

## Nurses' Role Regarding Application of Discharge Plan for Neonates from the Intensive Care Units

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### Abstract

**Background:** Post-partum mothers must have knowledge about the care of newborns properly and correctly. Hospital discharge planning requires collaboration amongst nurses and a range of other healthcare professionals. **Aim of the study:** To assess nurses' role regarding application of discharge plan for neonates from the Neonatal Intensive Care Units. **Design:** A descriptive design was used in this study. **Setting:** This study was carried out in intensive care units at Menouf General Hospital and Al-Shohdaa Central Hospital in Menofya. **Subjects of the study:** A convenient sample included all available nurses (90) nurses at the NICUs of the mentioned settings and all available neonates. **Tools of data collection:** I pre designed questionnaire sheet used to assess demographic data about nurses, demographic data about neonates and nurses' knowledge related to discharge plan for neonates from NICU, II observational checklist sheet used to assess nursing practices during discharge of neonates and III attitude assessment questionnaire used to assess nurses attitude related to application of discharge plan for neonates from NICU. **Results of the study:** Represents that more than one third of studied nurses had satisfactory total knowledge, while less than quarter of them had average total knowledge and less than half of studied nurses had unsatisfactory total knowledge about discharge plan. More than one third of studied nurses were competent in their practice, while the rest less than two third of them were incompetent in their practice. Less than half of studied nurses had positive attitude regarding discharge of neonates from NICU and more than half of them had negative attitude regarding discharge of neonates from NICU. **Conclusion:** In the light of present study findings, the studied nurses had knowledge deficit, incompetent practices level and negative attitude related to application of discharge plan respectively. **Recommendations:** Increasing nurses' knowledge through educational program and training courses

**Key words:** Discharge plan, Neonates, Neonatal Intensive Care Units and Neonatal nurses.

### Introduction:

Neonatal stage is the most critical period of newborn's life, most of them require admission to NICU due to variety of reasons as preterm labor, respiratory distress and cardiovascular diseases. Neonates are usually separated from their mothers for several days to months to have different types of treatment. The health and well-being of neonates influenced by their

Maturity, birth weight, labor events, and neonatal care (Snapp & Reyna, 2019).

Neonatal intensive care unit is hospital department specialized in care of newborns suffering from medical or surgical complications mainly in the first 28days of birth. So, it contains highly trained medical and nursing staff and special equipment to provide highest level of care for admitted neonates. To improve quality of care and reduce rate of readmission (Kim et al., 2019).

Discharge planning begins as possible after time of admission, to promote parent involvement in their newborn's care. This help to decrease their stress and anxiety and facilitate safe transition to home. So, comprehensive

discharge planning developed and implemented by a multidisciplinary team consist of parents, physicians, neonatal nurse, pharmacists, social workers, and others (Gupta et al., 2019).

Comprehensive discharge plan aims to determine duties. This will facilitate discharge process, increase staff and parents' satisfaction and reduce the human's errors. Discharge from NICUs based on specific criteria as stable vital sings, spontaneous breathing, thermoregulation control, proper feeding and gaining a constant weight, and being free of infection (Berman et al., 2019).

Neonatal intensive care units' nurses play an important role in parent's education. They are responsible for success of discharge planning as they usually have close contact with the parents, due to long time spent with them during hospitalization (Voie et al., 2018).

#### **Significance of the study:**

In spite of the importance of nursing role in discharge plan and progression of neonatal outcome, researches in this aspect are not enough. Although the high standard of advanced progression in education level, application of discharge planning in developing countries is not met the appropriate standards (Lake et al., 2018).

Neonatal nurses must have specific knowledge and skills regarding optimal performance of discharge plan for neonates. Application of discharge plan leads to an improvement in neonatal health, reduce readmission rate, improve quality of care, increase parent's satisfaction, and help to improve the society (Shimizu & Mori, 2018).

According to the point of view of the researcher, application of discharge plan in the setting of present study is deteriorated, due to lack of nurse's awareness about the importance of their role in neonatal discharge plan in NICUs, which leads to decrease quality of care and increase rate of neonatal readmission. This type of the study not done before in El-menofyia so, application of this study will improve body of nurse's knowledge and

practices which will be reflected on the quality of neonatal care.

