

FACTORS INFLUENCING DISCHARGE PLANNING IN NEONATAL INTENSIVE CARE UNITS IN SAUDI ARABIA: A SYSTEMATIC REVIEW

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ABSTRACT

Background: The discharge planning process is an indispensable component of neonatal intensive care. However, this comes with various challenges. This review was undertaken to inform practice.

Aim: The review was designed to identify factors that could exert an active influence on the discharge planning process in neonatal intensive care units.

Methods: A systematic review was conducted based on the Review and Dissemination guidelines from the University of York Centre.

Results: In total, the review includes 10 studies and one literature review, most of which were undertaken in developed countries and published between 2000 and 2014. The studies employ the qualitative, quantitative, or mixed methods approaches. The review establishes various challenges in implementing the discharge planning process, such as the lack of clear policies related to executing the process, communication issues, and the lack of clarity regarding the nurse's role.

Conclusion: The discharge planning process in neonatal intensive care units is controlled and limited by various organizational, personal, and socio-cultural predisposing factors.

Keywords: KSA, neonatal intensive care unit, NICU, discharge planning, systematic review

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INTRODUCTION

Hospitals around the globe incorporate discharge planning as a fixed component into their health systems¹. There are numerous benefits to discharge planning, especially within the neonatal intensive care unit (NICU), as it could decrease the risk of the infant being re-admitted, limit the duration of time spent in hospital, and offer families the confidence to take care of their sick infant at home². Nurses belonging to children's wards or units are crucial to the success of the discharge planning process in NICUs as they usually have close working relationships with the patients' families due to the time spent with them. However, organizational and personal obstacles may limit

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a nurse's role in discharge planning.

Numerous intricate factors need to be considered when discharging a patient and undertaking the process of moving them home or to another hospital. A discharge plan is integral to the action taken for a patient, an action administered with the objective of providing the best care for the baby and reducing cost with maximum efficiency¹. The process is considered successful when the patient remains safe and comfortable throughout the discharge and has no recurrence of illness (which would cause re-admission), and the family and relatives are prepared for the discharge and to care for the baby at home³. Furthermore, it is the responsibility of the professionals within the hospital to adjust the discharge process actively to improve efficiency, while increasing the patient's comfort and encouraging family support³.

Effective teamwork is important to enhance the discharge planning process⁴. Cooperation is

vital to improving how healthcare professionals work toward achieving this outcome for the patients⁵. Dynamic teamwork through a shared aim and the comprehension of individual needs and objectives is the focus of the discharge process. It is the collective responsibility of the team to draw on their knowledge, skills, and resources to improve delivery and application, to work as a unit, while being individually competent⁴. Nonetheless, various barriers may become apparent during the process of planning discharge, which may prove detrimental to the patients and their families in terms of the outcome, particularly related to re-admission and associated additional healthcare cost⁶.

METHODS & STRATEGIES

Review Method

This systematic review was designed to identify the factors influencing discharge planning in NICUs to inform practice in hospitals. Typically, a systematic review summarizes the relevant research evidence on a predefined research question using a number of methods⁷. Green *et al.* define a systematic review as a collation of all evidence that fits the pre-specified eligibility criteria to address a specific research question⁸. The objective of the review is to identify existing literature relevant to discharge planning and appraise the quality of available evidence using a systematic, scientific approach. This systematic review adheres to the guidelines from the University of York Centre for Review and Dissemination. It does not require formal ethical approval⁹.

Search Strategy

The review question was, “Which factors support or limit effective discharge planning of babies by nurses from neonatal intensive care units?” A variety of research studies, including those containing credible information on the issue under investigation, were identified using publicly available databases, supplemented by manual searches within library catalogs. The databases accessed were CINAHL, PubMed, Google Scholar, British Nursing Index, and

Saudi health databases. Saudi health journals and government reports were searched separately, supplemented by a review of the websites of specific journals (Nursing Times, Journal of Neonatal Nursing, and the British Journal of Nursing).

Key words such as discharge planning, neonatal intensive care unit, NICU, effective discharge, transition to home, barriers, and limitations were set. The use of the Boolean operators AND, NOT, and OR helped limit irrelevant evidence. The search was limited to research articles and reviews, published in or after 2000, and presented in English. Bettany-Saltikov report it is not possible to conduct a systematic review using evidence based only on expert opinion¹⁰. Inclusion and exclusion criteria were developed, as described in Table 1, to assess which items should be included in the review and ensure only the papers relevant to the issue under study were selected.

