúlveda and Oliveira (2000) infer that in order to mobilize the patient undergoing mechanical ventilation, we can adopt different positions, using from decubitus changes to sitting the patient off the bed. These authors suggest that when we mobilize the patient we promote the draining of bronchial secretions, an improvement on gas exchanges, on muscle function and contribute to a resistance to diaphragm excursion, minimizing the occurrence of dyspnea.

Furthermore, the frequent variation of the bedridden patient undergoing MV aims at improving tissue perfusion. Muscle function and global circulatory function should thus be maintained, so as to guarantee the best possible conditions, avoiding the accumulation of complications from several organic systems, and so promoting tolerance to activities (SEPÚLVEDA; OLIVEIRA, 2000).

Differing from our results, Freire, Farias and Ramos (2006) found patients undergoing MV, with hospital star from 03 to 05 days, to have been mobilized in only 22 situations (19.30%); on those with a 06- to 08-day stay this procedure was executed 51 times (44.74%) and on the others hospitalized for 09 to 11 days, 41 times (35.96%).

Our study's results bring us to question the reasons that lead health professionals, especially middle-level ones, to not perform decubitus change on the patients. When we report to this category, it's because in our reality, they are the ones to actually give care to these patients. We know, however, that on the ICU there's a nurse on every shift that handles assistance, and even if they're not giving care directly most of the time, is expected to prescribe and supervise assistance.

That said, it's extremely relevant to, even further than instructing these professionals, elaborate feasible strategies of execution as well as of evaluation of this assistance. In this sense, the mere fact of pre-establishing a decubitus change time schedule for all of the unit's patients can become a facilitating element for the assistance supervision.

As for the maintenance of the bed's back rest on an elevation between 30° and 45°, in the stage prior to the educational intervention, on 95.5% of the situations this measure was taken. Likewise, in the stage following the educational activity, on most occasions (98.2%), the bed's back rest was kept elevated between 30° and 45°. There was, however, no statistically significant difference (p = 0,38).

Our findings are close to those reached by Helman Júnior et al. (2003), in a study aiming to verify whether the addition of an educational program would increase the likelihood of the bed's back rest raising on patients undergoing MV. The authors found that, 02 months after the intervention, the percentage of observations in which the back rest remained equal to or higher than 45° increased from 3.0% to 16.0% ($p<0.05$). However, despite the significant increase of occasions in which this measure was taken, one can notice their results were lower than ours.

Roderian et al. (2004), in a prospective study, aiming to document the back rest inclination on the best of patients undergoing MV found that on only 08 (2.78%) from a total of 288 occasions, the angle was equal to or higher than 45°. These data go against those found in or study.

As for the benefits of the bed's back rest elevation on VAP, the Spanish authors Ferrer and Artigas (2001) found on a systematic review that this is an effective measure and should thus be applied to patients undergoing MV and nasal-enteric probe nutrition.

In this sense, Dodek et al. (2004) concluded, based on a randomized study performed on a Canadian hospital's ICU, that the semi-recumbent position is associated to the diminution of VAP incidence, constituting a viable and low-cost measure.

CONCLUSIONS

Health professionals that give care to patients undergoing MV are characterized as predominantly young, aged 20 to 30 (51.6%), female (64.5%), with middle level of instruction (67.8%); most were nursing technicians (71.0%) with time of service of 05 to 09 years (40.0%); working on an ICU from 01 to 04 years (51.6%); 64.5% stated never having taken part on educational activities regarding VAP prevention and among those who did (35.5%), 72.6% had been to 01 or 02 events, offered by their employer (38.4%), with a duration of 12 to 24 hours (45.4%).

As for care regarding the patient's positioning on bed, before the educational intervention, on 51.3% of the occasions the change of decubitus was performed; after the educational intervention, on 78.2% of the occasions the decubitus change was performed, resulting in a significant statistical difference (p = 0.0005); **before:** on most observations (95.5%) the bed's back rest was kept elevated; **after:** the intervention, on 98.2% of the observations, the patient's back rest was kept elevated, yielding no significant statistical difference (p = 0.38).

We conclude that on 50% of the evaluated procedures there was a significant improvement on the quality of assistance given when compared to the moment prior to educational intervention.

KEYWORDS: Pneumonia, Ventilator-Associated (VAP), Education, Intensive Care Units.