#### **Aim of the study:**

This study aimed to assess nurses' role regarding application of discharge plan for neonates from the intensive care units.

#### **Research Questions:**

- 1-What are the nurses' knowledge about discharge plan for neonates from the NICUs?
- 2-What are the nurses' practices regarding discharge plan for neonates from the NICUs?
- 3-What are the nurses' attitude regarding neonatal discharge plan?

#### **Subjects and Methods**

The present study was carried out through the four main designs as follows:

##### **I. Technical design**

##### **II. Operational design**

##### **III. Administrative design**

##### **IV. Statistical design**

##### **I- Technical design:**

The technical design includes research design, settings, and subject of the study and tools of data collection.

##### **Design:**

A descriptive study was utilized in this study.

##### **Settings:**

This study was conducted at NICUs in Menouf General Hospital and Al-Shohdaa Central Hospital at El-Menofyia.

##### **Subjects of the study:**

A convenient sample included all available nurses (90) nurses at the NICUs of the mentioned settings (40) nurses from Menouf General Hospital, (50) nurses from Al -Shohdaa Central Hospital regardless their age, gender, qualification or experience and agree to participate in this study and all available neonates.

##### **Tools of the study:**

Three tools for data collection were used in the current study as the following:

**Tool I: Pre-designed Questionnaire:**

It was designed by the researcher after reviewing the related literature and reviewed by supervisors. It was written in Arabic language for collecting data and including the following parts:

**Part 1:**

**A:** Concerned with demographic data about nurses such as: Age, gender, educational qualifications, years of experience and marital status.

**B:** Concerned with demographic data about neonates such as: Gestational age, chronological age, gender, diagnosis and mode of delivery.

**Part 2:**

It concerned with nurse's knowledge related to discharge plan for neonates at NICU such as definition, importance, responsible persons, discharge criteria and nursing role regarding application of discharge plan as (role regarding breast feeding, bottle feeding, eye care, cord care, male circumcision, skin care, developmental care, clothes, thyroid function test and immunization).

This tool was developed by the researcher based on reviewing of scientific related literatures. It consists of 86 questions, in the form of multiple-choice questions (MCQs).

**❖ Scoring system:**

A scoring system was classified as the following: The correct answer was scored as one mark and the incorrect /don't know answer was scored as a zero point. A total score of the questionnaire was 86 grades. These scores were summed up and converted into a percentage score.

**These scores were summed and converted into a percent score and categorized as the following:**

- **Satisfactory** knowledge if total score  $\geq 80\%$ .
- **Average** knowledge if total score from 70 < 80%.

- **Unsatisfactory** knowledge if total score < 70%.

**Tool II: Observational checklist Sheet:**

It was adapted from Larsson et al., (2017) & Degefa et al., (2019) & Lau, (2016) & Eraky & Hassan (2018) & Sobel et al., (2021) to assess nurse's practice as (breast feeding, formula feeding and eye care and cord care) & Shrestha et al., (2013) to assess nurse's practice for diaper care and Gözen et al., (2019) to assess nurse's practice for bathing.

A scoring system was followed to assess nurses' practice; each checklist was assigned a score according to sub-items. The items were evaluated as "done" was taken one mark and "not done" or "done incorrectly" was taken zero mark.

**These scores were summed and converted into a percentage score and was classified into 2 categories:**

- **Competent** if score  $\geq 80\%$ .
- **Incompetent** if score < 80%.

**Tool III: Nurses' attitude rating scale:**

Attitude rating scale was adapted from Likert like type rating scale, (1932) and Ingram et al., (2016) to assess level of nurse's attitude regarding application of neonatal discharge plan. It consisted of 11 statements to assess nurses' attitude regarding application of discharge plan for neonates at NICU. Nurses were asked to respond to statements on a 3-point Likert scale (agree, uncertain and disagree) as the following "Nurses should communicate well with patents and nurses have a role in discharge plan of new-born from NICU".