Table 1. Criteria for paper selection (inclusion and exclusion)

Inclusion	Exclusion
A research study report or literature review	Opinion piece, case study, or clinical report
Focused on discharge planning for NICU patients	Discharge planning for all children, not specific to neonates
Reports published in English	
Published between 2000 and 2015	

RESULTS

The literature search resulted in 376 articles. The titles of the articles were evaluated, using which these were scanned for their applicability to the issue under study. This process eliminated 81 articles, which limited the total to 295 articles. The review was narrowed again by reading the abstract of each remaining article to ensure the content reflected the titles. The latter process omitted a further 157 articles as it was discovered the content of the abstract did not match the titles. The remaining 138 articles were reviewed online more thoroughly and evaluated to ensure they were appropriate to be incorporated in the review. An additional 127 articles were found to be ineligible for various reasons: their focus was not on the specific topic, they were other than a primary research

report, they were formed on expert opinion rather than on data, or the content was simply not accurately represented by the abstract. The remaining 11 papers were related to discharge planning in NICUs and fulfilled the inclusion criteria (refer to Figure 1).

In terms of location, five studies were conducted in the US, two in Iran, and one each in Scotland, Australia, Denmark, and the UK (refer to Table 2). The 11 articles used in this review were not similar to each other as they followed different study approaches and data collection methods. These included three qualitative studies, five quantitative studies, two mixed methods studies, and one literature review article^{11–21}.

Figure 1. Selection of items to include in the review

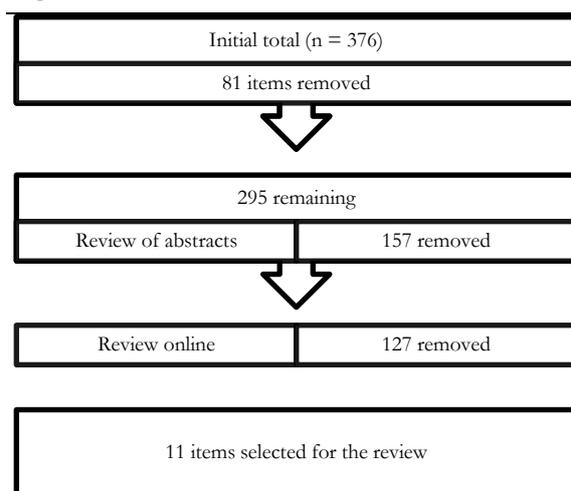


Table 2. Summary of studies included in review

Item	Aim	Design	Sample size and nature	Main findings
Valizadeh <i>et al.</i> 2013, Iran	Identifying factors influencing infant's transfer from NICU to home	Qualitative, interviews, purposive sampling	16 nurses & physicians working in NICUs	Cognition of infant's needs, effectiveness of training, and organizational context
Smith <i>et al.</i> 2012, US	Investigating specific post-NICU discharge outcomes and issues for families	Quantitative cohort study	287 families of NICU infants	12% of families were unprepared for discharge due to poor communication with nurses
Smith <i>et al.</i> 2009, US	(1) Quantifying and comparing family and nurse's perceptions regarding family's discharge preparedness (2) Determining elements that contribute to discharge preparedness	Quantitative cross-sectional	867 family-nurse pairs	Assistance with pediatrician selection and home preparation may improve percentage of families prepared for discharge
Kowalski <i>et al.</i> 2006, US	Determining which sources of information are most helpful for NICU parents	Quantitative cross-sectional	101 parents of NICU infants	Parents appreciated communicating with neonatologist but opined most information came from nursing staff
Sajedi <i>et al.</i> 2006, Iran	Indicating effect of implementing discharge planning on neonates	Quasi-experimental study	118 women and their neonates	Physical status of neonates was significantly better in experimental group ($p < 0.001$)
Sims <i>et al.</i> 2006, US	Identifying potentially better practices that create successful discharge planning in NICUs	Literature review		Creating accessible discharge planning tool kit, restructuring interdisciplinary communication tools, maximizing impact of caregiver educational tools, ensuring satisfaction through quality improvement tools, enhancing interactions with community
Broedsgaard & Wagner 2005, Denmark	Presenting parental experiences of support and coordination program after admission to NICU	Mixed methods	39 families	73% of families believed their health visitor had satisfactory knowledge about problems related to their infants and their families
Watts & Gardner 2005, Australia	Exploring ways in which concept and process of discharge planning are perceived by nurses in critical care units	Qualitative interviews	12 critical care nurses	All participants stated they were involved in discharge planning process; all but one considered nurse to be coordinator
Dudek-Shriber 2004, US	Investigating stress experienced by parents of infants in NICUs	Quantitative cross-sectional	162 parents	Greatest stress related to parental role; little to moderate stress regarding how the baby looks and behaves
Bain <i>et al.</i> 2003, Scotland	Exploring parents' perceptions of their preparation for discharge; identifying important areas of teaching	Mixed methods	374 parents of children from 21 NICUs	86% opined they were taught what they needed to know; just 31% had had opportunity to practice preparing feeds
Bissell & Long 2003, UK	Eliciting concerns experienced by parents during their babies' transfer from hospital to home	Qualitative interviews	10 sets of parents of infants born at less than 37 weeks of gestation	Participants were able to understand their adaptation to parenting at home with their baby and relate this process to their needs