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EDUCATIONAL ACTION RELATED TO BED POSITION AS A STRATEGY TO MINIMIZE THE RISK OF PNEUMONIA ASSOCIATED WITH MECHANICAL VENTILATION

ABSTRACT

INTRODUCTION: the relative risk of mechanical ventilation-associated pneumonia (VAP) can be related to the patient's characteristic and the preventive care used by the health team during his/her hospital stay. Among these we can cite the patient's positioning in bed. Thus, when this care is not performed, the patient is at risk of acquiring VAP due to the aspiration of gastric and oral-pharynx contents. When this failure is detected during care, some measures must be taken, both to prevent as well as to minimize the worsening of VAP. Studies prove the reduction on VAP rates when educational strategies are taken in order to change professional practice actions. **OBJECTIVE:** to identify whether there's a difference between care given by health professionals to patients undergoing mechanical ventilation interned in an ICU in regard to bed positioning, before and after an educational intervention. **METHODOLOGY:** quasi-experimental study, quantitative, time-series outlining, prospective data, in a hospital in the city of Natal, from November 2007 to march 2008, with 31 nursing professionals on three moments: systematic observation, educational intervention, considering flaws, and replication of the observation. **RESULTS:** we detected a young population, female, most nursing technicians, never having been through training regarding VAP prevention; as for care related to the patient's positioning in bed, before the educational interventional the decubitus change was performed on 51.3% of the occasions; afterwards on 78.2% of the occasions (p=0.0005); before: 95.5% the bed's back rest was kept elevated; afterwards: the intervention, on 98.2% of the observations, the patient's bed's back rest was kept elevated (p=0.38%). **CONCLUSION:** there was an improvement on the quality of care five when compared to the moment prior to the educational intervention.

KEYWORDS: Pneumonia, Ventilator-Associated (VAP), Education, Intensive Care Units.

ACTION ÉDUCATIVE LIÉE Á LA POSITION D´ALITEMENT EN TANT QUE STRATÉGIE POUR MINIMISER LE RISQUE DE PNEUMONIE ASSOCIÉ À LA VENTILATION MÉCANIQUE

RÉSUMÉ

INTRODUCTION: le risque associé à la pneumonie liée à la ventilation mécanique (PAV) peut être en rapport avec les caractéristiques du patient et aux soins préventifs appliqués par l´équipe de santé au cours de l´hospitalisation. Parmi ceux-ci, nous pouvons considérer la position du patient alité. En effet, quand ce soin n´est pas observé, le patient est exposé au risque de contracter une PAV par l´aspiration du contenu gastrique et de l´oropharynx. Quand cette situation est détectée au cours de l´administration des soins, certaines mesures doivent être implémentées, aussi bien pour prévenir que pour minimiser l´aggravation de la PAV. Les recherches révèlent une diminution des taux de PAV quand des stratégies éducatives sont adoptées

pour modifier la pratique professionnelle. **OBJECTIF:** identifier s´il y a différence au niveau de l´assistance fournie par les professionnels de santé aux patients sous ventilation mécanique en réanimation, par rapport à la position d´alitement, avant et après une intervention éducative. **MÉTHODOLOGIE:** étude quase expérimentale, quantitative, à délimitation temporelle et sérielle, et aux données prospectives, menée à l´Hôpital de Natal entre novembre 2007 et mars 2008, avec 31 professionnels infirmiers, sur trois stages: observation systématique, intervention éducative en fonction des erreurs, et nouvelle observation. **RÉSULTATS:** nous avons eu affaire à une population jeune, féminin, pour la plupart des techniciens infirmiers et qui n´avaient jamais reçu de formation à propos de la prévention de PAV; quant aux soins liés à la position d´alitement, dans 51,3% des cas la modification de la position fut effectuée avant l´intervention éducative; après cette dernière, dans 78,2% des cas (p=0,0005); le chevet du lit fut maintenu en élévation dans 95,5% des cas avant l´intervention éducative; après celle-ci, dans 98,2% des cas (p=0,38). **CONCLUSION:** il y eut une amélioration de la qualité de l´assistance fournie après l´intervention éducative.

MOTS-CLÉS: Pneumonie Liée à la Ventilation Mécanique (PAV), Éducation, Unités de Réanimation.

