

Introduction

The neonatal period describes the period of time immediately after birth and lasting through the first month of extra uterine life, where the neonate adjusted from intrauterine life. However, to begin life the neonate must immediately establish pulmonary ventilation in conjunction with marked circulatory changes. Meanwhile, the first 24 hours of life constitute a highly vulnerable time, during which the neonate must make major physiological adjustment to extra uterine life. So that, the nurse should be accurate in understanding the neonatal characteristics and needs (*Schilling McCann, 2006*).

Neonates, particularly those who are born premature may require ventilation assistance immediately after birth, since their lung may not be fully developed. Some neonates may have serious respiratory problems or complications from birth such as respiratory distress syndrome and apnea of prematurity (*Behreman, et al., 2004*). The majority of neonates who require ventilation are premature infants who born with surfactant deficient lungs that lead to the development of Respiratory Distress Syndrome (RDS) (*Timothy, 2007*).

Mechanical ventilation has become the most commonly used mode of life support today. It is used in management of neonates with a wide spectrum of chronic diseases that can cause respiratory failure (*Papadakos & Lachmann, 2008*). The purposes of mechanical ventilation are to deliver oxygen to the alveoli in sufficient concentration to allow adequate transfer to the blood in the pulmonary capillaries and promote the removal of carbon dioxide which has accumulated in the alveoli (*Johnston, et al., 2003*).

Neonatal nursing is the provision of nursing care for newborn infants up to 28 days after birth. Nursing care for neonates undergoing mechanical ventilation involve minute to minute observation and assessment with prompt intervention. Initial interventions focuses on supporting vital functions and preventing complications. However, the nurse must allow parents for verbalization of anxiety, fear, anger and concerns (*Harper, 2010*).

Quality of nursing care to neonates defined as the balance that demonstrates professional commitment to neonatal care. Quality of nursing care means doing the right thing, at the right time, in the right way, for the right patient and having the best possible results (*Agency for Health Care Research and Quality, AHCRO, 2001*).

Quality of nursing care for neonates undergoing mechanical ventilation focus on providing hour-by-hour care for each neonate in the NICU. Nurses assess the neonates undergoing mechanical ventilation, during their admission to the NICU that includes physical characteristics such as color, neuromuscular tone, skin integrity, vascular perfusion and edema. Other assessment activities include measuring and recording daily weight, intake and output, temperature of the neonate, electrocardiogram, quality of breathing, blood pressure and oxygen saturation monitoring. Moreover, the nurse also evaluate the patency and security of endotracheal tubes (ETT) and assessing the placement and security of all other invasive tubes such as chest tubes and nasogastric tubes (*Goldsmith & Karotkin 2003*).