Hawker's Assessment Tool (HAT), including a data extraction sheet (refer to the Appendix), was used to appraise the admitted studies, entailing the assessment of nine categories²². A point system for each category forms the basis of the assessment. It ranges from 1 to 4, where 1 indicates a very poor score and 4 indicates a good score, allowing a maximum score of 36 points. This method was selected for the current review, as it is applicable to both qualitative and quantitative studies²². Moreover, from a methodological point of view, the Hawker's Assessment Tool enables researchers to assess the quality of their articles and classify them as follows: a score of 36 indicates good research, 30 fair, 20 poor, or 10 very poor quality²². Therefore, using HAT, researchers are able to quantify and measure the quality of their reviewed articles.

The findings of this systematic review revealed factors influencing discharge planning in an NICU could be related to the organization, communication issues, the nurses' level of knowledge and perception of discharge planning, and stress experienced by the families of infants admitted to the NICU.

Organizational Barriers

The top-ranked organizational barriers reported by nurses as affecting their discharge planning practices included the shortage of staff nurses (which reduced the availability of time that could be devoted to this activity), insufficiency of some devices in the NICU, and lack of discharge planning policies^{12, 21}. Numerous developing countries suffer from considerable staff shortages, which limit the capability of health systems in delivering even a basic level of healthcare²³. Staff shortages could impede nurses' performance of their nursing activities, including discharge planning.

Numerous factors could lead to nurse shortage. The image of the nursing profession not being a career for the "upper class" is highly detrimental. This has lowered professional growth and awareness regarding nursing-related opportunities among high school students. Equitable pay arrangements together with

financial benefits have been shown to be important to Saudi nurses and may discourage recruitment and Continuation in employment²⁴. Moreover, nursing as a profession has a negative impact on one's family and personal life as it is accompanied by excessive workload and demands extended hours, night shifts, and shift rotations through weekends and holidays²⁵.

Reports indicate ever-increasing workload is characteristic of NICUs in the Gulf region²⁶. When the workload increases, nurses lack the time to complete all care tasks properly and are required to prioritize. As a result, the process of discharge planning is assigned low priority in comparison with more direct care needs.

Poor Communication

Effective communication, both verbal and written, and multidisciplinary teamwork are critical for effective discharge planning and the appropriate sequencing of events in NICUs^{15, 18, 21}. In other words, when members of health teams communicate with families, they are more capable to understand the families' needs. Identifying families' needs and planning the discharge based on these, often employing structured education packages, would help parents develop the confidence to bond with their infants and prepare them better to take the baby home^{27, 28}.

In this context, Smith *et al.* found that some nurses offered contrasting, ambiguous information regarding discharge planning¹⁸. This has given rise to the need to set clear, official guidelines for discharge planning, and effect clear communication between the NICU team and primary care providers who would offer support after the discharge. In another study where communication was established, parents appreciated the level of information exchange between them and the staff¹⁵. Therefore, appropriate communication between parents and nurses would aid the implementation of more effective discharge planning²¹.

Nurses' Knowledge and Perception of Discharge Planning

Contradictory beliefs held by members of various health teams regarding the processes and policies that guide each discipline's discharge planning practice influence the families' experience of the process. The literature concerning the discharge planning practice in neonatal acute care units suggests health professionals lack the comprehension required to implement the discharge planning process, and discusses how each discipline in this process makes its own contribution and comes with its own set of responsibilities²⁹. The nurse is required to achieve specific competency levels to be able to work autonomously as an effective neonatal practitioner in the area of neonatal intensive care^{30, 31}. It is vital for neonatal nurse professionals to understand complex interventions when working for the benefit of the child within their care and their immediate families. The neonatal nurses must ensure families are empowered with the knowledge to support the baby in their own care at home³².

