Tehran University of Medical Sciences

International Campus

School of Nursing and Midwifery

The effect of Kangaroo Mother Care on the incidence of infection, thermoregulation, and weight gain in neonates admitted in the NICU

A Thesis as fulfillment of the requirement for Master of Science degree in Neonatal Intensive Care Nursing

By:
Asma Noori

Supervisor:
Dr. Jamalodin Begjani

Advisors:
Dr. Jilla Mirlashary
Dr. Yousef Erfani
Dr. Hadi Ranjbar

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Abstract

Background: Being fragile and yet to develop competent immune systems, many premature neonates; are prone to health-related problems, and they require admission in neonatal intensive care (NICU) units. Newborns with low birth weight (LBW) are considered vulnerable, and they are at higher risk of mortality. Furthermore, neonates whether preterm or small for gestational age (SGA), are vulnerable to develop infections due to the deficient humeral and cellular immune mechanisms and ineffective immunologic responses. Each year, an estimated 56,624 neonates die because of sepsis resulting from bacteria resistant to first-line antimicrobial agents. On the other hand, hypothermia is another reason for newborns' admission to critical care units, and it is considered a silent killer. Infants who are born small or premature are recognized as needing more intense thermal protection. Moreover, it has been observed that an improved level of newborn care can decrease mortality rates. Kangaroo Mother Care (KMC) is a cost-effective alternative to costly incubator/warmer care. Therefore, this study provided evidence about the effects of KMC on the incidence of infection, thermoregulation, and weight gain.

Objective: To compare the effect of Kangaroo Mother Care (KMC) and conventional care (CC) on the incidence of infection, thermoregulation, and weight gain of neonates admitted in the NICU at French Medical Institute for Mothers and Children (FMIC) hospital, Kabul, 2019

Method: A quasi-experimental study has been conducted over three months. The outcome variables were incidence of infection, temperature regulation, and weight gain. The subjects were enrolled with a convenient method of sampling according to inclusion and exclusion criteria. They were assigned into two groups (KMC and CC) at different times but in the same season (winter). Each group has been supervised for one and half months and the changes in the baby's weight, temperature, and incidence of any infection have been documented. After the intervention, the data was recorded, tabulated and the results were analyzed statistically by SPSS statistical software (version 16). We described the results with mean, standard deviation, frequency, percentage. We used the independent-test, Chi-Square test to analyze the outcomes.

Result: There were significant differences in the incidence of infection and weight gain before and after intervention between the two groups. The number

of negative cases was 13(26%) and the number of positive cases was 12(24%) in the control group. Also, the number of positive cases was 3(6%) and the number of negative cases was 22(44%) in the intervention group. The Chi-Square test value obtained 0.005, which was significant, $P \leq 0.001$. In the pretest, the mean value of weight was 1.62 with a standard deviation of (.35) in the control group and the mean value of weight was 1.33 with a standard deviation of (.31) in the intervention group. In the posttest, the mean value of weight was 2.09 with a standard deviation of (.51) in the control group, and the mean value of weight was 2.19 with a standard deviation of (.35) in the intervention group. The paired "t" test value obtained (-.775) was significant, $P<0.05$. The thermoregulation among babies changed; however, it wasn't significant $P>0.05$.

Conclusion: KMC is an effective method of care for preterm babies and it has an effect on different aspects of a preterm baby like weight gain, the incidence of infection and we can say in general on their growth and it is a cost-effective method too especially for the neonatal services in developing countries like Afghanistan. According to the findings of this study it was affected on gaining weight of babies and positive factor for prevention of infection among preterm babies but for thermoregulation, it didn't give the significant result and it needs to study more and need to more time for this aspect.