**Nurses’ Performance Regarding**

**Feeding of Neonates**

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**Abstract**

Newborn and Infant feeding are a cornerstone of care for childhood development. Even in resource poor settings, improved feeding practices can lead to improved intakes of energy and nutrients, leading to better nutritional status. Breast milk is the ideal source of nutrients for babies. Furthermore, breast milk contains substances that help the immune system fight diseases that affect the lungs, stomach and intestines. Such infections are relatively common in low-income countries. **The aim** of this study was to assess nurses’ knowledge and performance regarding neonatal feeding in NICU. Two tools were used in this study;nurses’ structured interview questionnaire sheet to assess sociodemographic characteristics and knowledge regarding neonatal feeding and observation checklist to assess nurses’ practice toward neonatal feeding. **This study conducted at** the neonatal intensive care units in Benisuef general Hospital & Ain shams (children hospital and maternity & gynecological hospital) affiliated to Ain shams University Hospital. The study will include all available nurses staff (50 nurse) providing care for neonates in the above mentioned settings. **The finding of this study revealed that** nearly half (48.0%) of the studied sample was from Benisuef general hospital, also, more than half of the studied sample (62.0%) was aged <30 years and 76.0% of them were diploma education. And less than half (42.0%) of the studied sample had more than 10 years experiences. As regards distribution of the studied sample according to their total knowledge score for feeding, it was clear that half of them (50.0%) have good knowledge about neonatal feeding. While, more than half of the studied sample (54.0%) was incompetent in neonatal feeding. The study concluded that: there’s highly statistical significant difference was found between socio-demographic characteristics of the studied sample and their total knowledge score regarding neonatal feeding p<0.001. Meanwhile there’s no statistical significant difference were found between age, education of the studied sample and their total practice score regarding neonatal feeding p>0.05 respectively. And there was positive correlation between total knowledge score of the studded sample and their total practice score regarding neonatal feeding with no statistically significance difference p>0.05. **This study recommended that:** An orientation programs should be developed for newly appointed nurses to prepare them before working at the NICU and periodical continuous on job training programs for neonatal nurses to refresh and improve their knowledge and performance

**Key words:** feeding of neonates, NICU nurse.

**Introduction**

**F**eeding in the neonatal period is a complex activity demanding efficient coordination between the rhythmic processes of suck, swallowing, and respiration. It should be initiated as soon after birth as possible, depending on the infant's ability to tolerate enteral nutrition. This help in maintaining normal metabolism during the transition from fetal to extrauterine life **(Heird, 2007).**

 Neonatal feedings could be achieved via several routes nasogastric, orogatric, transpyloric, gastrostomy tube and orally by bottle or breast (**McGrath and Braescu, 2004)**. Decisions regarding feeding are depending on gestational age, birth weight, and clinical condition of the newborn. As regard, the time to start feeding, type, frequency, concentration, and rate of advancement may vary according to unit practices **(Kleinman, 2004 & Ditzenberger, 2010).**

The neonatal period and early infancy is more rapid than at any other period of life, so nutrition is very important for newborn because it help in growth and development so that nutritional allowance for a newborn need to take into account total calories, protein, vitamins, minerals and fluid **(Pillitteri, 2010)**

The role of the nurse in feeding is considered a vital role which can be achieved through assessment of the neonatal clinical status ,nutritional needs, careful skills in feeding, monitoring the feeding process, and proper selection and advancement of the formula **(Beyer, 2004)**.

**Significant of study**

At birth, all neonates need a great deal of energy and nutrients from food to help their bodies grow and to adjust for extra- uterine life. Therefore, feeding of neonates is an important and critical concern for all practioners in neonatal intensive care unit. Neonatal nurses need to be well equipped with an appropriate level of knowledge and practices to enable them in giving a professional care; this could be met by staff education or having protocols with update topics related to neonatal care.

**Aim of the Study**

The aim of this study is to assess nurses’ knowledge and performance regarding neonatal feeding in NICU.

**Research Questions:**

Are the nurses having a satisfactory level of knowledge and practice regarding feeding of neonates in NICU?

**Research design:**

Descriptive exploratory study was followed to achieve the aim of this study.

**Methodology**

**1-Technical design:**

The technical design includes research setting, subject and tools for data collection.

**Setting:**

The study conducted at the neonatal intensive care units in Benisuef general Hospital & Ain shams (children hospital and maternity & gynecological hospital) affiliated to Ain shams University Hospital .

**Subject:**

The study will include all available nurses staff (50 nurse) providing care for neonates in the above mentioned settings.