Most nurses, according to Watts and Gardner, perceive it as their responsibility to formulate the complete discharge planning process¹³; however, just 30% of the families in the Broedsgaard and Wagner study reported they were given sufficient answers to their questions about their infants²⁰. The literature concerning nurses' actual behaviors indicated a lack of comprehension of the patient discharge process in relation to when and how it needs to be implemented².

Stress

A parent may often perceive the NICU as a stressful and frightening place. A baby in a fragile state requires delicate, empathetic discharge planning, which would help coach and enhance the coping and caring skills of the parent²⁹. Two studies in this review reported on the stress experienced by families affected by the discharge planning process^{11, 14}.

Numerous studies have been conducted identifying the various stressors experienced by families whose baby is in the NICU and on how best to meet these families' emotional and

educational needs. Stress may interfere with family members' ability to focus on, learn, and adapt the behaviors needed to achieve the desired outcome when caring for their infant²⁹. NICU nurses play an integral role in educating families during hospitalization and reducing their stress; however, this is often a long-term task and should be commenced soon after the neonate is admitted¹⁴. The goal of parenting education is to provide information and support that allows parents to move from the hospital setting, where health professionals care for the baby, to caring for the newborn baby confidently and independently at home. Incorporating teaching strategies that decrease parental stress could facilitate a smoother transition to the home and the development of competence in the parental role. Studies have found, in Saudi Arabia, stress is often an inhibiting contributor to the overall discharge planning process. This may be aggravated by a relatively low level of education, especially among females. Hamdan reported in 2005 that illiteracy rates among women and men in Saudi Arabia aged 15 years and above were estimated at 26.7% and 14.2%, respectively³³.

DISCUSSION

None of the quantitative study reports provided details of the power calculation for the estimation of the required sample size, and most of the studies were conducted at a single clinical site. The impact of small, potentially inadequate samples limits the rigor of the studies, and hence the results have to be treated with caution. However, appropriate sample sizes were included for the qualitative studies. Furthermore, the samples for the other studies were considerable, if not necessarily shown statistically to be adequate for the stated inferences. Given the paucity of the studies, it is likely a power calculation would not be possible anyway. Moreover, the comparable messages from the various studies lend strength to the overall outcome of the review. One study (Bain *et al.*) adopted a mixed methods design and selected the sample from 21 NICUs, which enhanced the accuracy of the results and

promoted the usefulness of the findings in other contexts¹⁹. A study by Sajedi *et al.*, which employed a quasi-experimental approach, provided stronger evidence of the impact of discharge planning on the health of neonates¹⁶.

The review suggests that process enhancement in the nursing field in Saudi Arabia would improve its stature in the region and make it a valued career choice. The local workforce would have no language barriers, and understand and accept the strict cultural rules in the region. This in turn would improve the communication process with the families, which is imperative alongside the development of the hospital discharge planning policy and practice.

The apparent scarcity of discharge planning was evidenced in various studies, particularly within intensive care settings. To understand the causes behind this phenomenon, future studies should be conducted at different levels of the health policy involving administrators and the community, and efforts should be directed toward clarifying the process further. Research suggests more in-depth studies need to be conducted over a wider range, incorporating various countries with different input to obtain more generalizable results for the practical implementation of best practices within discharge planning.

A novel outcome of the review is nurses would benefit from routine feedback regarding the infant's progress at home. This information could be exchanged at a monthly feedback meeting for parents and the NICU staff³⁴. Identifying hidden problems experienced by parents after leaving the unit and better understanding elements within the discharge plan that were effective and acceptable could offer significant insight into the impact and effectiveness of discharge planning and promote further improvement in the process.

Saudi Arabia, an Islamic country, has some unique cultural facets. It is crucial for expatriate nursing personnel to be educated about the various aspects of the culture and tradition to provide quality healthcare to the local population. This could help improve the

communication process between NICU nurses and the Saudi families of hospitalized infants.

Understanding nurses' perception of discharge planning and reflecting on how external factors influence their attitudes could offer a deeper insight into the nursing role in discharge planning in neonatal units¹³. Explicit communication is vital between the family and multidisciplinary team and must begin early in the hospitalization period. Methods to improve communication need to be explored so there is clarity regarding expected treatment goals for neonates, the possible timeframe for discharge from hospital, and what must be achieved before this is possible.