ACCION EDUCATIVA RELACIONADA A LA POSICION EN LA CAMA COMO ESTRATEGIA PARA MINIMIZAR EL RIESGO DE NEUMONIA ASOCIADA A LA VENTILACION MECANICA

RESUMEN

INTRODUCCIÓN: el riesgo de neumonía asociada a la ventilación mecánica (PAV) puede estar relacionada a las características del paciente y los cuidados preventivos utilizados por el equipo de salud durante su hospitalización. De entre estos podemos referir el posicionamiento del paciente en la cama. Así cuando este cuidado no es ejecutado, el paciente corre el riesgo de adquirir PAV debido a la aspiración del contenido gástrico y de la orofaringe, Cuando detectada esa falla durante el cuidado prestado, algunas medidas. Deben ser tomadas , tanto para prevenir como para minimizar el agravamiento de la PAV Pesquisas comprueban reducción de los índices de PAV cuando adoptadas estrategias Educativas para modificar acciones de la práctica profesional. **OBJETIVO:** identificar si hay diferencia entre la asistencia aplicada por los profesionales de salud a los pacientes bajo ventilación mecánica internados en la UTI en relación al Posicionamiento en la cama, antes y después una intervención educativa; **METODOLOGÍA:** estudio casi experimental, cuantitativo, delineamiento tiempo-serie.,datos prospectivos, en hospital de Natal entre noviembre de 2007 y marzo 2008 com 31 profesionales de enfermería en tres momentos: observación sistemática, intervención educativa considerando las fallas y replicación de la observación. **RESULTADOS**: detectamos una población joven, sexo femenino, en la mayoría técnicos de enfermería y nunca realizó entrenamiento acerca de la prevención de PAV. Cuanto a los cuidados relativos al posicionamiento del paciente en la cama ,antes de la intervención educativa en 51,3% de las veces la mudanza de cúbito fue realizada después en 78,2% de las veces (p=0.005) antes 95,5% la cabecera de la cama del paciente fue mantenida, después de la intervención, en 98,2% (p=0,38). **CONCLUCIÓN**: hubo mejora en la calidad de la asistencia prestada cuando comparados al momento anterior a la Intervención educativa.

PALABRAS CLAVE; Neumonia Asociada al Ventilador; Educación; Unidades de Terapia Intensiva

AÇÃO EDUCATIVA RELACIONADA À POSIÇÃO NO LEITO COMO ESTRATÉGIA PARA MINIMIZAR O RISCO DE PNEUMONIA ASSOCIADA À VENTILAÇAO MECÂNICA

RESUMO

INTRODUÇÃO: o risco relativo de pneumonia associada à ventilação mecânica (PAV) pode estar relacionada às características do paciente e aos cuidados preventivos utilizados pela equipe de saúde, durante sua hospitalização. Dentre estes podemos referir o posicionamento do paciente no leito. Assim, quando este cuidado não é executado, o paciente corre o risco de adquirir PAV devido à aspiração do conteúdo gástrico e da orofaringe. Quando detectada essa falha durante o cuidado prestado, algumas medidas devem ser tomadas, tanto para prevenir como para minimizar o agravamento da PAV. Pesquisas comprovam redução dos índices de PAV quando adotadas estratégias educativas para modificar ações da prática profissional. **OBJETIVO:** identificar se há diferença entre a assistência prestada pelos profissionais de saúde aos pacientes sob ventilação mecânica internados na UTI em relação ao posicionamento no leito, antes e após uma intervenção educativa. **METODOLOGIA:** estudo quase-experimental, quantitativo, delineamento tempo-série, dados prospectivos, em Hospital de Natal, entre novembro de 2007 e março 2008, com 31 profissionais de enfermagem em três momentos: observação sistemática, intervenção educativa, considerando as falhas, e replicação da observação. **RESULTADOS:** detectamos uma população jovem, sexo feminino, na maioria, técnicos de enfermagem e nunca realizou treinamento acerca da prevenção de PAV; quanto aos cuidados relativos ao posicionamento do paciente no leito, antes da intervenção educativa em 51,3% das vezes a mudança de decúbito foi realizada; após em 78,2% das vezes (p=0,0005); antes: 95,5% a cabeceira do leito do paciente foi mantida elevada; após: a intervenção, em 98,2% das observações, a cabeceira do leito do paciente foi mantida elevada (p=0,38). **CONCLUSÃO:** houve melhora na qualidade da assistência prestada quando comparados ao momento anterior à intervenção educativa.

PALAVRAS-CHAVE: Pneumonia Associada à Ventilação Mecânica (PAV), Educação, Unidades de Terapia Intensiva.