**❖ Scoring system:**

A scoring system was followed assess nurses' attitudes regarding application of discharge plan for neonates at NICU. Each statement of the attitude nurses scale was assessed nurses' responses and accordingly, they will be scored by 3 for "agree", 2 for "uncertain" and 1 for "disagree".

These scores were summed and converted into a percentage score and classified into 2 categories:

- **Positive** attitude if score  $\geq 70\%$ .
- **Negative** attitude if score  $< 70\%$ .

## II- Operational Design:

The operational design included preparatory phase, content validity, tool reliability, pilot study and field work.

### The preparatory Phase:

It included reviewing of related literature and theoretical knowledge of various aspects of the study using books, articles, scientific journals, internet's periodicals and magazines to develop tools for data collection were developed and then translated into Arabic language.

### Validity and reliability:

#### Tool validity:

Validity of the developed tools was tested using face and content validity. Validity was tested through a panel of five experts from pediatric nursing department: (2) professors and (3) assistant professors from faculty of nursing, Ain Shams University to ensure tools' comprehensiveness, accuracy, clarity, understanding, applicability and relevance.

#### Tool reliability:

Reliability of the developed tool was tested to determine the extent to which the sheet items are related to each other. The *Cronbach's alpha* test which is a test used to measure internal consistency was used in the analysis (value throughout the assessment are 0.71 for knowledge, 0.80 for practice and 0.81 for attitude. Statistical equation of *Cronbach's alpha* reliability coefficient normally ranges between 0 and 1, higher value (more than 0.7) denotes acceptable reliability.

### Ethical consideration:

Approval of the study protocol was obtained from ethical committee in the Faculty of Nursing at Ain Shams University before starting the study. The researcher clarified the objectives and aim of the study to the neonatal nurses included in the study. The researcher

assured maintaining anonymity and confidentiality of the subjects' data. They were informed that they allowed choosing to participate or not in the study and that they have the right to withdraw from the study at any time without giving any reasons.

### Pilot study:

A pilot study was carried out on 10% of nurses (9 nurses) from the study subjects to test the clarity, applicability, feasibility and relevance of the tools used, as well as to determine the needed time for the fill out of the study tools.

### Field work:

The purpose of the study was simply explained to the nurses who agree to participate in the study prior to data collection. The actual work of this study started and completed within six months from the beginning of November (2021) to the end of April (2022). Data were collected by the researcher through two days per week (Saturday and Sunday) in Menouf hospital from (8:00-2:00 pm) and (Wednesday and Thursday in Al-Shohdaa hospital from (8:00-2:00 pm) the questioner filled by nurses in the previous mentioned settings. Total time to complete tool was about 100 minutes, it took 25-30 minutes for each nurse to complete knowledge also, about 5-10 minutes to complete attitude and it took about 5-7 minutes for every procedure for observational checklist.

### III- Administrative Design:

To carry out this study, the necessary approval was obtained from the hospital' directors. A letter was issued to them from the Faculty of Nursing, Ain Shams University explaining the purpose of the study to obtain the permission for conducting this study.

### IV- Statistical Design:

The collected data were organized, categorized, tabulated and statistically analyzed using the Statistical Package for Social Science (SPSS) version (20) to assess nurses' level of knowledge, practice and attitude regarding application of discharge plan for neonates at NICU. Data were presented in tables and graphs. The statistical analysis included;

percentage (%), the arithmetic mean ( $\bar{X}$ ), standard deviation (SD), chi-square ( $X^2$ ) chi-square test was used to compare between groups in qualitative, linear correlation coefficient was used for detection of correlation between two quantitative variables in one group. By (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.).

Mean and  $\bar{X}$ , SD, for quantitative data: age, years of experience and last year of attending training course.

Frequency and percentage for qualitative data: gender, educational qualifications, attending previous courses, knowledge, attitude and practice level.