The nursing role needs to be explicated and clear guidelines, criteria, or processes created in relation to discharge planning to increase nurses' commitment to completing the discharge planning activities¹². Moreover, a planning strategy that incorporates the entire nursing workforce is urgently required to combat the nursing shortage in Saudi Arabia³⁵.

CONCLUSION

Review findings indicate certain organizational and socio-cultural factors in Saudi Arabia hamper the discharge planning process. Moreover, the lack of education and cultural barriers could limit parents' critical involvement in the planned after-care of the neonates. In spite of the lack of research studies conducted from the Saudi perspective, the findings of available studies offer important information that matches the situation in the region. Overall, a multidisciplinary collaboration is needed for the success of the discharge planning process. This involves adapting effective healthcare policies, motivating health team members, and educating communities. Further studies on the topic are strongly recommended.

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APPENDIX

Assessment Tool by Hawker *et al.*²²

Author and title:					
Date:	Score				
	4: Good	3: Fair	2: Poor	1: Very poor	Comments
1. Abstract and title					
2. Introduction and aims					
3. Method and data					
4. Sampling					
5. Data analysis					
6. Ethics and bias					
7. Findings/Results					
8. Transferability/Generalizability					
9. Implications and usefulness					
Total score					

Abstract and title: Did they provide a clear description of the study?

- 4 Structured abstract with full information and clear title
- 3 Abstract with most of the information
- 2 Inadequate abstract
- 1 No abstract

Introduction and aims: Was there a good background and clear statement of the aim of the research?

- 4 Full, but concise background to discussion/study, containing up-to-date literature review and highlighting gaps in knowledge; clear statement of aim and objectives, including research questions
- 3 Some background and literature review are provided; research questions are outlined
- 2 Some background but no aim/objectives/questions, or aim/objectives are present, but background is inadequate
- 1 No mention of aim/objectives; no background or literature review

Method and data: Is the method appropriate and clearly explained?

- 4 Method is appropriate and described clearly (questionnaires included); clear details of data collection and recording
- 3 Method is appropriate, but description could be better; data is described

- 2 Questionable whether method is appropriate, but method is described inadequately; limited description of data
- 1 Method is not mentioned, AND/OR method is inappropriate, AND/OR no details of data are provided

Sampling: Was the sampling strategy appropriate to address the aim?

- 4 Details (age/gender/race/context) of who was studied and how they were recruited, and why this group was targeted; sample size is justified for the study, and response rates are shown and explained
- 3 Sample size is justified; most information is provided, but some is missing
- 2 Sampling is mentioned but with few, descriptive details
- 1 No details of sample

Data analysis: Was the description of the data analysis sufficiently rigorous?

- 4 Clear description of method of analysis. Qualitative studies: Description of how themes derived/respondent validation or triangulation. Quantitative studies: Reasons for tests selected/hypothesis driven/numbers add up/statistical significance discussed
- 3 Qualitative: descriptive discussion of analysis; quantitative
- 2 Minimal details about analysis
- 1 No discussion of analysis

Ethics and bias: Have ethical issues been addressed? Which ethical approvals have been acquired? Has the relationship between the researchers and participants been adequately considered?

- 4 Necessary issues of confidentiality, sensitivity, and consent were addressed; bias: researcher was reflexive and/or aware of own bias
- 3 Issues were acknowledged

- 2 Brief mention of issues
- 1 No mention of issues

Results: Is there a clear statement of the findings?

- 4 Explicit findings, easy to understand, and in logical progression, and tables, if present, are explained in text; results relate directly to aim, and sufficient data is presented to support findings
- 3 Findings mentioned but more explanation could be offered; data presented relates directly to results
- 2 Findings presented haphazardly (not explained) and do not progress logically from results
- 1 Findings not mentioned or do not relate to aim

Are the findings of this study transferable (generalizable) to a wider population?

- 4 Context and setting of study is described sufficiently to allow comparison with other contexts and settings, PLUS high score in Question 4 (sampling)
- 3 Some context and setting are described, but more are needed to replicate or compare the study with others, PLUS fair score or higher in Question 4
- 2 Minimal description of context/setting
- 1 No description of context/setting

Implications and usefulness: How important are these findings to policy and practice?

- 4 Contribute something new and/or different in terms of understanding/insight or perspective; suggest ideas for further research and implications for policy and/or practice
- 3 Two of the above (state what is missing in the comments)
- 2 Only one of the above
- 1 None of the above