**Tools for data Collection:**

 Data for this study were collected using the following two tools:

**I-** questionnaire sheet: An Arabic questionnaire sheet, based on recent literature was filled by the researcher. It was designed by the researcher to assess sociodemographic characteristics and Nurses' knowledge regarding neonatal feeding.

II- Observational checklist: This tool adopted from **(USAID, 2010)** to assess nurses' practices regarding neonatal feeding.

**Scoring system of questionnaire and checklist:**

 All questions are scored on a scale from 0 to 100, with 100 representing the highest level of functioning possible. The scores of the items were summed up and the total divided by the number of the items, giving a mean score .these scores was expressed in mean and standard deviation.

**2-Operational Design:**

 The operational design includes preparatory phase, pilot study and field work.

**A) The preparatory Phase:**

 It included reviewing of current and past available literature and theoretical knowledge of various aspects of this issue in order to develop the data collection tools.

**B) Pilot Study:**

A pilot study was applied on a group of 5 nurses (10% of the sample) to test applicability of tools and to test clarity of the designed questionnaire, as well as to estimate the time needed to answer them. Nurses included in the pilot study were included in the study subject.

**C) Field Work**

 The actual field work started from March (2012) up to the end of August (2012) for data collection. The researcher introduced herself to the nurses in the previously mentioned settings; explained the aim of the study. In addition, the researcher was available at the feeding time, three days per week throughout the three shifts for data collection.

**D) Limitation of the study:**

There was some shortage in equipments and lack of cooperation from some nurses.

**3- Administrative Design:**

 To carry out the study, the necessary approvals were obtained from the hospital director and nursing director of Ain Shams University Hospitals. Official letters were issued to them from the faculty of nursing explaining the aim of the study to obtain permission for the collection of data.

**Ethical Considerations:**

 An oral consent was taken from nurse who agree to participate in the research process .The agreement for participation of the subjects was taken after aims of the study has been simply explained to them prior to data collection. They were assured that anonymity and confidentiality would be guaranteed and the right to withdraw from the study at any time without giving any reason.

**4-Statistical Design:**

 The data collection were obtained, organized ,categorized ,tabulated and analyzed .data were presented in tables, figures and diagram using the statistical package for social science (SPSS).The statistical significance associations were assessed using percentage (%),mean, standard deviation , Minimum, Maximum, Median ,F-test and p-value.

**Results**

 Table (1) illustrates that nearly half (48.0%) of the studied sample was from Benisuef general hospital, also, more than half of the studied sample (62.0%) was aged <30 years and 76.0% of them were diploma education. And less than half (42.0%) of the studied sample had more than 10 years experiences.

As regards distribution of the studied sample according to their total knowledge score for feeding, it was clear from table (2) that half of them (50.0%) have good knowledge about neonatal feeding.

 This result indicates that, more than half of the studied sample (54.0%) was incompetent in neonatal feeding as shown in table (3)

Table (4) reveals that there’s highly statistical significant difference were found between socio-demographic characteristics of the studied sample and their total knowledge score regarding neonatal feeding p<0.001.

 Table (5) reveals that there’s highly statistical significant difference were found between location of the studied sample and their total practice score regarding neonatal feeding p<0.01. Meanwhile there’s no statistical significant difference were found between age, education of the studied sample and their total practice score regarding neonatal feeding p>0.05 respectively.

Table (6) illustrates that was positive correlation between total knowledge score of the studded sample and their total practice score regarding neonatal feeding with no statistically significance difference p>0.05.

**Discussion**

Knowledge is very important, and its application in clinical practice is more important. So, Knowledge alone without practice has no effect. Moreover, new trends based on improving nurses’ Knowledge through nursing care standard could enhance their Knowledge and consequently improves their practice **(Soliman, 2005)**. In addition nursing staff must be updating their Knowledge and skills through regular review and assessment of competence **(Ingram & Lavery, 2005)**

As regards nurses’ characteristics, the present study revealed that, nearly half of the studied sample was from Benisuef general hospital and three quarter of sample had nursing diploma “Secondary School Education”. This finding was similar to that of **( Abo Zaid, 2008 & Sadek, 2010)** who found that the majority of nurses have nursing diploma (secondary school with less than five years of experience). This result on contrary with **(Sayed, 2009)** who found that more than two thirds of nurses graduated from faculty of nursing, while less than one third of them graduated from secondary school.