#### Significant level:

- **P value > 0.05 Non significant**
- **P value < 0.05\* Significant**
- **P value < 0.001\*\* High significant**

#### Results:

**Table (1):** Shows that less than two thirds (63.3%) of studied nurses their age ranged between 25- < 30 years old with mean age  $\pm$  SD 31.54 $\pm$ 5.62, while more than half (53.3%) of them are females, regarding to their educational qualification three fifths (60%) of them had bachelor degree of nursing. As well half (50%) of studied nurses their years of experience ranged from 10 to less than 15 years. Regarding to marital status more than half (54.2%) of studied nurses are married.

**Figure (1):** Shows that more than three fifths (62%) of studied nurses hadn't attended

training course about discharge plan for neonates.

**Table (2):** Shows that two fifths (40%) of studied neonates their gestational age ranged between more than 37 to less than 40 weeks with mean  $\pm$  SD 37.43 $\pm$ 3.08. Regarding to chronological age more than one third (36.7%) of them their age ranged between 7 to less than 14 days with mean  $\pm$  SD 12.7 $\pm$ 5.21. Regarding to gender three fifths (60%) of studied neonates were females.

**Figure (2):** Regarding to mode of delivery 82% of studied neonates were born with cesarean section, while 18% of them were born with normal vaginal delivery.

**Table (3):** Represents that more than one third (34%) of studied nurses had satisfactory total knowledge about discharge plan, while 17% of them had average knowledge. As well less than half (49%) of studied nurses had unsatisfactory total knowledge about discharge plan.

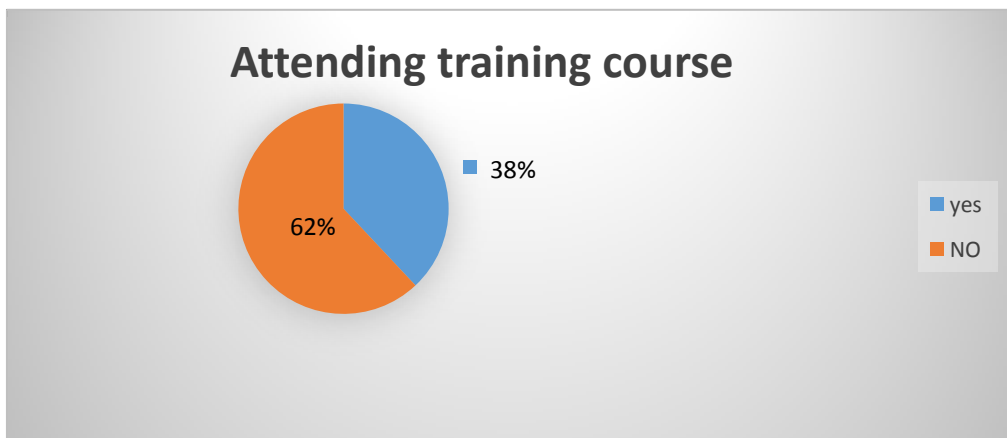
**Table (4):** Represents that more than one third (37.8 %) of studied nurses were competent in their total practice, while the rest of them less than two third (62.2 %) were incompetent in their total practice regarding application of discharge plan.

**Table (5):** Regarding to studied nurses' attitude this table demonstrates that less than half (42%) of the studied nurse had positive attitude regarding application of discharge plan for neonates from NICU, while more than half (58 %) of them had negative attitude regarding application of discharge plan for neonates from NICU.

