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PREEDAWAN BOONMARK: NUCHAL ARCH AND HOLDER: AN INVENTION FOR BETTER SECURING ENDOTRACHEAL TUBES IN NEONATES. THESIS ADVISORS : WILAI LEESUWAN, M.Ed., JARIYA WITTAYA-SOOPORN, D.N.S., WANTANA MANEESRIWONGUL, D.N. Sc., 109 p. ISBN 974-664-089-5

The purpose of this quasi-experimental research was designed to evaluate the use of nuchal arch and holder for securing endotracheal tubes among intubated neonates by comparing the incidence of accidental extubation between two groups; the experimental group, who received the use of nuchal arch and holder integrated with routine management, and the control group, who received only routine management.

A purposive sampling technique was used for sample selection, then stratified into two strata; term baby ($GA \geq 37$ weeks) and pre-term baby ($28 \leq GA < 37$ weeks). For every two subjects in each stratum, the first subject was randomly assigned to the experimental or the control group, and the second subject was automatically assigned to the other group. The study was performed at the Pediatric Intensive Care Unit of Prapokklao Hospital from June to October 1999. There were 62 subjects in this study. Each of the control and experimental groups included 31 subjects and the patient intubated days (PID) were 157 PID and 242 PID, respectively. Of these 62 subjects; eight subjects were re-recruited in the study. The homogeneity of subjects' characteristics were analyzed by using SPSS/FW and the evaluation of using nuchal arch and holder for securing endotracheal tubes among intubated neonates were analyzed by using EPI-INFO program.

The study found that the incidence density of accidental extubation among intubated neonates who received the use of nuchal arch and holder integrated with routine management was 1.65 accidental extubations /100patient intubated days (PID), while that among the others, who received only routine management was 9.55 accidental extubations/100PID. The relative rate was 0.17 (95%CI 0.06-0.52 accidental extubation/100PID). The prevented fraction was 82.70%(95%CI 47.87%-94.26%).

The results of this study provide alternative methods for securing endotracheal tubes among intubated neonates by the use of nuchal arch and holder. This inexpensive and available device is also a guide-line for the improvement health care process.