As regard age of the studied nurses, the present study revealed that, more than half of the studied sample was aged < 30 years. This result was also agreed with (**Sayed, 2009)** who studied assessment of nursing care giving for high risk neonates and mentioned that the majority of the studied sample were in age ranged between (20-< 35). These results were disagreed with (**Mohammed, 2010)** who stated that less than half of the studied nurses were in age group (20-< 25) years

As regards years of experience less than half of the studied sample had more than ten years of experiences; this is may be due to the majority of the studied sample were in diploma. This result goes in line with **(Ismael, 2010)** who found that less than half of the studied nurses were newly graduated and had experience less than 5 years. While (**Mohammed, 2010)** who studied nursing intervention offered to premature neonates at neonatal intensive care unit at zagazig university hospital,found that the almost of studied nurses had years of experience ranged from (1-< 10) years. This also disagreed with (**kunswa, 2006)** who studied needs, problem, and nursing care of newborn infants suffering from thrombocytopenia in the Neonatal Intensive Care Unit and reported that the majority of studied nurses had years of experience ranged from (1-< 10) years.

Concerning to distribution of the studied sample, half of them had good knowledge about neonatal feeding. This result agreed with **(Gad Allah, 2007, and Ismael, 2010)** who found that the majority of the studied nurses had high knowledge score about nutrition of premature neonate. This result also agreed with **(Mahmoud, 2004)** who found in his study that the majority of nurses had satisfactory score regarding all types of neonatal nutrition.

As regards distribution of the studied sample according to their total practice score for feeding, it was clear that slightly more than half of them have good practice about neonatal feeding. This is agreed with **(Abdel-Latif, 2004)** who mentioned that most nurses were incompetent during performing different feeding practice. This result contradicted with **(Sayed, 2009)**, who showed that more than one third of nurses under study were incompetent regarding to total practice.

 Regarding the relationship between socio-demographic characteristics of the studied sample and their total knowledge score regarding neonatal feeding, it was found that socio-demographic characteristics had strong effect on total knowledge score regarding neonatal feeding. These results supported with **(Amin, 2004)** who stated that, there was a significant relation between nurses’ knowledge and their age. On contrary **(Gad Allah, 2007 and Sadek, 2010)** found that there was no statistical difference between nurses’ knowledge and their age.

Regarding relationship between years of experience, training of the studied sample and their total knowledge score regarding neonatal feeding it was found that, years of experience, training had no effect on total knowledge score. This result on line with **(Sadek, 2010)** who mentioned that there was no statistically significant difference between nurses’ knowledge and performance and their attendance of previous training programs. This result also supported with **(Sayed, 2009)** who found that there was no statistically significant difference between nurses’ knowledge, practice, attitude and their years of experience. This may be due to that some nurses after a long period of continuous working in neonatal intensive care units do their practices as a daily routine and neglect to update their performance. This result disagreed with **(Fathy, 2004)** who detected significant differences between nurses’ years of experience and their knowledge and performance.

This result illustrated that there was a positive correlation between total knowledge score of the studied sample and their total practice score regarding neonatal feeding with no statistically significance difference. This result was agreed with **(Sadek, 2005)** who found that there was a significant difference between the nurses’ knowledge and their practice. And agreed with **(Hussien, 2002)** who mentioned that the improvement in nurses’ performance was positively correlated with the improvement in nurses’ knowledge. But this result was contradicted with **(Sayed, 2009)**, who showed that there was no statistically significant differences between nurses knowledge and their actual practice. This finding intensifies the importance of increasing the level of nurses’ knowledge to gain a subsequent improvement in their performance level.

**Conclusion**

**Based on the findings of the present study, it can be concluded that:** half of the neonatal nurses had a good knowledge about neonatal feeding, and more than half of them were incompetent in neonatal feeding practice. Furthermore socio-demographic characteristics of the studied sample had strong effect on their total knowledge. Meanwhile, years of experience and training of the studied sample had no effect on total knowledge. And the total Knowledge and practice of neonatal nurses affected by receiving nursing guidance book.

**Recommendation**

 **Based on the current study findings the following recommendations can be deduced:**All nurses must be oriented with the evidenced based guidelines for care of neonates especially feeding of neonates, an orientation programs should be developed for newly appointed nurses to prepare them before working at the NICU, periodical continuous on job training programs for neonatal nurses to refresh and improve their knowledge and performance, and provide procedure book containing all nursing activities regarding to care of neonates.