**Table (1):** Percentage distribution of the studied nurses according to their demographic data (n = 90).

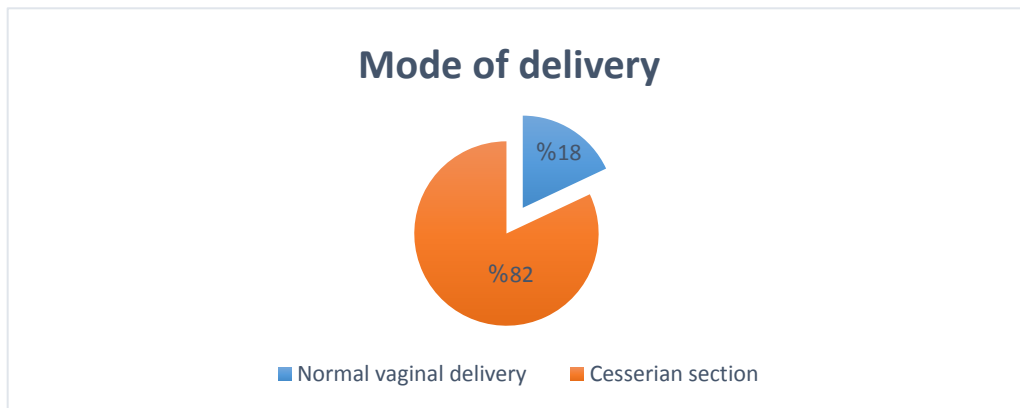
Demographic data of studied nurses	N	%
<b>Age / years</b>		
20 - <25	15	16.7
25 - <30	57	<b>63.3</b>
30 - <35	9	10.0
35 or more	9	10.0
<b>Mean ± SD</b>	<b>31.54±5.62</b>	
<b>Gender</b>		
Male	42	46.7
Female	48	<b>53.3</b>
<b>Educational qualifications</b>		
Diploma of nursing	3	3.3
Technical institute of health	24	26.7
Bachelor of nursing	54	<b>60</b>
Post graduate studies	9	10
<b>Years of experience</b>		
<5	24	26.7
5 <10	12	13.3
10 < 15	45	<b>50</b>
15 or more	9	10
<b>Marital status</b>		
Single	37	45.8
Married	53	<b>54.2</b>
Divorced	0	0
Widower	0	0

**Figure (1):** Percentage distribution of the studied nurses regarding to attending training course about discharge plan for neonates.



**Table (2):** Percentage distribution of the studied neonates according to their demographic data.

Demographic data of studied neonates	N	%
<b>Gestational age/weeks</b>		
<37	33	36.7
37	12	13.3
More than 37 – <40	36	<b>40.0</b>
40 or more	9	10.0
<b>Mean ± SD</b>	<b>37.43±3.08</b>	
<b>Chronological age /days</b>		
>7	24	26.7
7 - <14	33	<b>36.7</b>
14 - <21	24	26.7
21 or more	9	10.0
<b>Mean ± SD</b>	<b>12.7±5.21</b>	
<b>Gender</b>		
Male	36	40.0
Female	54	<b>60.0</b>

**Figure (2):** Percentage distribution of the studied neonates related to their mode of delivery.**Table (3):** Distribution of studied nurses related to their total knowledge about discharge plan (n= 90).

Total knowledge	N	%
Satisfactory	31	<b>34</b>
Average	15	<b>17</b>
Un satisfactory	44	<b>49</b>
<b>Total</b>	<b>90</b>	<b>100</b>

**Table (4):** Percentage distribution of studied nurses regarding to their total practice level.

Total practice	N	%
Competent	34	37.8
Incompetent	56	62.2
Total	90	100

**Table (5):** Percentage distribution of studied nurses regarding to their total attitude level.

Total attitude	N	%
Positive	38	42
Negative	52	58
Total	90	100.0

### Discussion:

Post-partum mothers after returning from the hospital must have knowledge about the care of newborns properly and correctly, because this can improve the skills of mothers in caring for their babies independently (**Munif et al, 2020**). Hospital discharge planning requires collaboration amongst nurses and other health care professionals. Collaboration among nurses and other healthcare professionals is needed for effective hospital discharge planning. The role of nurses is needed in providing health education to patients and families (**Goldman et al., 2018**).

So, the current study aimed to assess nurses' role regarding application of discharge plan for neonates from the NICUs.

Regarding to demographic data of studied nurses, the present study revealed that less than two third of the staff nurses their age ranged between 25 < 30 years old, with mean **31.54±5.62**. Also, the current results demonstrated that three fifths of studied nurses had bachelor degree, and more than half of studied nurses are females and married. These results supported with the study conducted by **Abdulrdha & Mansour, (2019)** about effectiveness of an instructional program on nurse's knowledge and practice concerning patients discharge planning post cardiac surgery

at cardiac centers and hospitals in Baghdad city with sample size 58 nurses and detected that mean age of studied nurses was **30.6±2.7** years, 58.8% of nurses with bachelor degree in nursing science and most of nurses were females. This may be due to that these results explained as nursing has traditionally been a female-dominated, but the percentage of male nurses has increased gradually.