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**Results**

**Table (1):** **Number and percentage distribution of nurses’ characteristics. (n=50)**

|  |  |  |
| --- | --- | --- |
| Items | No  | % |
| **Location:*** Ain shams children hospital
 | 16 | 32.0 |
| * Ain shams maternity & gynecological hospital
 | 10 | 20.0 |
| * Benisuef general hospital
 | 24 | 48.0 |
| **Age in years:**  |  |  |
| * 20< 25
 | 15 | 30.0 |
| * 25 < 30
 | 16 | 32.0 |
| * ≥ 30
 | 19 | 38.0 |
| **Education:**  |  |  |
| * Diploma
 | 38 | 76.0 |
| * Technical institute
 | 8 | 16.0 |
| * B.S.N
 | 3 | 6.0 |
| * Other
 | 1 | 2.0 |
|  **Years of Experiences:**  |
| * < 5
 | 16 | 32.0 |
| * 5< 10
 | 13 | 26.0 |
| * ≥ 10
 | 21 | 42.0 |

 **Table (2):** **Number and percentage distribution of nurses’ knowledge regarding their total knowledge score regarding neonatal feeding.**

|  |  |  |
| --- | --- | --- |
| Items | No  | % |
| **total knowledge of neonatal feeding:** |  |  |
| * Poor
 | 3 | 6.0 |
| * Average
 | 22 | 44.0 |
| * Good
 | 25 | 50.0 |

**Table (3):** **Number and percentage distribution of nurses’ practice regarding total practice score of neonatal feeding.**

|  |  |  |
| --- | --- | --- |
| **Total practice** | No  | % |
| **Competent**  | 23 | 46.0 |
| **Incompetent**  | 27 | 54.0 |

 This result indicates that, more than half of the studied sample (54.0%) was incompetent in neonatal feeding.

**Table (4):** **Relation between socio demographic characteristics of the studied sample and their total knowledge score regarding neonatal feeding.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Items | Poor No= 3 | Average No=22 | Good No=25 | X2 | P |
| No  | % | No  | % | No  | % |
| **Location:*** Ain shams children hospital
 | 2 | 4.0 | 12 | 24.0 | 2 | 4.0 | 21.6 | \*\*<0.0001 |
| * Ain shams maternity &gynecological hospital
 | 1 | 2.0 | 6 | 12.0 | 3 | 6.0 |
| * Benisuef general hospital
 | 0 | 0.0 | 4 | 8.0 | 20 | 40.0 |
| **Age in years:** |  |  |  |  |  |  | 10.15 | \*\*<0.001 |
| * 20< 25
 | 0 | 0.0 | 6 | 12.0 | 9 | 18.0 |
| * 25 < 30
 | 3 | 6.0 | 9 | 18.0 | 4 | 8.0 |
| * ≥ 30
 | 0 | 0.0 | 7 | 14.0 | 12 | 24.0 |
| **Educational level:** |  |  |  |  |  |  | 22.2 | \*\*<0.001 |
| * Diploma
 | 1 | 2.0 | 18 | 36.0 | 19 | 38.0 |
| * Technical institute
 | 0 | 0.0 | 4 | 8.0 | 4 | 8.0 |
| * B.S.N
 | 2 | 4.0 | 0 | 0.0 | 1 | 2.0 |
| * Other
 | 0 | 0.0 | 0 | 0.0 | 1 | 2.0 |

 **Table (5):** **Relation between socio demographic characteristics of the studied sample and their total practice score regarding neonatal feeding.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Items | CompetentNo= 23 | Incompetent No= 27 | X2 | P |
| No  | % | No  | % |
| **Location:*** Ain shams children hospital
 | 5 | 10.0 | 11 | 22.0 | 9.8 | \*\*<0.01 |
| * Ain shams maternity &gynecological hospital
 | 9 | 18.0 | 1 | 2.0 |
| * Benisuef general hospital
 | 9 | 18.0 | 15 | 30.0 |
| **Age:** |  |  |  |  |  |  |
| * 20< 25
 | 8 | 16.0 | 7 | 14.0 | 1.1 | >0.05 |
| * 25 < 30
 | 8 | 16.0 | 8 | 16.0 |
| * ≥ 30
 | 7 | 14.0 | 12 | 24.0 |
| **Education:** |  |  |  |  | 1.9 | >0.05 |
| * Diploma
 | 16 | 32.0 | 22 | 44.0 |
| * Technical institute
 | 4 | 8.0 | 4 | 8.0 |
| * B.S.N
 | 2 | 4.0 | 1 | 2.0 |
| * Other
 | 1 | 2.0 | 0 | 0.0 |

**Table (6):** **Correlation between total knowledge score of the studied sample and their total practice score regarding neonatal feeding**

|  |  |
| --- | --- |
| Items | Total practice  |
| R  | P value  |
| Total knowledge  | 0.1 | >0.05 |