Regarding to qualifications of studied nurses three fifths of them had bachelor degree. This is due to establishment of the faculty of nursing at EL-menofyia University. Therefore, most of the nurses complete their study after school of nursing to technical institute of nursing. In my opinion neonatal nurses need continuous educational program to catch updates in neonatal field and be up to date with new guidelines in this critical field.

Regarding to years of experience of studied nurses, half of them had from 10 years to less than 15 years in years of experience, these results agree with the study performed by **Al-Fatlawi & Ahmed, (2016)** about assessment of nurses' knowledge concerning discharge planning for patients with open heart surgery in cardiac center at Baghdad city with sample size 52 nurse and stated around half of them had 10 <15 years' experience.



Regarding to demographic data of studied neonates, the current study revealed that two fifths of studied neonates had gestational age from more than 37 to less than 40 weeks. Regarding to mode of delivery most of neonates were born with cesarean section. These results disagree with the study by **Chen et al., (2016)** about effect of an educational intervention on parental readiness for premature infant discharge from the neonatal intensive care units stated that infant average gestational age was 34 weeks (range = 24.8-36.9 weeks), infant birth weight ranged from 0.99 kg to 3.3 kg, with a mean birth weight of 2.17 kg. Regarding mode of delivery 51.6% of them were born vaginally.

According percentage distribution of staff nurses regarding their total knowledge about discharge planning, the current results demonstrated that more than one third of studied nurses had satisfactory knowledge and less than quarter of nurses had average knowledge and less than half of them had unsatisfactory knowledge about discharge plan. These results in cohort with the study performed by **Walter & Robb, (2019)** about promoting discharge readiness through staff education which provided continuous educational program in order to improve their knowledge about discharge plan application and its important effect on newborn care with continuous supervision to improve the quality of care. In my opinion these results not matched with education level of studied nurses and years of experience. They need continuous education course to increase their level of knowledge regarding this importance topics which will affect newborn health after discharge from hospital.

Concerning with level of total practice among studied neonatal nurses, the present study detected that more than third of studied nurses had competent practice during discharge of neonates from NICU, and less than two third of studied nurses had incompetent practice during discharge of neonates from NICU.

This may be due to absence of nursing competencies, lack of continuous training

program, follow up and supervision are the main causes of this incompetent practice. Application of nursing competency and continuous follow up of up-to-date recommended guidelines leads to improvement in level of nurse's practices and quality of newborn nursing care.

According to nurses' attitude regarding application of discharge plan for neonate from NICU, the current results stated that less than half of studied nurses had positive attitude to word application of discharge plan for neonates from NICU. These results disagree with the study performed by **Hall et al., (2019)** about improving staff knowledge and attitudes toward providing psychosocial support to NICU parents through an online education course, and detected that most of NICU staff showed significant improvement in both knowledge and attitudes in educating and communicating with parents of NICU newborn.

#### **Conclusion:**

**In the light of present study findings, it can be concluded that, the studied nurses had knowledge deficit and incompetent level of performance regarding practices level and negative attitude related to application of discharge plan respectively.**

For knowledge the study concluded that more than one third of studied nurses had satisfactory knowledge, while less than one quarter of them had average knowledge and less than half of studied nurses had unsatisfactory knowledge about discharge plan. For practices more than one third of studied nurses were competent in their practice, while the rest less than two third of them were incompetent in their practice. For attitude less than half of studied nurses of had positive attitude during discharge of neonates from NICU and more than half them had negative attitude during discharge of neonates from NICU.

#### **Recommendations:**

**In the light of the study findings, the following recommendations were proposed:**

1. Implementation of educational program for nurses to improve their knowledge about application of discharge plan for neonates.
2. Standardized nursing procedure, booklets and guidelines for the nurses should be available to guide them for giving the adequate care and health education for discharging neonates.
3. Further researches study on large sample and different areas of neonates at Egypt.

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